Strategic Abilities for Flexibility and Efficiency

- A Quantitative Framework for Measuring Long-term Competiveness

Student: **Kristian Simoni Märcher**

Supervisor: Professor Torben Juul Andersen,

Department of International Economics and Management

MASTER THESIS

CAND. MERC. FINANCE AND STRATEGIC MANAGEMENT

SEPTEMBER 2014

No. pages: 78

No. characters: 160.594

Executive Summary

This study presents a quantitative approach for efficiently measuring *Strategic Abilities for Flexibility and Efficiency*. This is done in order increase the knowledge in an area, which has become increasingly relevant, namely the area of how to achieve long-term competiveness when markets are changing. More specifically the study is suggesting an approach to concretize and increase applicability of an area, which has previously been hard to use efficiently.

The studies main foundation is inspired by the theories of *Dynamic Capabilities* (Teece et al., 1997; Teece 1997), but does moreover rely on a number of other studies. Based on these different scholars a '3-times-3 ability matrix', arguably consisting of those abilities considered to be most relevant and widely accepted, is proposed. These abilities are linked with a number relevant slack measures, which enables these to be tested through statistical regression models.

The established independent variables are tested on a sample of corporations listed on the Copenhagen Stock Exchange (Nasdaq OMX Nordic). More specifically 33 corporations from three different sectors are included in the study.

Through the extensive testing the study is able to establish a highly relevant and applicable correlation between the performance measure *Return on Assets* and the two of the four measurable *Strategic Abilities for Flexibility and Efficiency*: *Resource Applicability* and *Financial Strength*, but does moreover acknowledge that a more holistic approach is necessary for fully identifying corporations long-term competiveness in changing markets.

ACKNOWLEDGEMENTS

The process of writing this thesis has been long and at times extremely tiring. The challenge of having a full time job on site of working on the thesis has at certain points in time made me doubt whether I would ever finish. Fortunately, there have been a number of people whose help has enabled me to finalize this project.

First, I will like to thank my family. My parents, Lisbeth and Klaus Märcher, who has continually encouraged me to finish the paper and who has also helped to facilitate good working conditions when I have temporarily retired to their house to work at the thesis. Moreover I would like to thank my brother, Ulrik Märcher, who has been supportive through different discussions and advice in regards to the paper.

Secondly, I would like to thank my employer Hilti, both the Danish and British organisation, which has supported as well as put pressure on me to finish my degree. Special thanks goes to my previous manager, Peter Andersen, who continuously emphasized the importance of me finishing the paper. Even after changing position your words stayed in the back of my head. In addition to this my current manager, Brendan Culleton, has been supportive in allowing me taking time off to finish what I started and has generally been very supportive.

Third, when I took the decision to restart the writing process to finish this paper in May this would not have been possible without the support and agreement of my supervisor, Torben Juul Andersen. Moreover our discussions have enabled me to increase the quality of the paper substantially.

Enjoy the reading.

TABLE OF CONTENTS

1. Introduction

Throughout the last decade the world has experienced one of the most volatile periods in history, including a number of economic up- and downturns that have surpassed everything the world has ever seen. These are types of changes that potentially threaten the existence of certain corporations, but which can also offer huge opportunities.

In order to analyse how corporations can cope with the challenges described above an extension of traditional strategic management theory, which has largely been dominated by the market-based view (Porter, 1980) and the resource-based view (Wernerfelt, 1984; Barney, 1991), is required. A range of studies exists within this area. The most famous being presented by Teece et al. (1997) in their famous article, *Dynamic capabilities and Strategic Management*.

But what are dynamic capabilities actually? Or to be more specific what kind of mechanisms is it that safeguards corporations from tumbling when markets are changing in an unfavourable direction, relative to the resources hold, while at the same time enabling these to efficiently reap the benefit when positive market conditions occur?

The answer is highly complex and the truth is probably that only very few people, not even professionals, know about this. Thus, this study is concerned with facilitating applicability and concretizing the area of *dynamic capabilities* (Teece et al., 1997; Teece, 2007), *strategic response capabilities* (Bettis and Hitt, 1995), etc. This is done by suggesting a quantitative approach for how to efficiently identify and measure the abilities, which will allow corporations to achieve long-term competitiveness when markets are changing. In this study these abilities are termed *Strategic Abilities for Flexibility and Efficiency*.

Throughout this study it will be revealed how this approach can be efficiently applied when developing and implementing strategy, but it may moreover serve as a useful tool in areas such as finance and investment.

The study proposes '3-times-3 ability matrix', which consists of nine abilities, which are arguably the most relevant and widely accepted within the area. These abilities are linked together with different slack measures, enabling these to be statistically tested on empirical data.

The empirical study will be based on corporations listed at the Copenhagen Stock Exchange (Nasdaq OMX Nordic). Former scholars within this area has primarily been focussed on the American market, but the Danish corporations high exposure towards global markets, the easy access to information as well as the non-existence on former studies on these makes these companies interesting. Moreover this should represent an objective and representative base for the study.

The structure of the paper will be as follows: The subsequent sections in this chapter will present the research question of the paper and will moreover establish the overall limitations for the study. The second chapter will present the methodological foundation for the paper. Chapter 3, the literature review, will present the previous scholars within the area of flexibility and efficiency, which will ultimately be combined in the concrete '3-times-3 ability matrix'. Moreover the concept of slack resources and slack measures will be introduced, which will allow for the empirical testing later on. Chapter 4 is dealing with the overall theoretical framework of the paper. Determining the different performance indicators used for the analysis and combining the different abilities identified in the '3-times-3 matrix' with the appropriate slack measures. In the end the statistical considerations for testing the dependent and independent variables towards one and another is presented. Chapter five covers the correlation analysis of the different dependent and independent variables used in this study. Chapter 6 is concerned with the main analysis of the paper, statistically testing the relationships between the measurable abilities for flexibility and efficiency towards the different performance indicators. Chapter 7 is a discussion of the overall findings of the paper and the different methodogical and theoretical findings behind this. At last the paper will be concluded in chapter 8.

1.1. Research Question

As mentioned earlier this paper is about corporations' ability to respond efficiently towards changes in their business environment, and more specifically how they can manage and develop those abilities that allow them to do so. As will be explained thoroughly in both the literature review and the theoretical framework below, strategic abilities for flexibility and efficiency are not necessarily the reason for being successful relative to competitors. Rather success is dependent on the resources hold by the firm as well as their position within the

market. Nonetheless for a firm to withhold this success throughout a longer period of time capabilities for rearranging resources as well as creating/acquiring new resources that meet the changed market conditions are needed. The distinction between resources and capabilities is necessary, but blurred and hence it may sometimes be impossible to separate them. Therefore despite the focus on abilities for flexibility and efficiency those resources initially creating the competitive advantage must also be addressed. The overall research question for this paper will hence be:

RQ: Why do corporations stay competitive over a significant period of time despite changing market conditions and can the abilities that allow them to do so be captured and measured efficiently?

In order to answer the research question three sub-questions must however be answered. The first sub-question will be related to the previous research within the area and will attempt to give a concretization of these. Hence, the first sub-question will be as follows:

SQ1*: Can the current scholars within the area of flexibility and efficiency be concretized in order to provide an overview for future research?*

The second sub-question is concerned with the measurability of the abilities proposed in SQ1. Suggesting for the abilities to be tested through well-known accepted methods. Therefore the second sub-question will be as follows:

SQ2*: Can the different strategic abilities for flexibility and efficiency be transformed into measurable entities and are these statistically significant in relation to corporate performance?*

The last sub-question is concerned with the findings that may occur. To exam whether these findings will, in fact, have any relevance when applied on real life data in the future. Therefore the sub-question will be as follows:

***SQ3**: What is the relevance of the results found for the abilities for flexibility and efficiency and can they be efficiently applied?*

By answering the research questions together with these three sub-questions it should be possible to get closer to giving an explanation to why some corporations manage to outperform their competitors over a significant time horizon.

1.2. Period of Analysis

As will be described thoroughly in the methodology. This paper is based on data from the period between 2004 Q1 and 2012 Q1. First and foremost an eight-year period seems like a reasonable time period to evaluate long-term competitivness. Moreover the last years have been affected of a number of significant economic, political, and technological changes, which have significantly changed the notion of doing business. The start of the period was influenced by political unrest due to ongoing war in Afghanistan and the newly started war in Iraq, both of which together with other factors may have influenced the rapid rise in oil prices throughout the period. Nevertheless the mid-00s were also influenced by significant growth that among other things were hugely influenced by the increasing demand from China and other East Asian economies. The most significant shock was however seen due to the Financial Crises, starting out in 2007 and accelerating after the fall of Lehman Brothers in 2008. At the end of the analysis period most national economies did still have to fully recover despite positive tendencies starting to occur (Claessens et al., 2014).

In general the period can be labelled highly versatile with the financial crises in the end of the period obviously being the most disrupting factor. Nevertheless, there have also been growth periods throughout the decade, which has enabled the most flexible and efficient firms to exploit the situation.

1.3. Delimitations

This paper is concerned with the identification and measurement of strategic abilities for flexibility and efficiency. As will be shown later on tying together the specific abilities with a range of slack measures enables the study to discover whether or not the ability is present or

not in the specific corporation. The linkage between the ability and the slack measure is based on former literature within the area of management and strategy as well as established theory within finance and accounting. What the paper does not do is however to statistically test the relationship of these linkages, which would have added further debt to the relevance of the study. This part is left out due to the overall limitations of the study, but also due to the research demands linked to such type of analysis. The resource- and network requirements are simply not present to undertake such type of analysis.

The analysis is moreover limited in terms of the corporations chosen for the analysis. The study focuses on the Danish based corporations listed at the Copenhagen Stock Exchange (Nasdaq OMX Nordic). As will be described later on this is done due to the global nature of most Danish corporations. Because of this Danish corporations are significantly exposed proceedings affecting the business world at both a regional and global level. Moreover the fact of the paper being written out of Copenhagen offers huge informational advantages.

At last from a theoretical point of view the paper is limited to areas that affects the flexibility and efficiency of corporations. This means that even though a certain area may be mentioned and may have a relation in a direct or indirect way towards the area this does not necessarily mean that the area will be treated throughout the paper. The paper does exclusively touch upon the areas, which will be highlighted below in the literature review.

2. Methodology

This chapter of the paper consists of the methodological considerations made in relation to the study. More specifically this chapter seeks to explain and underpin the relevance and existence of the study, but also the process and methods used in order to answer the research question and sub questions, presented earlier in the paper. The chapter starts with the overall research philosophy, explaining epistemological and ontological considerations. The second part is concerned with the research approach of the paper. Third, the research purpose for the study will be clarified. Fourth and last, the data used in the analysis will be presented.

2.1. Research Philosophy

As this paper is concerned with the long-term competitiveness of corporations these are generally assumed to behave in accordance with rational long-term profit maximization. However, with the strategic different abilities for flexibility and efficiency considered as a necessary instrument in this process the industries and individual businesses analysed are also influenced by factors that cannot be explained nor be considered completely rational. Most noticeable these factors can be grounded in historical events, an issue that has been singled out by several scholars as seen in the literature review above. The importance of history is known under a number of terms, such as: bounded rationality or path dependency. However the limited rationality may also be subject to more socially constructed factors such as norms, culture, and ideological considerations. Since these factors cannot be ignored, this paper will adopt a critical realist epistemology. Critical realism argues that the real world exists, but the way we experience and understand this truth is only in images and these are not directly observed (Saunders et. al. 2007). *"Ontology… is concerned with [the] nature of reality"* (Saunders et. al. 2007: 108). This paper perceives that the reality does exist externally, but that it is the basic way of collecting and analysing data that is 'coloured' and influenced by the social position applied. This paper therefore, departs from the recognition that everything in theory can be observed, thus, the paper applies an objectivist stand.

2.2. Research Approach

This study adopts a deductive way of reasoning. Below in the literature review the most significant scholars within the area of flexibility and efficiency will be introduced ultimately leading into the establishment of a '3-times-3 ability matrix'. Moreover the different scholars related to the subject of slack will be introduced. In combination these theories will be used to form different hypothesis, which is considered to be a central part of the deductive approach (Wilson, 2010). These hypotheses will be presented and tested statistically in the chapters below. Sneider and Larner (2009) give a graphical illustration of the deductive research approach, which can be seen below:

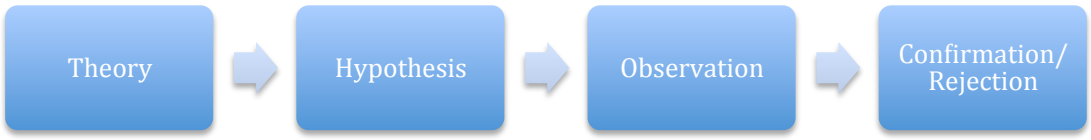

Figure 1: Sneider & Larner (2009) - Deductive Research

This illustration can be described as a rough description of the structure of this study. In the 'Research Purpose' part below the role of hypothesis will be further explained.

2.3. Research Purpose

Categorizing the research purpose of this paper is not straightforward. The reason is that the paper to a certain extent includes aspects of all three main categories of research purpose, being descriptive, explanatory, and exploratory (Saunders, 2007). The main can however be described as an explanatory study.

Starting out with the descriptive part, this study thoroughly describes and clarifies the existing studies and sub categories within the area of strategic abilities for flexibility and efficiency. This part of the paper is not just to be described as a standard literature review, but serves as a central building block for the framework suggested for achieving long-term competitiveness. This framework is the '3-times-3 ability matrix', which we subsequently test through the different hypothesis presented. The hypothesis testing is the central analytical part

of the study and is the part of the study, which is considered to be explanatory. Through established statistical methods the testable '3-times-3 abilities' are tested in relation to a range of different performance measures and is thus either rejected or accepted. The accepted hypotheses are brought forward to further assess the applicability of these measures and moreover identify the specific characteristics of each of these. The exploratory side of the study is related to establishing the quantitative relation between abilities for flexibility and efficiency. Slack measures has earlier been used in relation to different strategic management topics, which to some extent are related to flexibility and efficiency, but the quantification of these through slack measures has not been done before. Hopefully this exploratory perspective can help to facilitate further research putting a focus on an often discussed, but not very concrete topic.

2.4. Data Review

Two types of data exist; *primary data*, which is data collected specifically for the specific research project being undertaken; and *secondary data*, which is data that was originally collected for another purpose (Saunders, 2007). The data used for the analysis is collected through *Bloomberg Terminal*, which is a program that enables professionals in finance and other industries to gain access to Bloomberg Professional. Through this real-time data for the global financial markets is available. Despite Bloomberg's clear incentive to deliver the data as unbiased a possible it should still be considered as *secondary data*. The data delivered to Bloomberg does either come directly or indirectly through the different corporations, which even though they are under strong restrictions and observation from the authorities, the media and the public in general may include a marginal bias in their reporting. Nevertheless this type of data collection is considered to be almost completely unbiased.

2.4.1. Sample composition

As has already been mentioned earlier this paper focuses on the strategic abilities for flexibility and efficiency for corporations listed at the Copenhagen Stock Exchange. The exchange, which also trades stock for corporations originally listed in Finland, Sweden, Norway, and Island, separates the different shares into ten different sectors being: Oil & Gas;

Basic Materials; Industry; Consumer goods; Consumer Services; Health Care; Telecommunications; Utilities; Financials; and Technology. Within these groups 174 of the corporations are Danish. The sector separation is far from perfect, but it does however provide the study with a natural way of separating the market nature of the different corporations. A more specific separation could be made, but in order to have a reasonable base for comparison this study does however choose to stick with the already established separation made by the Nasdaq OMX Nordic.

In order for the different corporations to be included in the study certain requirements were established to both the sector and the specific corporation. In relation to the sector it was determined that the sector should consider at least six different corporations. Moreover in order to avoid too big sector specificity it was decided to leave out certain sectors considered to be extensively regulated. In terms of corporation requirement it was decided that the corporation should be significantly exposed to more international markets. Moreover data should be available for the majority of the period. Last but not least it was decided to leave out corporations whose main activities were concentrated on the ownership of other corporations.

Due to the limited number of corporations in some sectors: Oil & Gas; Basic Materials; Telecommunications; Utilities; consumer services; and Technology will not be considered in the analysis. The financial sector was left out both due to the strong regulations of the sector, but also due to the limited operations on international markets for a majority of the actors. Most of the consumer services corporations are moreover highly based on services offered to the Danish market.

This leaves the analysis with the three remaining sectors: industry, consumer goods, and health care. Within these sectors a number of the different corporations will also be excluded. This is primarily due to limited data available, but also as a result of some corporations exclusively having holding activities. A list of these can be found in appendix 4. This may seem like a huge number of exclusions, but additional corporations could however have been left out as well. A number of the different corporations in the sample is relatively young corporations, which is primarily research based. This means that they will certainly present some results that are significantly different to the more established corporations, but at the same time this does not make them less relevant. Some studies may also have excluded corporations with significantly below average results, which has certainly also been an option in this study.

E.g. the corporation, Affitech, which has subsequently to the period analysed gone into liquidation. However for objectivity reasons it has been decided to include both below and above average performers. Thus, a sample of 33 corporations will be included in the analysis. These 33 corporations in the sample will be analysed throughout the period 2004Q1 to 2012Q1 using quarterly data. The decision of using quarterly data rather than the easier and more accessible yearly data should be found in the overall objective of the paper, i.e. to capture the efficiency and flexibility of corporations. Ultimately, this leaves the study with 1089 (33 x 33) possible observations that can be used for the regression analysis presented further below.

.

3. Literature Review

The concept of flexibility or dynamics within strategy has been widely discussed in a range of different studies. Below is some of the most prominent presented both those that directly make use of the term dynamic capabilities and those that use different terminations or address the issue of flexibility in a different way. What is common for most of the studies presented below is that they are all to a high extent build on a foundation of the resource based view (RBV) (e.g. Wernerfelt, 1984; Barney, 1991). Nevertheless, as dynamic capabilities are concerned with how to respond towards changes in the markets, understanding the market-based view (MBV) developed most famously by Michael Porter (1980) is a necessity in this process.

3.1. The Resource-based View

The concept and the importance of firm resources have been highly debated throughout the history of strategic management. Most famously this was started by Penrose (1959) and was further developed by Lippman and Rumelt (1982) and Wernerfelt (1984). However Jay Barney presented the most famous scholar within the Resource-based view in his article from 1991, *Firm Resources and Sustained Competitive Advantage*.

These authors argued that what determines the profitability of the firm were not so much the specific market conditions faced, but rather the internal resources hold by the firm. In order to define firm resources Barney uses the definition by Daft (1983), which says:

"All assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness."

Barney's theory builds on two overall assumptions that firms are heterogonous with respect to resources, and that these resources are not perfectly mobile, which means that heterogeneity can be long lasting. He moreover separates between a competitive advantage and a

sustainable competitive advantage by focussing on the ability or inability of competitors to duplicate it. In order to be a potential sustainable competitive advantage a resource must fulfil certain criteria: First, it must be valuable; second, it must be rare; third, it must be imperfectly imitable; and fourth, it must be non-substitutable. This is known as the VRIN-framework for sustainable competitive advantages.

A resource is said to be *valuable* if it helps the firm to exploit opportunities or eliminate threats. The definition of exactly how *rare* a resource must be in order to be considered, as a source of a sustainable competitive advantage is blurred, but the availability must however be inferior to alternative resources. These two criteria can be seen as a way of describing the basis for a first-mover advantage. However in order for the advantage to be sustainable it must be un-acquirable for competitors. A resource is considered as *imperfectly imitable* through one or a combination of three reasons. These are: i) the ability of a firm to obtain a resource is due to unique historical conditions; ii) the ability is causally ambiguous; or iii) the resource generating the firm's advantage is social complex (Dierickx & Cool, 1989). In relation to the last criteria competitors should neither be able to substitute the resource for something else. Hence, the resource should be *non-substitutable*.

A sustainable competitive advantage does however not provide any guarantee for the behaviour of markets. As markets change the competitive advantage attained by the specific resource may diminish. Hence, in order explain how firms stay competitive even when markets are changing new theory will be needed. In the subsequent section the most famous scholars within this area will be presented.

3.2. Dynamic Capabilities

Teece et al. (1997) were the first to introduce the framework of dynamic capabilities, in their article *Dynamic Capabilities and Strategic Management*. Their framework builds partly on the RBV, but does moreover include the MBV (Porter, 1980), as well as the theory of strategic conflict, which is based on a game theoretic approach (Shapiro, 1989). Teece et al. argue that these three points of departure cannot help to explain the long-term success of global scale companies. Shortly, the winners in the global marketplace are argued to be:

"Firms that can demonstrate timely responsiveness and rapid and flexible product innovation, coupled with the management capability to effectively coordinate and redeploy internal and external competencies" (Teece et al., 1997: 515)

The term concept of dynamic capabilities is used in order to describe those abilities that enable the firms to ultimately end up as winners. When splitting up the concept the words can be defined accordingly (Teece et al., 1997: 515):

"'Dynamic' refers to the capacity to renew competences so as to achieve congruence with the changing business environment"

"'Capabilities' emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment"

These dynamic capabilities are defined through three different categories: processes, positions and paths. The dynamic capability can be present either through one these categories or through a combination.

Processes can then again be separated into three different types being: coordination/integration; learning; and reconfiguration and transformation. Coordination/integration processes cannot by itself be considered as a dynamic capability due to its static nature, but instead it can serve as a support function for processes that might create dynamic capabilities. The second process type, learning, is carried out through repetition and experimentation tasks, eventually leading to higher efficiency. The learning process happens through both the organization and the individual. Based upon these characteristics learning should be considered as a dynamic process. The last process is reconfiguration and transformation. This is related to the ability to reconfigure the firm's asset structure and to undertake the necessary internal and external transformation.

The second main point within the original dynamic capabilities approach is positions. This is related to the specialized positions hold by the firm. More specifically this can be summarized as: technological assets; complementary assets; financial assets; reputational assets; structural assets; institutional assets; market (structure) assets; and organizational bound-

aries. Hence, this definition of assets includes not only tangibles, but also rather untraditional intangibles. This is done in order to state the importance of recognizing the challenges, but also the possibilities in handling all asset types efficiently.

The third and last category is paths, which again can be separated into two distinct categories being; path dependencies; and technological opportunities. Path dependency is a function of the firms current position. An established firm might find it hard to 'reinvent' them compared to relative newcomers. On the other hand former decision may also serve as a base for reinventing. Summing up, the dynamic capabilities are resident in the firm processes. These processes are however shaped by the firm's positions, the range of asset types, but also by the paths of the firm.

Eisenhardt and Martin (2000) have also made an attempt to explain the true nature of dynamic capabilities. Their approach is build on that of Teece et al. (1997), but is even more grounded in RBV, and especially Barney's VRIN-framework (1991). Their definition of the concept is comparable to 'combinative capabilities' (Kogut and Zander, 1992) and 'architectural competence' (Henderson and Cockburn, 1994). Eisenhardt and Martin (2000) highlight four main observations concerning dynamic capabilities: i) dynamic capabilities consists of specific strategic and organizational processes that create value for firms within dynamic markets by manipulating resources into new value-creating strategies; ii) dynamic capabilities have greater equifinality, homogeneity, and substitutability across firms than traditional RBV thinking implies; iii) Effective patterns of dynamic capabilities vary with market dynamism; and iv) well known learning mechanism guide the evolution of dynamic capabilities and underlie path dependence.

	Traditional view of dynamic capabilities	Reconceptualization of dynamic capabilities
Definition	Routines to learn routines	Specific organizational and strategic processes (e.g., product innovation, strategic decision making, alliancing) by which managers alter their resource base
Heterogeneity	Idiosyncratic (i.e., firm specific)	Commonalities (i.e., best practice) with some idiosyncratic details
Pattern	Detailed, analytic routines	Depending on market dynamism, ranging from detailed, analytic routines to simple, experiential, ones
Outcome	Predictable	Depending on market dynamism, predictable or unpredictable
Competitive Advantage	Sustained competitive advantage from VRIN dynamic capabilities	Competitive advantage from valuable, somewhat rare, equifinal, substitutable, and fungible dynamic capabilities
Evolution	Unique path	Unique path shaped by learning mechanisms such as practice, codification, mistakes, and pacing

Table 1: Contrasting conceptions of dynamic capabilities. Source: Eisenhardt & Martin (2000)

Table 1 above summarises the difference between the traditional dynamic capabilities view as presented by Teece et al. (1997) compared to the dynamic capabilities view by Eisenhardt and Martin.

Starting out with the first point, definition, dynamic capabilities are to a much higher extent seen as a specific strategy process intended to the redistribution of assets rather than a set of learning routines. Secondly, the heterogeneity of dynamic capabilities is questioned describing them as generally common features, which is however individually unique when going into detail. This means that dynamic capabilities to some extent can be build by adopting some sort of 'best practice'. Thirdly, dynamic capabilities vary in response to the dynamics of the market conditions, which they are facing. This means that dynamic capabilities will often be highly routine-based when applied in high-velocity markets, as managers will be forced to focus on issues broadly important. When markets are less volatile there will however be potential for building more detailed dynamic capabilities. The fourth point concerns the evolution of dynamic capabilities. This is said to be led by a range of different variables, such as learning experiences, mistakes, the codification of knowledge, and the pace of the firm's experiences. This last variable is to a high extent influenced by the nature of the market in which the firm is operating.

Summing up, where the dynamic capabilities of Eisenhardt and Martin (2000) differ from those of Teece et al. (1997) is when tested towards the VRIN-framework. Both studies consider dynamic capabilities as being valuable and rare, but Eisenhardt and Martin (2000) do however not consider them as being imperfectly imitable or non-substitutable. Thus, instead of being considered as a traditional source of competitive advantage from a RBV their contribution is through their ability to alter the resource base: create, integrate, recombine, and release resources.

Teece et al.'s (1997) and Eisenhardt and Martin's (2000) work were followed by another article by Teece (2007), which helped to refine the concept even further. In this study Teece builds a microfoundational level for understanding dynamic capabilities meaning that the focus instead were on understanding the behavioural and social conditions for what determines a dynamic capability. The overall headline of Teece's 2007 article is however the disaggregation of dynamic capabilities into the three branches: sensing; seizing; and reconfiguration. These three branches/subgroups will be thoroughly explained below:

Sensing and shaping new opportunities is related to the processes of scanning, creation, learning, and interpretive activity. To identify and shape opportunities, firms must constantly scan, search, and explore across technologies and markets (March and Simon, 1958; Nelson and Winter 1982). These processes are not only about investing in technologies, but equally about understanding latent demands as well as the structural evolution of industries and markets, especially the likely responses from suppliers and customers. At a microfoundational level the ability to recognize, sense, and shape opportunities are associated with both internal and external factors. Moreover it also considers both individual and collective abilities. Figure 1 in Appendix 1 summarizes microfoundational elements for sensing dynamic capabilities.

When a new opportunity is sensed, technologically or within the market, it must be addressed through new products, processes, or services. In such situations firms do often hold several options for exploring this opportunity. A firm may however be limited or path dependant by their position in the market (Mitchell, 1991). Hence, the option should be considered in relation to the firm's relative position in the market. Additionally the investment must be accompanied with an organizational response so that the business model is in line with the commercialization strategy and investment priorities of the firm. At a microfoundational level seizing is about being able to structure or restructure the business model and deciding the

boundaries of the firm, deciding which functions should be carried out internally as well as externally (Coase, 1931; Williamsson, 1986). What Teece (2007) considers to be key strategic elements in order to capture the value from innovation is rather the ability to identify and control the 'bottleneck assets' or 'choke points' in the value chain from invention to market (Teece, 1986, 2006). Moreover the platform for doing so should be considered. In Figure 2 in Appendix 1 the microfoundations for seizing opportunities are illustrated.

The last element of dynamic capabilities according to Teece (2007) is reconfiguration. The ability to reconfigure and recombine current assets and organizational structures when the firm is experiencing growth and when markets and technologies change is highly critical for sustained profitable growth. At the same time firms must manage the threats that arise when experiencing growth. At a microfoundational level Teece (2007) again points out the importance of decentralized decision-making. A second important aspect is the one of managing co-specialization. This element is related to the one of managing complements and platforms, both in terms of the creation and reconfiguration of these. Thirdly, firms will have to manage their learning-, knowledge management- and corporate governance processes carefully. Good incentive design, the creation of learning, knowledge sharing, and knowledge integration processes are critical for the overall business performance in regard to this process (Nonaka and Takeuchi, 1995; Chesbrough, 2003). Again a summary of the reconfiguration and realignment processes can be seen in figure 3 in appendix 1.

All the functions described above relates to the effective management of tangible and especially intangible assets. Sensing, seizing and reconfiguration skills are crucial within this process. The dynamic capabilities framework recognizes that firms are shaped by the past, but not necessarily trapped. Teece (2007) concludes by describing the difference between resources and dynamic capabilities through the static nature of resources. Dynamic capabilities is a resource, but with the characteristic of being able to transform over time or being able to transform other resources.

3.3. Related Scholars

In addition to Teece et al. (1997), Eisenhardt and Martin (2000), and Teece (2007) there is an additional range of studies, which is equally relevant. Adner and Helfat (2003) refined the concept by focussing almost exclusively on the role of managerial decision-making and

corporate strategy. The different types of variance in business performance are broken down into a number of variables being: the rate of return of a business, industry effects, corporate effects, year effects, business effects (from company operations contained within a particular industry), industry-year interaction effects, random disturbances and the time-varying corporate effect from a specific type of managerial decision, in order to test for the significance of this last variable.

Grant (1996) gives another view on how to be successful in dynamic-competitive environments again adopting a focus on internal resources and capabilities. More specifically his focus is on the resource knowledge and the organizational capabilities of integrating this. Grant (1996) advocates that resource and capability-based advantages derives from the superior access to and integration of specialized knowledge. Grant (1996) sees the individual's ability to obtain knowledge as limited due to cognitive limits. The firm is therefore seen as an institution or hierarchy for knowledge integration. Higher-level capabilities are crucial, but do however require the integration of individual knowledge, which as mentioned earlier, is cognitively limited. This integration process can be split into three subgroups: i) efficiency of integration; ii) scope of integration; and iii) flexibility of integration. Efficiency of integration is the determinant for how productive firms are in utilizing their knowledge stored within the individual members of the organization. One determinant for efficiency is the general level of common knowledge within the organization, which serves as a prerequisite for specialized knowledge (Demsetz, 1991). A second variable for the efficiency of integration is the frequency and variability of task performance. The last determinant of efficiency is structure. When the scope of knowledge integrated in a capability increases so do the difficulties faced by competitors trying to replicate the capability, due to increased 'causal ambiguity' (Dierickx and Cool, 1989). Flexibility of integration refers to the ability to constantly developing and reconfiguring the capabilities necessary for integrating knowledge.

Helfat and Peteraf (2003) introduce the view of the capability lifecycle, not to be confused with the product lifecycle (Kotler, 1980; Grant, 2002; Klepper, 1997). As shown below in figure 2 (left side panel) the life of the capability starts out in the founding stage, followed by a developmental stage and ultimately reaching maturity. Up until maturity the capability is constantly changing, a change, that is dependent on the steps earlier in the process. In the founding and developmental process the capability is not efficient, but as routines are build

the capability reaches maturity and reaches its maximum level of efficiency. External events may however change this, leading to a transformation of the capability into ultimate decline, unchanged efficiency or even increased efficiency. The change may however also appear as a consequence of internal changes. Helfat and Peteraf (2003) describe six different paths that a capability may follow when the transformation occurs. These can be shown in figure 2 (right side panel), namely: retirement; retrenchment; replication; renewal; redeployment; or recombination.

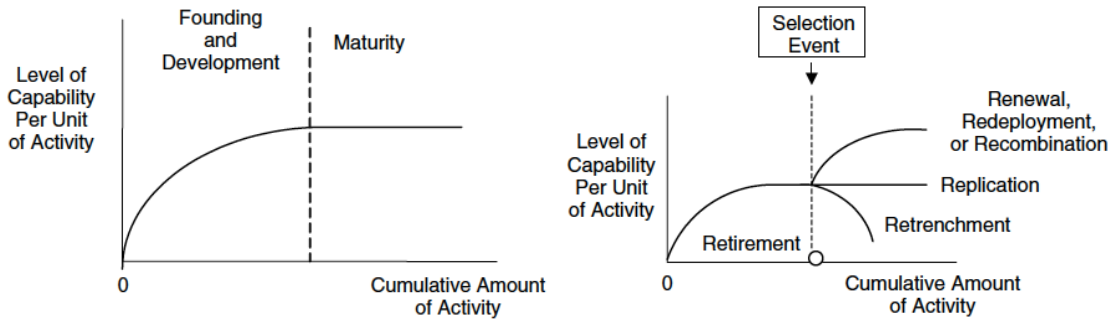

Figure 2: Capability lifecycle stages. Source: Helfat and Peteraf (2003)

The study is not as such a study of dynamic capabilities, but rather an analysis of the possible development processes for capabilities in general. A capability may however be dynamic as it is able to transform over time or if it enables other capabilities to undertake a successful transformation.

Bettis and Hitt (1995) give an even more specific contribution than Grant (1996) and Helfat and Peteraf (2003) by focussing exclusively on the importance of technology. More specifically they focus on those specific factors influencing the 'competitive landscape' and the subsequent challenges. The four factors said to influence the market are: i) the increasing rate of technological change and diffusion; ii) the information age; iii) increasing knowledge intensity; and iv) the emergence of positive feedback industry.

From a strategic management point of view this means that firms are facing a number of new challenges. First they will be facing increased risk and uncertainty, which will affect their ability to forecast, thereby diminishing the will to invest due to a higher degree of uncertainty. A second challenge is the ambiguity of industry, meaning an inability to define industry and market borders. This consequently make it hard to define markets, competitors etc. Thirdly,

the changes have affected the need for a new managerial mindset based primarily on a single principle: flexibility in strategy and organization. Fourth and last, the increased information has increased the access to different services and products. Consequently, transactions costs has been decreased and thereby also the incentive to fancy a hierarchical relative to a market or hybrid-type of organization (Williamsson, 1985, 1991). Consequently, Bettis and Hitt (1995) emphasize the need for what they determines as 'strategic response capabilities'. A successful strategic response capability is characterized by rapidly: i) sensing change in the environment; ii) conceptualize a response for that change; and iii) reconfigure resources to execute the response.

Andersen et al. (2007) makes an examination on firms' attitudes towards risk and how this influences their ability to make strategic decisions. More specifically the paper seeks to explain the concept of Bowman's paradox; a concept referring to the fact that firms with a higher degree of return on equity (ROE) do equally hold a lower degree of volatility in ROE (Bowman, 1980). This atypical risk-return relationship can be explained through a number of theories ranging from those of contingencies over strategic conduct to statistical artefacts. A complete overview of the different scholars within these three areas is shown in appendix 2. Andersen et al.'s model (2007) argues that high performance with low variability can be obtained through superior strategic conduct. More specifically the model builds on the concept of long-time strategic fit (e.g. Andrews, 1971; Hofer and Schendel, 1978; Fiegenbaum, Hart, and Schendel, 1996; Siggelkow, 2001). When markets change there will be a need to realign internally in order to secure an optimal fit. Likewise, the more the firm strategy deviates from the optimal fit relative to the specific market conditions, the more severe the performance penalty. In order to achieve this fit it is necessary to hold a range of capabilities for strategic responsiveness. Andersen et al. (2007) proposes a model to tests the impact of strategic conduct leading to the following predictions: i) that the risk-return correlation will be lower for industries with a higher variation in firm performance as measured by standard deviation in average firm performance; ii) that the risk-return correlation will be higher in industries with high average performance; and iii) that the average industry performance and the variability in average firm performance will be negatively correlated. Through empirical testing it is shown that strategic conduct can indeed serve as a plausible explanation for Bowman's risk-return paradox.

In another study Andersen and Nielsen (2009) try to establish the relationship in a model of adaptive strategy making. The model assumes that firms' ability to adapt to changes in their surrounding markets is highly influenced by the firms' ability to distribute autonomy towards managers at lower levels within the organization. At the same time they do however also assume that traditional views of management focussing on a top down approach can be effective for the adaptive behaviour of the firm as well as the firm's general performance. In other words Andersen and Nielsen (2009) are trying to establish an understanding of the determinants for adaptive behaviour or adaptive capability that can ultimately lead to superior firm performance. Andersen and Nielsen (2009) finds that: i) autonomy, allowing lower level responsive actions monitored by middle managers without top management approval, is positively related to adaptive behaviour; ii) participation of middle managers in strategic decisions is positively related to adaptive behaviour; iii) adaptive behaviour is positively related to performance; iv) strategic planning is positively related to performance; and v) the positive relationship between adaptive behaviour and performance is partially mediated by strategic planning. More specifically the model explains that distributing autonomy to lower level decision makers helps to underpin the emergence of responsive initiatives that can ultimately lead into viable business opportunities or new strategic options. Thus, the engagement of middle managers can serve as a basic mechanism that drives dynamic capabilities and strategic renewal (Teece, 2007; Helfat and Peteraf, 2003).

The idea of central planning combined with a decentralized organizational focus is further developed in Andersen's study from 2010. This time with an extensive focus on firms' strategic risk management approach. Andersen argues that risk management should not be treated in isolated functions, but rather a holistic perspective towards risk management should be adopted. In figure 3 below Andersen argues that the choice of organizing is dependent on the interrelatedness of risk types as well as the degree of unknown/uncertainties.

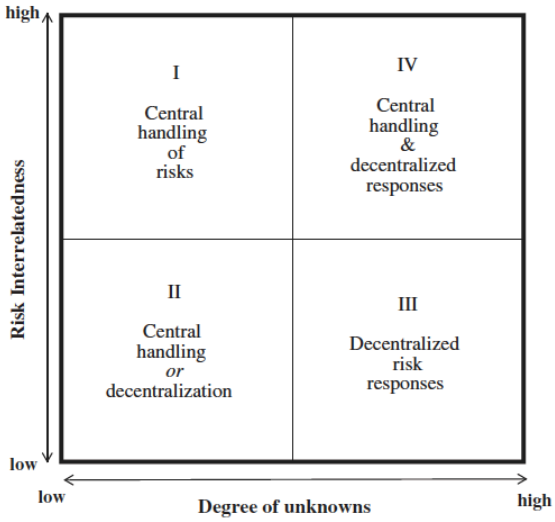

Figure 3: Risk management organization by unknowns and interrelatedness. Source: Andersen (2010)

By adopting such an approach strategic initiatives can be instigated at lower levels in the organization, with top managers being responsible for shaping the organization that enables this (Burgelman, 1996).

3.4. Summing up – Strategic Abilities for Flexibility and Efficiency

Going through the different scholars described above different terms for efficiency and flexibility are used repeatedly describing how to achieve long-term success. Nevertheless when taking a closer look into the different studies most of these do actually agree on the main areas to what is important in achieving flexibility and efficiency simultaneously.

The headlines used for describing the necessary abilities come close to those used by Bettis and Hitt (1995) for what they call *strategic response capabilities*, and Teece's (2007) *dynamic capabilities*. In this study they will however be determined by the three main areas described below:

- ***Market Sensing:*** *The abilities of sensing the market*
- ***Problem solving:*** *The abilities to develop solutions*
- ***Implementation Strength:*** *The abilities to implement solutions*

These three concepts are only the headlines each containing three abilities. Some will be highly interrelated and it will be possible to discuss whether one ability should have been placed under one headline rather than another. At the same time it can argued that the abilities listed are not sufficient. Nevertheless, in order to facilitate a structured and efficient analysis as well as taking the overall limitations of the paper into consideration this model is chosen.

In relation to sensing the market, the necessity of organisational members being close the market place has been emphasized numerous times (Teece et al., 1997; Bettis and Hitt, 1995; Andersen and Nielsen, 2009; Andersen, 2010). Consistent customer interaction and alternative market actor interactions is however not sufficient. Moreover, the individuals responsible for these contacts must also be given a certain level of autonomy. Additionally there is a clear demand for firms to constantly scan, search and explore across technologies and industries (March and Simon, 1958; Nelson and Winther, 1982). The concreteness of these tasks is however not very high. Thus, in order to overcome this barrier firms should instead seek the market for best practice solutions both through benchmarking towards competitors within the industry, but also through general industry standards (Eisenhardt and Martin, 2000). A last issue for successful market sensing is the ability to integrate knowledge (Grant, 1996). Frequency and structured processed are mentioned as ways for better integrating the knowledge, but in order to effectively sensing the meaning of new knowledge a high general knowledge level must be ensured for those people intended to adopt the knowledge (Demsetz, 1991).

In order for a firm to be able to respond quickly to market changes firms must be able to develop the solution required by the market. In this regard technological assets are required, but the existing technological assets should be complemented by constant investments in R&D activities (Teece, 2007). These two elements taken together can be termed as the overall technological strength. Technological assets are however not the sole determinant, the remaining assets or positions are equally critical (Teece et al., 1997). Still in order for these to be valuable in the development of new solutions these should be applicable in multiple uses (Hamel and Pralahad, 1990; Helfat and Peteraf; 2003). If the assets hold this multi-applicability the option to split and recombine the assets will occur (Kogut and Zander, 1992; Henderson and Cockburn, 1994; Eisenhardt and Martin, 2000). A last element that influences the firms' ability to develop solutions is the firms' overall position in the market (Mitchell,

1991; Teece, 2007). If a firm does not hold the ability to carefully consider the solution developed in relation to the possibilities and limitations of their market position the solution may not be effectively exploited.

When a solution is developed the firm should be able to effectively implement it at the market – implementation strength is required. First, the firm must have a clear strategy for how to carry out the implementation of the specific solution. As described in the ability to sense markets firms should have decentralized autonomy in the decision making process, but at the same time there should be a clear strategy in order to ensure that the organization is working towards the same overall target (Adner and Helfat, 2003; Andersen, 2007; Andersen and Nielsen, 2009; and Andersen, 2010). Only with efficient organizational routines in relation to the implementation process adaptive efficiency can be reached. Another element of implementation strength is the firm's ability to efficiently allocate their resources. This goes especially in terms of technological assets, but also at a general level (Teece et al., 1997). This ability is also in the line with the aspect described in those abilities related to problem solving abilities, namely resource applicability. If a firm is too committed to a specific technology that does not hold the a multiple purpose applicability it may be almost impossible to implement new solutions without taking too big of an economic profit loss. Hence, asset investments should ideally be spread to a certain extent or being multiple applicable in order to ensure a high level of flexibility. A last and highly crucial element of implementation strength is financial strength. In order to execute response with short notice firms must have free financial resources available (Bettis and Hitt, 1995). The financial strength is hence not only determined by the ability to acquire the assets, positions etc. needed, but also the pace of which this is done.

Going through the three main areas and their underlying subareas a three-times-three model can now be built. The model is shown in figure 4 below:

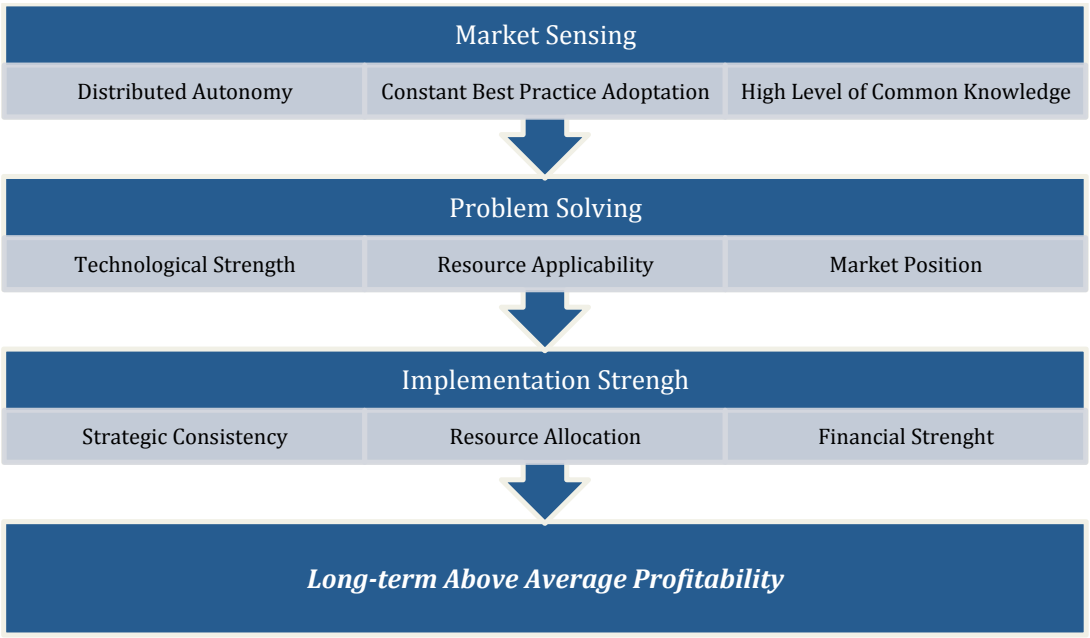

Figure 4: 3-times-3 Ability Matrix for Strategic Flexibility and Efficiency

3.5. Introducing slack

As we have seen in the different studies above the different concepts related to flexibility and efficiency are often highly abstract and concerned with a broad range of management areas. This naturally implies that the measurability of these also is relatively low. There have however been some scholars, who have tried to quantify the concept (Andersen et al., 2007; Andersen & Nielsen, 2009; Andersen, 2010).

A concept that can help to quantify the different abilities is the concept of slack. Many of the early studies about slack are related to James March, who used the following definition:

"Organizational slack is that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiative changes in strategy with respect to the external environment" (Cyert & March, 1963).

From this definition it is clear that slack is not the same as abilities for flexibility and efficiency, but to a certain extent it does however serve the same purpose, namely to successfully adapt to internal or external pressures. Thus, organizational slack can be seen as an indicator for the existence of these abilities.

Bourgeois (1981) takes a closer look at the concepts of organizational slack in order to make an operational use of the concept. According to Bourgeois (1981) slack serves a number of different means. First, slack can be used to solve internal issues or more specifically as an operational or workflow variable. Bourgeois mentions four different instances where internal slack can be useful: i) as an inducement for organizational actors to remain within the system (Barnard, 1937; March & Simon, 1958; Cyert & March, 1963); ii) as a resource for conflict resolution (Pondy, 1967; Cyert & March, 1963); iii) as a buffering mechanism in the workflow process (Thompson, 1967; Pondy, 1967; Galbraith, 1973); or iv) as a facilitator of certain types of strategic or creative behaviour within the organization.

Nohria and Gulati's (1996) determine slack as the excess pool of resources that is of the minimum necessary to produce a given level of organizational output. Their study focuses on the relationship between slack and innovation and essentially they argue that the relationship is neither exclusively positive nor negative, but rather curvilinear or inverse U-shaped. By doing so they consider both the positive attitude towards slack presented by Cyert & March (1963), while at the same time considering the more opposing arguments from scholars such as Williamsson (1963; 1964), Jensen (1986; 1993) and Liebenstein (1969) who would argue that slack diminishes incentives. More specifically the influence of slack is found to be positive up until a certain point where slack reaches a level that influences the discipline of the organization.

The optimal slack levels may however differ between markets. Immature markets may allow for a higher degree of slack due to the increased number of investment possibilities relative to the markets that are fully mature. In the same way it should be argued that corporations in markets, which are more volatile, should aim for a higher degree of slack.

Greenley and Oktemgil (1998) offer a third view on slack as they focus on the effect on a corporations' strategic flexibility. The concept of strategic flexibility is closely related to the

concept of strategic adaptation presented by Chakravarthy (1982, 1986). Strategic flexibility separates slack into two separate dimensions. The first being a temporal dimension that consists of an *ex ante* and an *ex post* mode and the second being an intentional dimension, which consists of an offensive mode, creating and seizing an initiative, and a defensive mode, guarding against competitive moves and correcting eventual mistakes (Evans, 1991). Combining these two dimensions they can be illustrated in the two-by-two matrix seen in Appendix 3.

These different modes do each represent an aspect of how to achieve maximum strategic flexibility. In the *ex ante / offensive mode* it is suggested that slack allows the firm to hold a range of strategic options that can be exercised as future options occur (Bowman & Hurry, 1993; Fox & Marcus, 1992). In the *ex ante / defensive mode* slack resources are hold as a save guard to defend against certain risk factors that might arise from operating in the market, e.g. a new business venture (1991). Slack resources will hence be used as an insurance against possible future losses. The *ex post / offensive mode* is when non-predicted opportunities occurs and the existence of slack allows the firm to immediately take advantage of these opportunities. At last the *ex post / defensive mode* is concerned with learning from those mistakes that already have occurred.

Andersen (2009) also touches upon slack by focussing on how risk management improves the performance of companies and how financial slack and innovation helps to improve this effect. Moreover Andersen (2009) introduces the idea of a real option logic which is also to some extent in line with the idea of strategic flexibility introduced by Greenley and Oktemgil (1998). Andersen (2009) finds a strong relation between risk management effectiveness and overall performance. Moreover it is found that investment in innovation increases the risk management effectiveness. In terms of financial slack Andersen (2009) uses financial leverage as a variable. It is found that the correlation between financial leverage and risk management effectiveness is negative and hence it can be concluded that the overall performance is negatively related to financial leverage.

The different scholars above show that slack has been used as an indicator or an explanatory variable for flexibility in strategy making and company performance in general. Hence the idea about using slack as a measure for success is not new and especially the study from Greenley and Oktemgil (1998) includes some of the same parts as this study. Nevertheless

this study differs by using slack as an indicator for the different strategic abilities for flexibility and efficiency that enables corporations to achieve long-term competitiveness. Later on in the paper the different slack measures will be linked directly to the different abilities allowing us to test for the existence of these.

4. Theoretical Framework

This chapter is concerned with building the theoretical framework needed in order to test whether or not the measurable abilities identified in the '3-times-3 ability matrix' have a significant impact on the long-term competitiveness of corporations. This will be represented by three different performance indicators, which will be presented in this chapter together with the reason behind the usage of these. Before these are presented the abilities from the '3-times-3 matrix' above will however be linked with the different slack measures. The last part of this chapter is concerned with statistical theory needed in order to undertake the analysis.

4.1. Variable Determination – Independent Variables

This part of the paper is concerned with attaching the specific slack measures (e.g. Bourgeois, 1981; Nohria & Gulati, 1996; Greenley & Oktemil, 1998) to the different abilities presented in the literature review. The attachment process will follow the structure of the '3-times-3 ability matrix'. Hence, first the different abilities for *market sensing* will be treated, followed by the *problem solving* and last the *implementation strength* abilities.

4.1.1. Market sensing

Distributed autonomy is concerned with the abilities for mid-management partly to take decisions, but also initiate different initiatives. The slack ratio representing this ability should be related to the liquidity available in the organization and especially in those parts of the organisation, which is considered to be close to the market. One ratio which would help to identify these resources is the accounting measure 'SG&A ratio'.

This ratio describes the relationship between sales-, general-, and adminstrative costs relative to total sales. Traditionally a higher 'SG&A ratio' would be associated with inefficiency as have been argued earlier about other slack measures (Williamsson, 1963, 1964; Jensen 1986, 1993; Liebenstein, 1969). This is however opposite to the findings by Bourgeouis

(1981) who predicts that a positive effect from an increase in the 'working capital to sales ratio', which can be related to the 'SG&A ratio'.

As a mediator new studies suggest that the relationship is not necessarily straight forward, but rather depend on the current SG&A level of the corporation (Baumgarten et al., 2010). According to these predictions corporations that are already cost efficient may experience a substantial effect from increases in SG&A intended to increase earnings whereas those with an already high level may not be in control of their costs (Anderson, 2007; Baumgarten et al., 2010).

This mediating approach is adopted in this paper. More specifically this means that the relationship between the 'SG&A ratio' and the respective performance indicators is expected to be positive correlated up until at certain level where the relationship becomes negative. This curvilinear relationship poses a challenge to the method of analysis, but there is however techniques to get around this, which will explained together with the statistical considerations below.

Constant best practice adoption is a slightly more difficult ability to measure. The ability is concerned with a certain way of approaching new knowledge and new processes. This is to such an extent that it can be related to resources available in the organization. However the reason for choosing to focus on best practice adaptation rather than completely new processes is that the lower costs and lower risk associated with these. More precisely the transactions costs related to already established processes are substantially lower than new processes (Williamsson, 1986). Because no specific measures are available this ability will however not be included in the regression analysis further below.

High level of common knowledge is hard to measure as it may be affected by several different variables. However according to traditional economic thinking it would however be argued that those employees, who are paid the most are also the best qualified. Such an assumption would suggest that the level of common knowledge could be measures by the ratio 'total personal expenses to number of employees'. Despite this argument there is however numerous aspects that should also be considered and which cannot be monitored in monetary terms. Moreover mobility of employees becomes a topic and would most likely differ be-

tween sectors and corporations. Hence, despite the existence of the measure this will not be used in the analysis.

4.1.2. Problem solving

Technological strength can be associated to the 'R&D to sales ratio' seen in Chakravarthy (1986). The ratio is quite simple, but does nevertheless give a close to optimal indication of the focus put on technology development for the specific corporation. The measure is however limited to a certain extent being a relative measure. Thus it might also be helpful to look at the absolute R&D expenses rather than comparing towards sales. The reason for this is that there might only be a certain number of positive NPV projects available for firms in a specific industry. Hence the ratio would be substantially higher for low sales corporations relative to high sales corporations. In order to emphasise the relative focus put on the area, but also to keep the analysis within a certain scope this study does however chose to limited the analysis to focussing exclusively at the ratio.

Resource applicability refers to the ability to explore different resources around in the organization. The ability have been significantly touched upon in different studies, but it has however not been directly correlated to a specific measure in management or strategy scholars. There is however a specific accounting measure that enables us to measure some of the different firms resource applicability. This measure is known as the 'quick ratio' or the 'acid test' (Tracy, 2004). This ratio measures the corporations' most liquid assets relative to the current liabilities of the firm. The equation for how to measure the 'quick ratio' can be seen below:

$$Quick\ ratio = \frac{Cash\ and\ cash\ equivalent + marketable\ sec. + accounts\ receivable}{Current\ liabilities}$$

Equation 1: Quick ratio

The ratio does unfortunately not measure those assets that do not hold the same degree of liquidity as the posts in the numerator above, but which are still multi applicable. Moreover the measure has not directly been used in studies involving slack in relation to strategic con-

siderations. Nevertheless, the fact that of the measure already being established as well as its ability to capture *resource applicability* makes a good argument for using the measure. This study does therefore assume that a high 'quick ratio' serves as an indicator for a high degree of *resource applicability*.

Market position of the specific corporation can quite easily be determined by using the ratio 'sales to total industry sales'. This ratio will define the market share of the corporation in the specific industry. However market position in terms of flexibility and efficiency is not only a matter of market share, but also a flair for making investments and other strategic decisions based on the position hold in the market. This could be measured through a ratio based on the change in investments relative to total assets. A high ratio would indicate carelessness towards making investments whereas a low ratio would indicate an unwillingness to take risk and hence future growth will be jeopardized. The measure is however not an established measure and has neither been tested in regards in this type of relationship before. For these reasons it will be left out of the study.

4.1.3. Implementation strength

Strategic consistency is a hard to determine variable. The ability to work in a consistent strategic manor is important in order to carry out initiatives in a fast and efficient way, but it is nevertheless not expected to be identifiable in any numerical way. It may be argued that the general stability in performance can serve as a variable for consistency, but this is obviously also due to a range of other variables. Consequently, this study does not provide a specific slack variable for measuring strategic consistency.

Resource allocation is concerned with the ability to use the developed solution in different manors in order to maximize the potential of the specific improvement. Throughout time there has been several different scholars measuring the diversification of firms in order to determine an optimal level. The focus has been on both unrelated- and related diversified firms. Unrelated diversification is a result of the advantages with risk pooling and also the pooling of different administrative activities leading to economies of scale (Chandler, 1962; 1977). Related diversification is more often related to the marketing aspects of the products and mar-

kets or from a technological point of view. Throughout the last decades there has generally been an understanding that unrelated diversification is not the most profitable way of organizing (Rumelt, 1974; 1982). In his study from 1982 Richard P. Rumelt argues that those corporations being related constrained, simplified meaning that a majority of the corporation's revenue comes from somehow related businesses. These findings are completely in line with our argument that resource allocation as a crucial ability for flexibility and efficiency. Unfortunately, measuring the diversification of corporation is a quite complex procedure and is unfortunately exceeding the limitations of this paper.

Financial strength is not the most concrete measure as it can be related to several financial measures that may imply strong a strong financial backing. Some of these have already been introduced in relation to some of the other abilities. More specifically those measures influencing the day-to-day operations have been mentioned. Considering the most significant degree of financial strength should however be with the financial foundation of the firm. Hence, *financial strength* will be measured by the slack measure 'debt to equity'. This measure was proved to have a significant positive influence on strategic flexibility according to Greenley and Oktemgil (1998) as well as Chakravarthy (1986).

4.1.4. Summing up – Measuring and identifying abilities for flexibility and efficiency

Summing up this leaves us with the ability to test for 4 out of 9 abilities. Namely, *distributed autonomy, technological strength, resource applicability,* and *financial strength*. Below the different dependant variables, which will be used to test these measures will be presented as well as the theory behind them.

4.2. Variable Determination – Dependant Variables

This section is concerned with describing and explaining the dependant variables used in order to verify the abilities identified in the '3-times-3 abilities matrix' presented earlier in the end of the literature review. The dependant variables used for the analysis is based on financial theory and is widely used in various financial and accounting material. Therefore in order

to understand these in debt a short presentation of the theory behind is given before presenting the variables and the reasoning behind choosing these for the analysis.

4.2.1. Dependant Variables – Financial Theory

Throughout this part of the analysis the different corporations are examined partly on a range of evaluation criteria used for determining the corporation's ability to hold a competitive advantage, but they are nevertheless also examined on their ability to withhold their competitive advantage. Hence, their abilities to maintain a high degree of flexibility while at the same time upholding a high level of efficiency. Putting it shortly, the study seeks to evaluate the corporations' from a risk-return perspective. The theory used is therefore highly associated with traditional financial valuation techniques.

First and foremost, the method builds on the classic principles of rate of return and standard deviation. The study is however not using a normal determinant of rate of return, but is instead using different measures, which will be presented shortly.

The second part of the analysis is concerned with the spread of the different performance measures, which will be presented further below. Variance and standard deviation are interesting in order to determine whether or not the different corporations have been able to cope with the different challenges that occurs when markets are changing. A low spread may serve as a determinant for the existence of these abilities and is therefore preferred. The standard statistical measures of spread are variance and standard deviation. Within finance variance is the squared deviation of the return (Brealey, Myers & Allen, 2010). When calculating the standard deviation of the same observation this is simply the square root of the variance. The general calculations for variance and standard deviation can be seen below:

$$Variance\ (\tilde{r_p}) = \ (\tilde{r_p} - \ r_p)^2$$

Equation 2: Variance

$$Standard\ deviation\ (\tilde{r_p}) = \sqrt{Variance\ (\tilde{r_p})}$$

Equation 3: Standard Deviation

The combination of return and variance or standard deviation has often been combined in various popular studies especially within finance to determine the *risk-return* relationship. Most essentially were the studies of Harry Markowitz (1952) and subsequently the development of models such as the capital asset pricing model (Sharpe, 1964; Lintner, 1965; Mossin, 1966). A model, which is used for determining the equilibrium expected return of risky assets (Bodie, Kane & Marcus, 2009). This model was followed by a number of other risk adjusted performance measures, which has shown to be easier applicable. Most famously is the Sharpe measure, developed by William F. Sharpe (1966). The Sharpe measure is concerned with measuring the reward to (total) volatility ratio trade-off. Other alternatives for measuring the risk-to-return do moreover exist such as: Treynor's measure (Treynor, 1965); and Jensen's measure/Jensens's alpha (Jensen, 1967, 1969).

The 'risk-return' relationship is of crucial interest of this study, but is however not tested as a specific measure. Instead the analysis will be undertaken based on return and standard deviation separately, which then enable the study to establish not only whether or not the risk-return is affected by the abilities, but also whether this is due to an effect on either the return or the risk.

4.2.2. Dependant Variable Presentation

Now that the method of measuring has been presented the subsequent passage will present the different performance evaluation criteria. These criteria are classic financial or accounting measures, but like the different variables for flexibility and efficiency they are however chosen based on the theoretical foundation presented earlier in the literature review.

The first performance measure chosen is 'return on assets' (ROA), which is as a ratio between the firm's net income and the total value of the firm's assets. The measure is used with the idea of the firm being able to generate income based on its already established resources (Barney, 1991). The ability to manage the different assets within the organization in order to maximize income is moreover mentioned in studies about *dynamic capabilities* (Teece et al., 1997; Teece, 2007). At last the measure holds the obvious advantage of being comparable across different corporations' size and industry due to its relative nature.

When evaluating the different firm's ROA the ratio itself will however not stand-alone. Additionally the standard deviation of the firm's respective ROA will also be analysed. Cor-

porations are obviously always striving to improve their return on assets, but their ability to sustain their ROA on a stable level or systematically improve it at a stable rate can however serve as an indicator for their ability to efficiently cope with the changes in the market.

In addition to ROA another performance indicator that will be used is operating margin, which is based on the corporations operating income relative to its net sales. Operating margin determines a corporations' ability to maximize the outcome of its operations. Again this measure is closely related to the corporation's ability to efficiently use its internal resources (Barney, 1991). Like ROA mentioned above *operating margin* is also a relative measure as it is taken relative to the different corporations sales. The nature of margins may differ substantially between industries and corporations, but this will however efficiently be dealt with when presenting the statistical considerations.

Again the measure is combined with the standard deviation of the measure in order to determine the corporations' ability to cope with changes in the market and control its operations in an efficient way. Being able to consistently improve or maintain a high operating margin may also be an indication of strong leadership and strategic consistency (Adner and Helfat, 2003; Andersen, 2007; Andersen and Nielsen, 2009; and Andersen, 2010).

The third performance measure included in the analysis is revenue growth. With revenue growth we capture the firms' ability to increase their position in the market and capturing market share (Mitchell, 1991; Teece, 2007). The ability is obviously based on the corporation's internal resources, but at the same time it combines it with a more market based approach (Porter, 1980).

Again a complementary performance indicator of 'revenue growth standard deviation' is included in the analysis to determine a corporation's ability to cope with changes in the market. Because of the variable being more affected by market changes this may prove more difficult, but for theoretical as well as consistency reasons this will however be included.

Together these three-times-two variables form a strong base for evaluating the overall performance of the different corporations included in this study. There is however one drawback with two of our three measures, namely operating margin and revenue growth. This is not so much related to the measures themself, but rather to the combination with two of the

four testable abilities for flexibility and efficiency. More specifically because both the 'SG&A ratio' and 'R&D to Sales' are based on sales numbers in the same way as operating margin and revenue growth these will have a relationship that is not ideal for the analysis conducted further on. The performance measures will still be used, but will however not be tested together with the related variables for flexibility and efficiency. This will be further explained when presenting the hypothesis further below.

When deciding upon the variables it may also be argued that other variables should be included, but for different reasons this has not happened. Initially, this study sought to include a variable capturing cash-flow of the different corporations. Especially EBIT and EBITDA were considered. These variables would have proved powerful as they, especially in finance, are often used as a key indicator when determining the value corporations (Brealey, Myers and Allen, 2010). Unfortunately, data was only available to a limited extent on a quarterly basis, which is the time period chosen for this study. Consequently the variable was dropped.

In a similar way it may also be argued that a market-based valuation should have been included, which would have been easily available. This study is however intended to explore whether or not the abilities in the '3-times-3 ability matrix' can explain corporate performance and even though market based valuations may be linked with these abilities they can however also be biased by a number of different factors.

4.3. Statistical considerations

In order to test for the correlation between the abilities for flexibility and efficiency, measured through the slack measures described above, and the long-term performance of the different corporations a multiple linear regression model is adopted. The data is however not a regular multiple regression analysis. As explained earlier this dataset formed for the analysis consists of a number of six different measures from 33 different corporations over the period Q1 2004 to Q1 2012 more specifically an eight-year period using quarterly observations. This means that in total the data set consists of 33 different time periods with 33 different corporations giving a total of 1089 potential observations per variable.

Before the data is analyzed through the panel data regression the different variables correlation coefficients will however be analyzed towards one another.

4.3.1. Correlation Matrix

The correlation matrix is included in the analysis in order to determine those correlations that are not considered in the panel regression analysis. More specifically this means the relationship between the different dependent variables and subsequently the correlation between the different independent variables. The theory is based on some of the formulas, which has already been shown above, namely those of variance and standard deviation. These can then be used to calculate covariance between the different variables, which can be seen below (Bodie, Kane & Marcus, 2009):

$$Cov(x, y) = E[(x - E[x])(y - E[y])]$$

Equation 4: Covariance Formula

When the covariance is determined this can be used to calculate the direct correlation between the variables. This can be seen below:

$$Corr(x, y) = \frac{Cov(x, y)}{\sigma_x \sigma_y}$$

Equation 5: Correlation Formula

When the correlation is determined this does however not necessarily equal causation, but it can however be used as a basis for analysing the different relationships. The different correlations are presented in a correlation matrix that shows all the different correlations between the different variables. This correlation matrix does not take corporate or period specific characteristics into considerations as will be seen in the panel data analysis, which will probably have the consequence certain correlations differing between the two analyses. Nevertheless the analysis will serve as an efficient method for determining the correlations of interest that are not captured by the panel data regression analysis.

4.3.2. Panel Data

The data collected holds a number of different characteristics. First it involves a number of heterogeneous entities making it a cross sectional study and moreover the data represents different time-periods making it a time-series study. Taking these two characteristics together a panel data study can be conducted.

There are a number of benefits related with using panel data. First, they are more informative as they allow for more variability, less collinearity, and more degrees of freedom. Hence, making estimates more efficient. Second, they allow studying individual dynamics. Thirdly and last, they allow controlling for individual unobserved heterogeneity (Baltagi, 1995).

Panel studies can be conducted through in a number of different ways, but there is however two different main approaches of analysis: i) the fixed-effects model, and ii) the random-effects model (Baltagi, 1995). The fixed effects model explores the correlation between predictor and outcome variables within an entity. This model assumes that each entity has its own individual characteristics, which should be taken into account. When using a fixed effect model the slopes are set constant for the different entities and instead the difference is measured in the intercept. This study uses the fixed effects model, which due to a number of reasons, which will be described below.

	LSDV1	Within Effect	Between Effect
Functional form	$y_i = i\alpha_i + X_i\beta + \varepsilon_i$	$y_{it} - \bar{y}_{i\bullet} = x_{it} - \bar{x}_{i\bullet} + \varepsilon_{it} - \bar{\varepsilon}_{i\bullet}$	$\bar{y}_{i\bullet} = \alpha + \bar{x}_{i\bullet} + \varepsilon_i$
Dummy	Yes	No	No
Dummy coefficient	Presented	Need to be computed	N/A
Transformation	No	Deviation from the group means	Group means
Intercept (estimation)	Yes	No	Yes
R^2	Correct	Incorrect	
SSE	Correct	Correct	
MSE	Correct	Smaller	
Standard error of β	Correct	Incorrect (smaller)	
DF_{error}	*nT-n-k*	*nT-k* (n larger)	*n-K*
Observations	*nT*	*nT*	*n*

Table 2: Comparison of Fixed Effects Models (Park, 2009)

When using the model the least squares dummy variable (LSDV) is used as a method for taking the heterogeneity of the different entities into consideration. In the table 2 above, which is taken from Park (2009), a comparison of different fixed-effects models can be seen.

The ability to measure the effect of individual corporations and also the ability to see the fit between the observations and the model, measured with R-squared, are of high importance to the analysis conducted later on and therefore LSDV1 is a useful approach in this context. One pitfall of this method is the extensive loss of degrees of freedom. As the number of dummies increases so does the multicollinearity meaning that correlation between the different predicting variables. This is also known as 'the dummy variable trap'. This trap is avoided by dropping one dummy from each set of dummy variables. In this study this is done by dropping the dummy for Affitech[1], which is the corporation observed with the lowest returns, and the dummy for 2004Q1, which is the first period observation. This method shown to be efficient in avoiding this type of complications (Suits, 1957; Park, 2009). Moreover previous studies have also shown that they can be efficient with a high number of dummy variables such as Glaeser et al. (2002). In the analysis data it can more be shown that there is still plenty of degrees of freedom left for the analysis to be efficient (Appendix 5).

The random effects model differs from the fixed effects model by assuming the differences for individuals to be random and uncorrelated rather than fixed. This model holds the advantage of being able to test for differences across the different entities. Moreover it allows drawing conclusions not only on the sample analyzed, but also for the population as a whole.

Summing up, it would be able to conduct the analysis by using both, fixed-effects models or random-effects models. The previous approach, especially when using the LSDV method, does however offer some considerable advantages for this study specifically. Moreover the model is in line with the fundamental theoretical ideas of this paper, namely the belief of corporations as heterogeneous entities and the resource-based view (Wernerfeldt, 1986; Barney, 1991). This fundamental idea is in line with the practical advantage of being able to take firm specifics and time period specifics into consideration a need that will also be examined further below when going through the different assumptions for the analysis. At last the method uses well known statistical that makes it easy for the reader to understand the results.

Because of the reasons described above the choice for the statistical model is clear, but statistical tests do however exist that could have helped determine which model to use. The most famous in this regard it the Hausmann-test (Hausmann, 1978; Green, 2008). The test

[1] Affitech A/S has gone into liquidation after the data was collected for this analysis.

basically tests whether or not the unique errors (μ_i) are correlated with the regressors. For this analysis it will however not be necessary.

The data collected is described as an unbalanced panel rather than balanced. This means that the panel does not hold $corporations \times time\ periods \times performance\ measures$ number of observation, but rather a lower number of observations. Unbalanced panels are far from rare in empirical studies, which can be explained by different levels of transparency through reporting, difference in accounting standards, difference in time at the stock exchange, the age of the corporations etc.

The nature of the panel being unbalanced does imply certain computational challenges, which can fortunately be taken care off through statistical software. In the case of this panel the panel is however showing to specifically challenging even when using support from software. In order to overcome this problem the data is split into different panels. So that the different slack measures are tested separately to the different performance measures.

Adopting this approach does obviously have some implications for the analysis. First, it disables the study from directly compare the different independent variables and their direct influence. Secondly, the explanatory power of the model will diminish as explanatory variables are taken out of the equation. Moreover it means that 16 different regressions will have to be conducted rather than the expected six, which will be presented later.

There is however also a range of positive implications that will strengthen the power of the model. First, testing the different abilities in the study separately will mean a substantial increase in the number of observations and thereby increase the robustness of the different models. Especially in a study that includes such a high number of dummy variables as will also be seen later on this will prove to be useful. SAS Statistical Software, which is the program used for conducting the analysis, requires all entities included in the panel to have at least one period with all four different dependent variables being observed, and since some of the different corporations included in the analysis could not fulfill this requirement these would have had to be excluded from the analysis. A last factor that makes the chosen method of analysis preferable is that all speculation about the interrelatedness of the different independent variables can be ignored. Below the necessary assumptions for doing a panel data regression analysis will be examined.

4.3.3. Panel Data Assumptions

As shortly mentioned above in order to enable the data collected to be statistically tested certain assumptions must be fulfilled. First, the disturbances of the different variables must have zero mean, i.e. $E(u_i) = 0$. Taking a look on the data set for this paper there is nothing that suggests that there should be any general disturbances for the different observations and hence the this assumption holds (Baltagi, 1995).

A second assumption is related to the variance in the disturbances for $var(u_i) = \sigma^2$ for every$i = 1, 2, \ldots, n$. In this regard there is an issue as the dataset of this paper includes entities that vary substantially in size, e.g. measured through market capitalization, revenue etc. This violation is however not a problem as the analysis is conducted by a fixed effects model. Through the LSDV method the characteristics of the different corporations is efficiently taken care of and hence this will not serve as a bias for the analysis.

Third, there should be no correlation between disturbances, i.e., $E(u_i u_j) = 0$ for $i \neq j$, $i, j = 1, 2, \ldots, n$. Knowing the *i*-th disturbance should not tell us anything about the disturbances of *j*. Again looking at the dataset this should not be an issue. There can however be certain exogenous events that may influence the whole dataset at a specific point of time and which may enable us to give some kind of explanation for one variable by looking on another. Even though this may have been considered a drawback it will not effect as such. Panel data analysis incorporates the aspect of time and hence certain exogenous effects should not be considered a problem.

The fourth assumption is that the explanatory variable should be non-stochastic, i.e., fixed in repeated samples and therefore not related to the disturbances. More specifically this assumption implies that the Xs are not random variables and therefore not correlated with the disturbances. The dataset fulfills this assumption.

A fifth assumption states that the u_i's are independent and identically distributed. Again the dataset fulfills this assumption.

Assumptions six, states that there should be no perfect multicolleniarity, i.e., the explanatory variables are not perfectly correlated with each other. There is a certain correlation between the different explanatory variables as they consist of certain accounting elements, but this is not to be considered as *perfect multicolliniarity*. Because the independent variables are treated separately this will however not be an issue.

4.3.4. Regression and Equation Specification

Now that the methodological considerations are set in place the equations used for conducting the analysis can be presented. Initially the different dependent variables will be presented by the difference performance measures, which covers both risk and return perspectives. These can be seen below:

$$y_{i,t}^{revenue} = revenue\ growth$$
$$y_{i,t}^{STD.rev.} = revenue\ growth\ standard\ deviation$$
$$y_{i,t}^{OM} = operating\ margin$$
$$y_{i,t}^{STD.OM} = operating\ margin\ standard\ deviation$$
$$y_{i,t}^{ROA} = ROA$$
$$y_{i,t}^{STD.ROA} = ROA\ standard\ deviation$$

Now that the dependent variables have been presented the different independent variables can be presented. As described earlier these are: *distributed autonomy* ($X_{i,t}^{DA}$), *constant best practice adaptation* ($X_{i,t}^{CBP}$), *high level of common knowledge* ($X_{i,t}^{HCK}$), *technological strength* ($X_{i,t}^{TS}$), *resource applicability* ($X_{i,t}^{RAP}$), *market position* ($X_{i,t}^{MP}$), *strategic consistency* ($X_{i,t}^{SC}$), *resource allocation* ($X_{i,t}^{RAL}$), and *financial strength* ($X_{i,t}^{FS}$). Transforming this into a multiple regression formula leaves us gives us the following equation:

$$y_{i,t} = \alpha + \beta^{DA}X_{i,t}^{DA} + \beta^{CBP}X_{i,t}^{CBP} + \beta^{HCK}X_{i,t}^{HCK} + \beta^{TS}X_{i,t}^{TS} + \beta^{RAP}X_{i,t}^{RAP} + \beta^{MP}X_{i,t}^{MP} + \beta^{SC}X_{i,t}^{SC} + \beta^{RAL}X_{i,t}^{RAL} + \beta^{FS}X_{i,t}^{FS} + \mu_i$$

Equation 6: Performance Equation

The variables that we have not described yet are: α, which is the intercept capturing those effects that cannot directly be captured by the different independent variables, and μ_i, which

is the random error for *i*. As has also been described earlier all the different variables described in the equation above cannot be measured. More specifically the variables: *high-level of common knowledge*, *constant best practice adaption*, *strategic consistency*, *market position*, and *resource allocation* will have to be excluded.

At last there is the challenge presented earlier of the *distributed autonomy* parameter, 'SG&A ratio', which is expected to have a curvilinear relationship. This issue of non-linearity can however be solved by adding an extra variable, which is a squared term of the original variable, as shown in other studies such e.g. Chen & Huang (2010). A full overview of the approach of using squared variables can be seen in Meyer (2009). The additional variable will therefore be shown as β^{DA^2}. Hence, the formula is reduced accordingly:

$$y_{i,t} = \alpha + \beta^{DA} X_{i,t}^{DA} + \beta^{DA^2} X_{i,t}^{DA} + \beta^{TS} X_{i,t}^{TS} + \beta^{RAP} X_{i,t}^{RAP} + \beta^{FS} X_{i,t}^{FS} + \mu_{i,t}$$

Equation 7: Performance Equation - Measurable abilities

The formulas outlined above are highly similar to a classical multivariate regression, but does however also include the aspect of time.

As mentioned in the previous section of the study the equations will moreover be further compressed as to only include one ability variable at a time. This formula will however also include a range of dummy variables. Again as mentioned earlier there are 33 corporations in the study, of which 32 will have dummy variables, and 33 periods, again of which 33 will have dummy variables. In short this means that the study will conduct 16 regressions that will all look similar to the one showed below, where *technological strength* has been used as an example:

$$y_{i,t} = \alpha + \beta^{TS} X_{i,t}^{TS} + dCorp1 + \cdots + dCorp32 + dPeriod1 + \cdots + dPeriod32 + \mu_{i,t}$$

Equation 8: Regression Model Example

5. Analysis - Variable Correlation

Before conducting the regression analysis for the different variables a correlation analysis will be conducted. In the correlation matrix, which can be seen below, both dependant and independent variables are included. This analysis is conducted for a number of reasons. First, it will serve as a basis for the regression analysis, which will be conducted, in the subsequent chapter. By doing so we can explore whether we should be aware of certain relationships between the variables, which may bias the subsequent analysis in an undesirable way. Secondly, it will enable us to explore the differences between the correlation effects found in this analysis opposite to the ones presented later on in the regression analysis when controlling for the different time and corporation specific effects. Third and last, the correlation analysis will allow us to test some of those relationships which are not directly tested in the regression analysis, such as those between the dependant variables. This is especially interesting in relation when looking at the risk-return relationships. Classic literature, especially within finance, has emphasized the positive relationship between risk and return, meaning that an increase in risk will also lead to an increase in return (Sharpe, 1964; Treynor, 1965). There is however also alternative literature, which has adopted a quite different approach, arguing for a negative correlation between the two (e.g. Bowman, 1980). The correlation analysis should help us to examine which approach can be applied to the data used in this study and hopefully tell us something about the relationship in general.

Because the relationship between the dependant and independent variables will be analysed in debt in the subsequent chapter there will not be put extensive focus on these in this chapter. The data will however not be left out completely, but will be used in case there is a big divergence between the correlations in the matrix below and the regression analyses in the following chapter. Instead the chapter will start out with examining the relationship between the independent variables followed by the relationship between the dependant variables. Below the full correlation matrix can be seen.

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	ROA	ROA_STD	OM	OM_STD	REV_GROWTH	REV_GROWTH_STD	SG_A_ratio	R_DSales	Quick_ratio	Debt_Equity
ROA	1.00000	-0.32729	0.19646	-0.29264	-0.12821	-0.23690	-0.21276	-0.21624	0.03189	0.04574
ROA		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.3264	0.1490
	1001	1001	975	975	964	964	395	320	949	997
ROA_STD	-0.32729	1.00000	-0.17224	0.26267	0.04712	0.16317	0.18139	0.21763	0.32657	-0.22884
ROA_STD	<.0001		<.0001	<.0001	0.1438	<.0001	0.0003	<.0001	<.0001	<.0001
	1001	1001	975	975	964	964	395	320	949	997
OM	0.19646	-0.17224	1.00000	-0.92805	0.00651	-0.13407	-0.99709	-0.99920	-0.20090	0.07043
OM	<.0001	<.0001		<.0001	0.8354	<.0001	<.0001	<.0001	<.0001	0.0241
	975	975	1045	1045	1023	1023	410	335	978	1026
OM_STD	-0.29264	0.26267	-0.92805	1.00000	0.12760	0.29760	0.94841	0.92938	0.29439	-0.15943
OM_STD	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	975	975	1045	1045	1023	1023	410	335	978	1026
REV_GROWTH	-0.12821	0.04712	0.00651	0.12760	1.00000	0.95735	-0.04217	-0.01349	0.01172	-0.02702
REV_GROWTH	<.0001	0.1438	0.8354	<.0001		<.0001	0.3997	0.8066	0.7158	0.3900
	964	964	1023	1023	1038	1038	401	332	967	1014
REV_GROWTH_STD	-0.23690	0.16317	-0.13407	0.29760	0.95735	1.00000	0.49879	0.12120	0.13885	-0.10422
REV_GROWTH_STD	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	0.0272	<.0001	0.0009
	964	964	1023	1023	1038	1038	401	332	967	1014
SG_A_ratio	-0.21276	0.18139	-0.99709	0.94841	-0.04217	0.49879	1.00000	0.99420	0.24420	-0.07615
SG&A ratio	<.0001	0.0003	<.0001	<.0001	0.3997	<.0001		<.0001	<.0001	0.1246
	395	395	410	410	401	401	410	195	407	408
R_DSales	-0.21624	0.21763	-0.99920	0.92938	-0.01349	0.12120	0.99420	1.00000	0.25079	-0.06112
R&DSales	<.0001	<.0001	<.0001	<.0001	0.8066	0.0272	<.0001		<.0001	0.2632
	320	320	335	335	332	332	195	341	336	337
Quick_ratio	0.03189	0.32657	-0.20090	0.29439	0.01172	0.13885	0.24420	0.25079	1.00000	-0.27428
Quick ratio	0.3264	<.0001	<.0001	<.0001	0.7158	<.0001	<.0001	<.0001		<.0001
	949	949	978	978	967	967	407	336	1009	1009
Debt_Equity	0.04574	-0.22884	0.07043	-0.15943	-0.02702	-0.10422	-0.07615	-0.06112	-0.27428	1.00000
Debt/Equity	0.1490	<.0001	0.0241	<.0001	0.3900	0.0009	0.1246	0.2632	<.0001	
	997	997	1026	1026	1014	1014	408	337	1009	1062

Figure 5: Correlation Matrix

5.1. Independent Variable Correlations

Starting out looking at the correlations for the 'SG&A ratio' towards the other independent variables, especially one relationship stands out, namely the very high correlation between the 'SG&A ratio' and 'R&D to Sales Ratio'. The data shows a correlation coefficient very close to 1, 0.9942, indicating that a change in one of the two would lead to an almost similar change in the other variable. The correlation is however not that surprising. The main reason being, that both variables are based on sales and therefore naturally will be moving in the same direction to a certain extent. Another explanation would be that some corporations may have their 'R&D expenses' included in their 'SG&A expenses'. Therefore there should not be paid too much attention to this result. Moreover the these are not used in the same regression at any point during the study.

Another relationship, which is statistically significant, is the relationship between the 'SG&A ratio' and the 'quick ratio', with a correlation coefficient of 0.2442. Hence a change

in the ‘SG&A ratio’ will generally lead to an increase of about one fourth in the quick ratio. This correlation is to a certain extent surprising as the measures do not have any similar components. The ‘SG&A ratio’ is hence a measure that can be found in the income statement, whereas the ‘quick ratio’ is based on elements from the balance sheet. This may however lead us to conclude that corporations with high ‘SG&A ratios’ also do tend to have high quick ratios to a certain extent.

Moving on to examining the remaining correlations there is a decent correlation between the ‘R&D to Sales Ratio’ and the ‘quick ratio’. More specifically the correlation is measured at 0.25079. In regards to the previous correlation between ‘SG&A ratio’ and ‘R&D to Sales’, which were close to 1, this is not very surprising as the ‘SG&A ratio’ to ‘Quick ratio’ were very similar. Nevertheless the correlation is not obvious in regards to the components in the different measures. There is not found to be any significant correlation between ‘R&D Expenses to Sales’ and the ‘Debt/Equity ratio’.

One correlation that has not yet been examined is the correlation between the ‘Quick ratio’ and ‘Debt/Equity’. This correlation is negative with a correlation coefficient of -0.27428. This is an interesting factor, which seems to indicate that corporations with a high level of liquid assets to also tend to have low debt levels. In general this means that there is found to be correlation between 4 of the six tested variables.

5.2. Dependant Variable Correlations

Moving on looking at the correlations between the different dependant variables there is two different aspects that will be examined. First, the general correlation between the three dependant variables, revenue growth, operating margin, and return on assets will be examined. The paper will also consider the different standard deviation relationships, but there will however not be put much emphasis on the correlation. Secondly, the relationship between the performance indicators and their corresponding standard deviation will be analysed in debt to test for the relationships argued by e.g. Bowman (1980).

Looking at the relationship between Revenue growth and Operating margin there is no clear correlation between the two variables as it is not considered to be statistically significant. This lack of correlation is not as such surprising, but most corporations would however

expect that an increase in their revenue would also lead to an increase in the operational margin.

The results of the correlation between revenue and return on assets is surprising as it is shown to be negative, -0.12821, at a significant level. Corporations would expect that an increase in revenue would enable them to get a higher return on their assets, but this is however shown not to be true. There can be several explanations of this result, but two overall conclusions can however be drawn; namely that revenue growth is often obtained by sacrificing profitability or that revenue growth is obtained through the acquisition of new assets.

The relationship between operating margin and return on assets is positive with a value of 0.19646 and is moreover showing to be significant. Thus, an increase in operating margin is associated with an increase in ROA.

Moving on to examining the correlations between the dependant variables and their corresponding standard deviations the correlation between revenue growth and its corresponding standard deviation is showing to be highly significant with a correlation of 0.95735. This data does not correspond with the prediction of Bowman (1980) that an increase in return would mean a decrease in volatility. The nature of this variable is however slightly different than the two others that will be examined below due to the fact of the variable being a change variable in itself. Nevertheless the data suggest that an increase in revenue growth will often lead to an almost identical increase in volatility.

The correlation between operating margin and operating margin standard deviation is more in line with the predictions by Bowman (1980), namely a significant negative correlation between operating margin and the standard deviation. More specifically the correlation is -0.92805, which means that that an increase in operating margin will be followed by an almost equal negative change in its standard deviation. This also means that corporations with high operating margins often generally tend to achieve this type of margins on a general basis.

The correlation between ROA and its standard deviation is not as significant as the previous correlation but is however negative correlated at a significant level, -0.32729. Again this is in line with Bowman's (1980) predictions. The correlation is lower than the operating margin correlation, but it the nature of the variables is once again different. Accordingly, ROA is naturally subject to change in the asset base, which may lead to some fluctuation. Below the different results from the variable correlation analysis will be summarized.

5.3. Correlation Summary

In the analysis above it becomes clear that there is varying correlation between the different independent and dependant variables in the analysis. Starting out with the correlations between the independent variables four out of the six analysed correlations showed to be significant. This interrelationship is to a certain extent expected after having reviewed the literature on the area previously, which predicts a high degree of interrelation. These results moreover justify the analytical approach used in the subsequent analysis chapter, which adopts an approach of several different regressions with the variables tested individually.

The results for the dependant variables is rather surprising in terms of the variables only being correlated to a certain extent and not entirely in a way that would be expected. Only the correlation between operating margin and ROA showed a correlation close to what would normally be expected. In general it can be concluded that despite the fact that the different components from the variables are included in the others, an increase in one may not necessarily lead to an increase in another.

Last but not least the correlations between the performance indicators and their corresponding standard deviation were examined. Again with mixed results, but however with certain interesting negative correlations that showed support for scholars such as Bowman (1980).

6. Analysis – Testing Abilities through slack measures

In this chapter the different strategic abilities for flexibility and efficiency are tested through the linked slack measures in relation to the performance measures presented previously.

The first part of the analysis is concerned with establishing the hypothesis related to the four measurable abilities namely, *Distributed Autonomy* (SG&A Ratio), *Technological Strengh* (R&D to Sales Ratio), *Resource Applicability* (Quick Ratio), and *Financial Strengh* (Debt/Equity Ratio), which will subsequently be presented in the respective order. Subsequently the regression results will be presented.

6.1. Hypothesis building

As mentioned above this section is concerned with building the hypotheses for testing the relationship between our different independent variables, namely the measurable strategic abilities for flexibility and efficiency, with the dependant variables, being the different performance measures described earlier.

In terms of *distributed autonomy* symbolised by the 'SG&A ratio' this study predicts a concave curvilinear relationship between the 'SG&A ratio' and ROA. On the other hand an approach related to the one of Bowman (1980), who found certain successful corporations not to follow the traditional risk/return relationship, is adopted. Hence, the hypotheses suggest a convex curvilinear relationship between the 'SG&A ratio' and standard deviation of ROA. Because of the close relationship between the 'SG&A ratio' and the operating margin and revenue growth, which was mentioned in the variable presentation previously, these relationships will not be tested. Therefore the analysis of *distributed autonomy* will rely on the analysis seeking to verify the two hypotheses listed below:

H1a: *The relationship between the 'SG&A ratio' and ROA is expected to be concaving curvilinear.*

H1b: *The relationship between the 'SG&A ratio' and the standard deviation of ROA is expected to be convex curvilinear.*

Technological strength, measured through the R&D expenses relative to sales revenue, is also expected to influence the overall performance of the organization while simultaneously decreasing the standard deviation of ROA. Different to the regressions for *distributed autonomy* described above this relationship is however expected to be linear. Again the regression analyses are only conducted with ROA as the dependant variable for the same reasons.

H2a: *The relationship between 'R&D expenses relative to sales' and ROA is expected to be positively correlated.*

H2b: *The relationship between 'R&D expenses relative' to sales and the standard deviation of ROA is expected to be negatively correlated.*

The ability of *resource applicability* is measured through the 'quick ratio'. Again the relationship between the quick ratio and the different performance indicators are expected to be positive, while at the same time being negative with standard deviation. Thus, the following hypotheses can be built in relation to resource applicability:

H3a: *The relationship between the 'quick ratio' and ROA is expected to be positively correlated.*

H3b: *The relationship between the 'quick ratio' and standard deviation of ROA is expected to be negatively correlated.*

H3c: *The relationship between the 'quick ratio' and operating margin is expected to be positively correlated.*

H3d: *The relationship between the 'quick ratio' and standard deviation of operating margin is expected to be negatively correlated.*

H3e: *The relationship between the 'quick ratio' and revenue growth is expected to be positively correlated.*

H3f: *The relationship between the 'quick ratio' and standard deviation of revenue growth is expected to be negatively correlated.*

The debt/equity ratio is the determinant used for testing the *financial strength* of the corporation. Holding a low 'debt/equity ratio' will allow a company to free up resources, keeping in mind that the process may be lengthy due to certain processes. This ability to free up capital will allow corporations to implement some of those initiatives, which had been created through the *market sensing* and *problem solving* processes. Thus, the 'Debt/Equity Ratio' is expected to be negatively correlated with the different performance measures and positively related to the standard deviation of these. On this background the following hypothesis can be established:

H4a: *The relationship between 'D/E-ratio' and ROA is expected to be negatively correlated.*

H4b: *The relationship between 'D/E-ratio' and the standard deviation of ROA is expected to be positively correlated.*

H4c: *The relationship between 'D/E-ratio' and operating margin is expected to be negatively correlated.*

H4d: *The relationship between 'D/E-ratio' and the standard deviation of operating margin is expected to be positively correlated.*

H4e: *The relationship between 'D/E-ratio' and revenue growth is expected to be negatively correlated.*

H4f: *The relationship between 'D/E-ratio' and the standard deviation of revenue growth is expected to be positively correlated.*

In total this leaves the study with 16 different hypotheses covering the four measurable abilities for flexibility and efficiency. In the subsequent section these will be tested through a panel data analysis and thereby enable the study to either accept or reject the different relationships.

6.2. Distributed Autonomy – Testing the SG&A ratio

The regressions done for ROA with the 'SG&A ratio' as the independent variable have generally not been convincing in regards to the predicted hypotheses above. As mentioned in earlier in the presentation of the different variables and in the hypothesis above, the correlation is expected to be curvilinear. This has been observed to some extent however not as expected. The regression is conducted with 395 observations, which is only about a third of the 1089 possible observations (time periods x corporations). This low number occurs due to the limited access to SG&A data, which is only published by certain corporations.

Tested towards ROA the model is accepted with a convincing F-score. More specifically the model shows to be significant at a <0.001 level. When looking at the adjusted R-squared, which seeks to explain to what extent the independent variable observations explain the outcomes predicted by the model, a value of 0.4904 is given. More specifically this means that the independent variable observations explain 49.04% of the predicted outcome of the model.

The non-squared SG&A parameter seems to have a small negative correlation with an estimate of -0.22002 whereas the squared SG&A ratio has a small positive parameter estimate

of 0.00088. None of the parameters do however seem to be significant at a 5% significance level. Hence, hypothesis *H1a is rejected.*

When looking at the model for standard deviation of ROA, the model shows to be robust at a highly significant level. Adj. R-square is lower than above, but there is however some explanatory power from the model, with a score 0.2542. In the same way as with the parameter estimators for ROA, both squared and non-squared, they are however not found to be significant and hypothesis *H1b is therefore rejected*.

In the table below a short overview of the most essential statistical data from the regressions can be found. The original regression data from SAS Statistical software can be found in Appendix 5.

Testing the SG&A Ratio					
Perf. Measure	**Obs.**	**Pr. > F**	**Adj. R^2**	**Par. Est.**	**Pr. > T**
ROA	395	<0.0001	0.4904	-0.22002 / 0.00088	0.2012 / 0.0648
ROA STD	395	<0.0001	0.2542	-010207 / 0.00025	0.4499 / 0.5050

Table 3: ANOVA and Parameter Estimates for the SG&A Ratio

When looking at the influence of the dummy variables it stands out that some of the different corporations have not had data with the 'SG&A ratio' in combination with the different performance measures. In the same way some of the periods analyzed have neither had information available. This does however not influence the other variables as the dummies for the respective corporations are automatically set to zero by the statistical software. These do therefore not have any influence. Looking at the dummies for ROA and ROA standard deviation almost all the different corporation dummy variables are showing to be significant with the exception of Ø.K. when tested in the ROA standard deviation regression. In both regressions all the different period dummies are showing not to be significant.

Remarkably the curvilinear relationships, which were expected between the 'SG&A ratio' and ROA as well as ROA standard deviation, are found to be insignificant. This result is surprising to a certain extent, but there has however been a considerably split in predictions

from previous scholars. As can also be seen in the literature review and the methodology chapter a number of classical economic theorists has seen slack in general having a negative impact on performance (Williamsson, 1963, 1964; Jensen, 1986, 1993; Liebenstein, 1969), whereas others have suggested positive curvilinear relationship (Bourgeouis, 1981). Combined with the regression results shown above this may indicate that there is no clear-cut relationship between the SG&A ratio and the different measures.

6.3. Technological Strength – Testing the R&D Expenses to Sales Ratio

The results for *technological strength* are slightly more encouraging in regards to the predictions of the hypotheses. The range of information about the different corporations R&D expenditure is however quite similar, as this type of information is not required to be publicly available. Ultimately this leaves the different regressions to be performed with 320 observations out of the possible 1089.

Starting out with the regression with ROA as the dependant variable the regression shows a very high F-statistics and is considered to be highly significant. Another interesting variable is the adjusted R-square, which is set to 0.5943. Hence implying the observations to explain almost 60% of the model. Looking at the parameter estimate this may not seem to be very high on only 0.02444, but it is nevertheless found to be significant at a 5% significance level and *H2a can therefore be accepted*. The regression for the standard deviation of ROA is found to be highly significant and does moreover show some explanatory power with an R-squared on 0.2746. The parameter score is moreover found to negative, -0.00402, as expected, but this is however not significant. Therefore *hypothesis (H2b) is rejected*.

The most essential statistical observations can be found below in Table 4 or extensive data from the SAS Software output can be found in Appendix 5.

Testing the R&D Expenses to Sales Ratio					
Perf. Measure	**Obs.**	**Pr. > F**	**Adj. R^2**	**Par. Est.**	**Pr. > T**
ROA	320	<0.0001	0.5943	0.02444	0.0194
ROA STD	320	<0.0001	0.2746	-0.00402	0.6226

Table 4: ANOVA and Parameter Estimates for the R&D to Sales Ratio

Taking a closer look at the different dummy variables used in the analysis these have some of the same characteristics as seen in the regressions with SG&A ratio, namely that a number of dummies are dropped due to the lack of observations from some of the different corporations. This should once again not cause any issues. Starting out with the dummies for ROA. All dummies related to the individual corporations are showing to be significant. In regards to the period dummies these are showing a quite different picture with almost all variables being insignificant with the exception of 2009Q3, 2009Q4, and 2010Q1. This indicates that something significant has happened in this period of time. For ROA standard deviation the results are almost similar, but no time periods are however showing to be significant.

Summing up, despite the correlation between ROA and the 'R&D to Sales Ratio' not being high it is still present and moreover significant. The lack of correlation with 'ROA standard deviation' is surprising, but the correlation does however not show to be opposite to what was expected. The first results very much in line with the literature for the area, which has extensively been describing the importance of investments into R&D activities in order to further the growth and development of businesses (Bettis & Hitt, 1995; Teece, 1986, 2006, 2007). The effect could however potentially have been bigger. In relation to R&D projects a delayed effect from the investment is often seen, which means that the effect is not observed until a later period. This issue can however be prevalent in other relations as well. In the discussion chapter this issue will be further examined.

6.4. Resource Applicability – Testing the Quick Ratio

In this section the relationship between the different performance measures and the corporations' *resource applicability* will be assessed. As mentioned previously the measure linked to this ability is the 'quick ratio'. Contrary to the previous regressions conducted above, data has been widely available for the 'quick ratio'. The regression analysis has been conducted with a minimum of 949 out of the maximum 1089 in the dataset. This high number of observations will help to increase the robustness of the models presented below. Moreover the regression analyses are now carried out with all three dependant variables contrary to the two previous sections.

In relation to the performance measure ROA the regression models are showing to be highly robust and does moreover show a considerable adj. R-square on 0.5628, indicating that the observations explain 56.28% the suggested regression model. The parameter estimate is 2.50638 and is moreover considered to be highly significant at a <0.01% significance level. Based on these observations *the hypothesis (H3a)* of a positive relationship between ROA and corporations' 'quick ratio' can be *accepted*.

When evaluating the data on the standard deviation for ROA the model does once again show to be robust at a high significance level. The R-square of the model is slightly low at 0.2521. The parameter estimate is however not as expected, showing a small positive correlation of 0.04044. This parameter is nevertheless far from significant indicating that there is no real correlation. Hence, the *hypothesis (H3b) should be rejected*.

The relationship between quick ratio and operating margin is not in line with the one predicted by the hypothesis set up earlier, both in terms of operating margin itself and the standard deviation variable. Both models are however found to be highly significant with high F-scores and R-squared of 0.1613 and 0.4118 for operating margin and operating margin standard deviation, respectively (Appendix 5). Where the models are not as expected is in terms of the direction of the relationships, which are showing to be opposite of what was expected. These correlations are however found not to be significant and should therefore be disregarded. Hence, both hypothesis *H3c and H3d can be rejected*.

The model for revenue growth is found to be highly robust at a <0.01% significance level. The parameter estimate is also found to be significant, but with an estimate of 148.88316 it is however moving in direction opposite to the one predicted from the literature and the hypothesis presented earlier. This is highly surprising, but when looking adj. R-squared measure the fit between the observations and the model is however not at a very high level, being measured at 0.0808. Ultimately, the relationship is however not as expected and *H3e will be rejected*.

The standard deviation variable shows some quite different results. The model is once again showing to be highly significant and the R-squared is significantly higher than the revenue growth variable on 0.2521. This is however not to be considered a high explanatory power. The parameter estimate is showing a negative correlation of -103.89119 and is moreover showing to be highly significant. This means that *the hypothesis (H3f) can be accepted*. A short summary of the most important statistics can be seen in Table 5 below and further details can be found in Appendix 5.

Testing the Quick Ratio					
Perf. Measure	**Obs.**	**Pr. > F**	**Adj. R^2**	**Par. Est.**	**Pr. > T**
ROA	949	<0.0001	0.5628	2.50638	<0.0001
ROA STD	949	<0.0001	0.2989	0.04044	0.8547
OM	978	<0.0001	0.1613	-142.50877	0.2523
OM STD	978	<0.0001	0.4118	155.26398	0.0961
Rev. Growth	967	<0.0001	0.0808	-148.88316	<0.0001
Rev. Gr. STD	967	<0.0001	0.2521	-103.89119	<0.0001

Table 5: ANOVA statics and Parameter Estimates for the Quick Ratio

Looking at the dummy variables for the different regressions shows a picture very close to one another. For all six regressions all corporate variables are showing to be significant whereas most time periods are showing to be insignificant. This as such is not that surprising, emphasizing the importance internal resources (Barney, 1991). In regards to the different time periods there are a few that shows to have significant impact on the result. There is however

not a big consistency in these and hence it is impossible to say that a specific period has had significant impact on the corporations general performance.

Studies have not been extensive in the same way on this area, but again the more classic scholars can serve as an explanation for the lack of correlation for certain regressions. Especially scholars such as Jensen (1986) address this issue through his cash flow theory. Again additional issues will be discussed further in the discussion chapter.

Summing up the results for the quick ratio in regards to the different dependant variables all six models showed to be robust, but only three did however have significant parameter estimates. Ultimately, two of these three dependant variables in the relation with the quick ratio were accepted, namely ROA and revenue growth standard deviation. In the end, the confirmed correlation with ROA does however stand out as a powerful finding and will be discussed further later on in the paper.

6.5. Financial Strengh – Testing the Debt/Equity Ratio

The ability of *financial strength*, represented by the 'debt/equity ratio', is like the regressions for the quick ratio analysed with a considerable amount of observations, going from a minimum of 997 observations up to 1027 of the total 1089 observations.

The model for ROA shows a high degree of robustness and the observations does moreover show a relatively high degree of explanation for the outcome of the model with an adj. R-square on 0.5290. The parameter estimate is shown to be -2.28602, which is in line with the predicted negative relationship. Moreover the parameter estimate is shown to be significant at a 5% significance level and *hypothesis H4a is therefore accepted*.

The model for ROA standard deviation is also found to be significant and does moreover show an explanatory effect, symbolized with R-squared, of 0.3121. When looking at the parameter estimate this is however showing an effect opposite of the one expected, namely a negative correlation of -1.40984. This correlation is moreover found to be significant. Because of the correlation being opposite to the one predicted by *the hypothesis (H4b) this is rejected*.

The regression model for operating margin is found to be highly significant, but does however not show a high level of predictive power with a R-squared on only 0.1655. When looking at the parameter estimate, this is however quite interesting being measured at -609.93952. In addition to this the parameter estimate is showing to be robust at a 2.27% significance level. Thus, *hypothesis 4c can be accepted*.

The model for operating margin standard deviation is also showing to be significant and does moreover show a relatively high R-squared on 0.4115. The parameter estimate on 214.82625 is moving in the direction that is predicted by the hypothesis, but the estimate is however not showing to be significant. This means that *the hypothesis (H4d) will be rejected*.

At last the models for revenue growth and revenue growth standard deviation shows to be robust, but again their adj. R-squared are at a low level with 0.0191 and 0.2407, respectively. The former is however significantly lower than the latter. The debt/equity parameter in the revenue growth model shows a positive relationship, which is opposite to the one expected in the hypothesis. The parameter estimate is moreover found to be significant, but due to the unexpected positive relationship *H4e will have to be rejected*.

Revenue growth standard deviation is positively correlated, which is also predicted by hypothesis, but again the parameter is not found to be significant at a 5% significance level. The parameter is however not far off and should be mentioned. Nevertheless, *hypothesis 4f is rejected*. In Table 6 below the numbers commented on above can be found and further information can be found in Appendix 5.

Testing the Debt/Equity Ratio					
Perf. Measure	**Obs.**	**Pr. > F**	**Adj. R^2**	**Par. Est.**	**Pr. > T**
ROA	997	<0.0001	0.5290	-2.28602	0.0005
ROA STD	997	<0.0001	0.3121	-1.40984	<0.0001
OM	1026	<0.0001	0.1655	-609.93952	0.0227
OM STD	1026	<0.0001	0.4115	214.82625	0.2851
Rev. Growth	1014	<0.0001	0.0579	129.31220	0.0246
Rev. Gr. STD.	1014	<0.0001	0.2407	91.85271	0.0617

Table 6: ANOVA Statistics and Parameter Estimates for the Debt/Equity Ratio

The impact of the dummy variables for the ROA regression analysis shows all the corporation dummies to be significant and does again show a significant impact from the period dummies 2009Q3, 2009Q4, and 2010Q1. When ROA standard deviation is used as the variable the results are quite similar. Thus, all corporate variables are again showing to be significant and none of the period variables are showing to be significant.

Taking a look at operating margin and operating margin standard deviation the results are again that all corporate variables show to be significant. This time 2006Q2 does however standout in both regressions as having a significant impact. The dummies for revenue growth and the corresponding standard deviation are not much different. Again all corporation dummies are proofing to be significant, and again one period stands out, this time 2011Q4 (Appendix 5).

The results for D/E as the independent variable are again slightly mixed. The results for ROA are in line with the findings by Chakravarthy (1986) and Greenley & Oktemgil (1998), who also tested on measures such as ROI and ROE. The same is true in regards to operating margin. Revenue growth does however not show any results and none of the different standard deviation variables shows the expected results. The correlation between D/E and revenue growth standard deviation is yet not far from being significant.

The results are however not as expected when it comes to operating margin and revenue growth. Different explanations can be used for this lack of correlation, some being closely related to the explanations of the other independent variables. Again the correlation with ROA does however come out as the most interesting take away especially due to the high explanatory power of the model, which will provide some basis for analysing the results further later on.

In the result summary chapter below the full overview of the accepted and rejected hypotheses can be viewed as well as a short discussion of the significance of the different dummy variables.

6.6. Result Summary

In the analysis above the different hypotheses were statistically tested through a panel data regression analysis and ultimately 5 out of the 16 hypotheses were accepted. Looking at the independent variables the 'SG&A ratio' stands out as not having any hypotheses accepted. As discussed in the analysis above previous research has been disagreeing about the exact correlation of this variable, which may very well explain the lack of the same.

In regards to the other independent variables these did all have at least one hypothesis accepted and all three had had a correlation with ROA. Looking at the other dependant variables the results were however limited. Operating margin did only have one hypothesis accepted, which was in the regression with Debt/Equity, whereas revenue growth standard deviation had a negative correlation with the quick ratio leading to the hypothesis being accepted. In table 7 below an evaluation summary of the different hypotheses can be seen.

Hypothesis Testing – Results for the SG&A ratio			
Hypothesis	**Dependant Variable**	**Independent Variable**	**Evaluation**
Hypothesis 1a	*Return on Assets*	*SG&A ratio*	*Rejected*
Hypothesis 1b	*Standard deviation ROA*	*SG&A Ratio*	*Rejected*
Hypothesis 2a	*Return on Assets*	*R&D to Sales Ratio*	*Accepted*
Hypothesis 2b	*Standard deviation ROA*	*R&D to Sales Ratio*	*Rejected*
Hypothesis 3a	*Return on Assets*	*Quick Ratio*	*Accepted*

Hypothesis 3b	*Standard deviation ROA*	*Quick Ratio*	*Rejected*
Hypothesis 3c	*Operating margin*	*Quick Ratio*	*Rejected*
Hypothesis 3d	*Standard deviation ROA*	*Quick Ratio*	*Rejected*
Hypothesis 3e	*Revenue Growth*	*Quick Ratio*	*Rejected*
Hypothesis 3f	*Standard deviation Rev. Growth*	*Quick Ratio*	*Accepted*
Hypothesis 4a	*Return on Assets*	*Debt/Equity Ratio*	*Accepted*
Hypothesis 4b	*Standard deviation ROA*	*Debt/Equity Ratio*	*Rejected*
Hypothesis 4c	*Operating margin*	*Debt/Equity Ratio*	*Accepted*
Hypothesis 4d	*Standard deviation ROA*	*Debt/Equity Ratio*	*Rejected*
Hypothesis 4e	*Revenue Growth*	*Debt/Equity Ratio*	*Rejected*
Hypothesis 4f	*Standard deviation Rev. Growth*	*Debt/Equity Ratio*	*Rejected*

Table 7: Hypotheses Summary

6.7. Dummy Variable Summary

From the analysis of the different dummy variables above it seems to be clear that corporate specific affects tends to have a high impact on the outcome of the regressions. Generally, there is however a tendency to the different period dummy variables to be insignificant.

Nevertheless, there are some periods that show to have significant impact on the results from the regressions. The first period that stands out is 2006Q2, which has had an effect in regressions with both the quick ratio and the D/E ratio. The most significant is however the time periods: 2009Q3, 2009Q4, and 2010Q1. Especially the two latter are showing to have been significant impact. Hence, the period dummies are showing to be highly significant both in relation to the quick ratio, R&D to sales ratio, and D/E ratio. This is especially related to regressions with ROA as the dependent variable. These data seem to indicate that there must have been certain external factors influencing corporations ROA on a general basis across industries. In hindsight this is not surprising as the financial crises were at a really serious stage at this point. A last time period, which is showing to be significant across different regressions, is 2011Q4. Again both regressions with the quick ratio, R&D to sales ratio and D/E ratio are showing to be significant.

In regards to established theory these dummies add strong support for the resource-based view (Barney, 1991), which are showing that corporate specifics are significant almost at a general level. The findings are however expected based on the theoretical approach of this

paper. On the other hand the market based view are also supported, but not to the same extent (Porter, 1980). In the subsequent chapter the accepted hypothesis conducted from the regressions will be further examined.

7. Discussion

In the previous chapter the different hypothesis, predicting correlations between the testable abilities for flexibility and efficiency and the defined performance measures, were tested. Ultimately, this led to five of these being accepted whereas eleven were rejected. This section is concerned with discussing those results that has been found in the previous sections as well as the methodological and theoretical considerations behind the paper.

The chapter will start with an indebt discussion of the results obtained in the previous section. The section will try to assess whether the exact impact of the results by breaking it down into different components. Subsequently, those results that were not in line with the predicted outcomes will be discussed. In the same way the accepted hypothesis are important in order to evaluate the overall impact and relevance of the study. Once the different results have been discussed, the study will consider these in relation to the strategic abilities that have not been measured. Afterwards, the chapter will evaluate the methodological considerations behind the paper as well as those alternatives that may exist. Last, but not least the potential future research steps will be discussed in order to fully uncover the area of abilities for flexibility and efficiency.

7.1. Findings

As mentioned above whereas the analysis chapter primarily was concerned with rejecting or confirming the different hypotheses, as well as giving an explanation to why the results have occurred. This section takes a deeper look into the established relationships in order to explain the full impact of these. This should enable the study to conclude not only whether an ability is measurable or not, but also to what extent this measurability exists.

The main emphasis will be put on those accepted hypothesis that have shown the highest explanatory effect. More specifically this means that hypotheses *H2a*, *H3a*, and *H4*, which are all correlated with ROA, will receive the highest attention. On the other hand *H3f* and *H4c* will not be examined to the same extent.

7.1.1. Technological Strength - R&D to Sales Ratio's effect on ROA

Taking a closer look at Equation 8 in the previous chapters the values found in the analysis above can be inserted. The only change being that this will ignore period dummy variables and moreover be adapted to one corporation at a time. This equation with ROA as the dependant variable and the *technological strength* as the independant variable can be seen below:

$$ROA_{i,t} = \alpha + \beta^{TS} X_{i,t}^{TS} + dCorpx + \mu_{i,t}$$

$$ROA_{i,t} = -62.66116 + 0.02444 X_{i,t}^{TS} + dCorpx + \mu_{i,t}$$

Equation 9: ROA - Technological Strength Relationship

Looking at the different components in the formula above it becomes obvious that only a small fraction of a corporation's ROA is explained by the 'R&D to Sales ratio'. More specifically a change in the independent variable of one would only increase the corporation's ROA with 0.02444. This is evidently a low value compared to the intercept, -62.66. It should however be mentioned that the intercept is taken from the corporation, Affitech, which has delivered extremely below average results. Alternative corporate intercepts can be seen by adding the dummy variable for the respective corporation together with the intercept.

Going back to the parameter estimate the value, 0.02444, should moreover be put in relation to the $X_{i,t}^{TS}$ value, which rarely shows a value on more than a small fraction[2]. In regards to some of the different Health Care corporations that have also been included in this analysis there might however be some significant numbers included due to the high R&D expenses, while at the same time having low reported sales figures.

A last component of the equation shown above is the $\mu_{i,t}$, which is the variance explaining the gap from the outcome predicted by the model to the actual outcome. As R-squared was calculated to 0.5943 this means that $\mu_{i,t}$ will explain the rest and hence it should be recognized.

[2] See attached electronic appendix (Raw data – PANEL)

After having examined the findings for *Technological Strength* through the 'R&D to Sales Ratio' is becomes clear that despite the positive correlation proved to be significant *Technological strength* on its own do not explain a lot about corporations' performance. This is nevertheless not to say that the measure should not be considered to be important, but in order to understand a corporation's long-term performance *technological strength* must be accompanied by other factors in a more holistic perspective.

7.1.2. Resource Applicability – The Quick Ratio's Affect on ROA

Similar to the discussion of *Technological Strength* above this part also takes a closer look at Equation 8 from the theoretical framework. Adjusted to showing the relationship with the Quick Ratio as the independent variable towards ROA as the dependant, excluding the period dummies and only showing one corporate dummy, the equation with and without specific values can be seen below:

$$ROA_{i,t} = \alpha + \beta^{RA} X_{i,t}^{RA} + dCorpx + \mu_{i,t}$$

$$ROA_{i,t} = -92.10276 + 2.50368 X_{i,t}^{RA} + dCorpx + \mu_{i,t}$$

Equation 10: Resource Applicability - ROA Relationship

Again taking a look at the parameter estimate relative to the intercept this shows significantly higher impact on the total ROA than the previous measure, *technological strength*. With a parameter estimate on 2.50368 a change in the 'quick ratio' would hence lead to a considerable change in ROA. The intercept is showing with a value of -92.10276, which is once again due to the dummy left out in the regression model.

When taking a look at the dummy variables and thereby the corporate specific aspects not covered by the quick ratio these are all showing to be positive. More specifically these are ranging from 55.81, Genmab, as the minimum to 113.04, D/S Norden, as the maximum. This difference indicates that there can naturally be a big difference between corporations, which is also expected, but when taking a closer look to the numbers it does however also become evi-

dent that a lot of the corporate dummies are not that different from one and another with an equally weighted average at 94.38[3].

The influence of the parameter $\mu_{i,t}$ is to a high extend similar to what was just seen in the discussion of *technological strength*. This again is seen by the R-squared, which is set to 0.5628. Taking a brief look at the different $X_{i,t}^{RA}$ values, in order to determine the weight in relation to β^{RA}, it becomes clear that despite values differing substantially these do hold a weight indicating a substantial influence on the total ROA. The median value for $X_{i,t}^{RA}$ is calculated to 0.83[4], which indicates that the quick ratio in general has a substantial effect on ROA. Between the different industries there is certain variation with health care corporations on a general basis showing higher quick ratios relative to the two other measured sectors. Hence, indicating that differences in performance determination may vary across industries.

After thoroughly examining the different components of the equation including the quick ratio it becomes clear that the measure should be considered a significant determinant for corporations ROA. The intercept and the different dummy variables showed that there are several other factors that has not directly been captured by the regression, which holds significant importance to ROA, and hence it may be argued that resource applicability should be considered together with other abilities for flexibility and efficiency. Nonetheless the measure's has considerable impact will allow it to be efficiently applied on the when determining corporations long-term performance.

7.1.3. Financial Strength – Debt/Equity Ratio Affect on ROA

The correlation between the 'Debt/Equity Ratio' and ROA differs from the two previous correlations by being negatively correlated. Like the two previous sections above the equation including *financial strength* can be seen below.

$$ROA_{i,t} = \alpha + \beta^{FS} X_{i,t}^{FS} + dCorpx + \mu_{i,t}$$

$$ROA_{i,t} = -73.95331 - 2.28602 X_{i,t}^{TS} + dCorpx + \mu_{i,t}$$

[3] Mean is the sum of sum of the observations divided by the number of observations (Agresti & Franklin, 2007). See attached electronic appendix (Raw data – PANEL)

[4] Median refers to the observation in the middle, with 50% of all observation falling on one side and 50% on the other site of it (Agresti &Franklin, 2007). See attached electronic appendix (Raw data – PANEL)

Equation 11: Financial Strength - ROA Relationship

Looking at the parameter estimate relative to the intercept the Debt/Equity ratio is showing to have a significant effect on the total outcome with an estimate on -2.28602. Thus, the impact being significantly leveraged is generally showing to have a negative effect on the overall ROA. The intercept is measured to -73.95331, and looking at the different corporate dummies, all with positive value, the importance of the parameter seems even higher.

The dummy variables for the different corporations do generally have a span close to the one seen in the regression with the minimum value, Genmab, of 52.85 spanning to the maximum, Ø.K., with 109.36. In general the dummy variables do however show to have a smaller average value, 84.46, compared to the ones in the previous analysis. This lower value does moreover indicate an even stronger importance of the debt/equity ratio, which hence accounts for an even bigger part of the corporations ROA. The importance of the variable $\mu_{i,t}$ is once again substantial with a R-squared measure of 0.5290. Thus suggesting that $\mu_{i,t}$ on average should determine the remaining 47.1%.

Looking at the different $X_{i,t}^{FS}$ values influencing the already determined β^{FS} parameter estimate the median value for the different corporations are measured to 1.08, which indicates that there is generally a significant impact of the debt/equity ratio towards the overall ROA performance. Looking at the industry differences the picture is to a certain extent similar to the one seen in the previous sections for resource applicability, namely with the health care corporations standing out compared to the two other sectors. Average values are hence close to double for consumer goods and industry corporations compared to health care corporations. Again this may lead to an assumption that differences exist between industries.

The different components within the equation for ROA based on a corporations *financial strength* indicates that the measure 'debt/equity ratio' can be used as a component for efficiently determining a corporations long term performance. The analysis showed like the other abilities that ROA is explained by a number of different company specific factors, which in this analysis has been captured by the dummy variables and the intercept, and again it would

therefore be useful to look at the ability *financial strength* in a more holistic perspective. The measure should however be considered as a powerful indicator.

7.1.4. Additional Findings

In addition to the accepted hypotheses and the findings from these there have also been some hypothesis, which were not accepted. Some of these have even shown a significant correlation, but with results different to what was predicted. As this study is concerned with whether the different strategic abilities can be efficiently measured these finding should certainly be taken into consideration.

There are especially two different regressions, which have had this effect. The first one is the correlation between the 'Quick Ratio' and 'Revenue Growth' and the second is between the 'Debt/Equity' and 'Revenue Growth'. Starting out with the regression between 'Quick Ratio' and 'Revenue Growth' this was expected to be positively correlated, but the result has shown to be in the opposite direction. With 'Debt/Equity' as the independent variable 'Revenue Growth' was expected to be negatively correlated, but again an opposite relationship was observed. These results are interesting because they can be interpreted and explained in a number of different ways. Moreover it is interesting to see how both variables react opposite to the results found with ROA as the dependent variable. First of all, it should however be mentioned that the explanatory power of none of the regressions is very high. With values of 0.0808 and 0.0579, for the 'QuickRatio' and 'Debt/Equity' respectively, this means that the correlation should be treated with caution.

Starting with the 'Quick Ratio' relationship this is linked with *Resource Applicability*, but putting it in another way it may however also mean that a corporation has cash or other marketable resource available to spend. Once this ratio is low it is most likely an indication of one of two things. Either there is no money to spend and 'Revenue Growth' would be expected to be low, or money has recently been spent, which may result in 'Revenue Growth'. Thus, there is no predetermined effect from a change in the variable. The expectation put forward in this study was however that a high 'Quick Ratio' would indicate that corporations would have a high *Resource Applicability* and would thereby have considerable opportunities for future growth.

With the ‘Debt/Equity Ratio’ the logic is to a certain extent similar. According to the predictions in the hypothesis; a low ratio would indicate that the corporation would have the resources available to implement those opportunities that may arise and thereby have a high potential for future growth. On the other hand a high ‘Debt/Equity Ratio’ could similar to the previous relationship indicate that no money is available to execute/implement those opportunities or that the opportunity may already have been executed, which may lead to an increase in revenue.

In the end despite all the possible explanations to why the result may go one way or the other and despite the low explanatory power of the regression models the result is that a high ‘Quick Ratio’ or a low ‘Debt/Equity Ratio’ do not have a positive effect on ‘Revenue Growth’. Thus, a number of corporations may be facing a trade-off between achieving a high growth and improving their ROA. This relationship is again supported by the negative correlation between these two variables in the correlation matrix.

Another issue with the result, which should be addressed, is the related to the volatility performance measures. This study has been quite specific about defining performance not only as being related to a growth rate, a ratio, or a certain return, but equally through the testing of the volatility of these. Hence, emphasizing a risk-return approach of evaluation.

In the correlation matrix presented above there was moreover a clear tendency for at least two out of the three performance measures, ROA and operating margin, to be negatively correlated with their corresponding standard deviation, supporting scholars such as Bowman (1981) and Andersen et al. (2007). However when conducting the regression analyses between the different independent variables and the volatility performance indicators only one of the eight possible hypotheses are accepted. The conclusions that can be drawn from these results are first and foremost that despite a negative correlation between either ROA or ‘Operating Margin’ and one of their corresponding standard deviations this is not due to one of our abilities for flexibility and efficiency. A positive risk-return outcome may still appear from the different strategic abilities for flexibility and efficiency, but this would however primarily be due to a disproportional increase in return.

7.2. Unmeasured Abilities

From the analysis and the discussion of the different confirmed strategic abilities for flexibility and efficiency it is evident that that despite a considerable effect from *resource applicability* and *financial strength* additional abilities are required to fully determine whether a corporations will be competitive long-term.

This is in line with the different scholars earlier discussed who argues for a more holistic perspective when determining long-term competiveness in changing markets (Teece, 2007).

E.g. *resource applicability* could proof essential for solving a problem, but if the corporation has not been successful in *distributing autonomy* (Andersen and Nielsen, 2009) in order to be close to the market this may not matter at all. More specifically the problem or opportunity intended to be dealt with through the different applicable resources may never be realized. Another example could be that the *knowledge level* in the organization was simply not at the required level (Grant, 1996). Thus, again the problem/opportunity would never be sensed. The same correlations will obviously be present for other the remaining abilities as well, potentially being correlated all over the '3-times-3 ability matrix'. Therefore, interrelatedness between abilities should always be considered.

The prospect of a more extensive number of measures related to strategic abilities for flexibility and efficiency may however not be far away. When attaching the different abilities and the different slack measures in the theoretical framework a number of alternative measures were already presented, which could potentially have been used in a regression analysis. However due to the insecurity and lack of verification these were however left out. That being said this does not necessarily have to be permanent. Future studies may help to eliminate the insecurity and verify these variables. Hence, enabling them to be used in a more extensive study of strategic abilities for flexibility and efficiency.

Moreover despite this interrelatedness the identified abilities do still serve as a good indicator for corporations' ability to succeed in the long run despite changing market conditions. At the same time the existence of one strategic ability may have a couple of other useful side effects. First, if sufficiently strong the ability may even be considered as a core competency (Hamel & Prahalad, 1990). If leveraged effectively this can be used as a competitive advantage, but at the same time by leveraging a specific core competency or strategic ability it

may also allow the corporation to efficiently develop others. Secondly, the identification of one ability could even serve as an indicator that another strategic ability for flexibility and efficiency may be present.

7.3. Methodological Considerations

Now that the different results as well as the lack of some have been examined above the different methodological considerations and its impact can be discussed.

The choice of variables, dependant as well as independent, has without much doubt had significant influence and should therefore be examined. In addition, the specific sample chosen will also be discussed.

7.3.1. Variable Considerations

When considering the different variables in this study there are three different aspects that can be looked into. First and foremost, the variables that are the primarily reason for the study and the tests conducted should be considered. Thus, this section should try to access whether the slack measures used to capture the different abilities for flexibility and effiency has been applied correctly and whether alternatives exist. Secondly, it should be considered whether the performance indicators used for capturing these abilities are the most suitable or whether they could have been applied differently. The third and last aspect that should be considered in this study is the aspect of time, which due to the research method applied in this study is also highly relevant.

It is no secret that the different slack measures used for the study has been limited due to the amount of research that has been done on the area. All applied with the exception of the 'Quick Ratio' is however based on previous research where these measures have been used in a more or less similar context (Bourgeois, 1981; Baumgarten et. al. 2010; Chakravarthy, 1982; Grenley & Oktemgil, 1996). The 'Quick Ratio' is moreover an accepted financial measure (Tracy, 2004).

Thus, whereas it would certainly be beneficial to have more material available, this is not a necessity. Additional material would be useful in order to establish a link between the slack measures that it, unfortunately, was not possible as described above. Moreover it would also add extra debt to those links that has already let to the slack measures being used in this study.

Taking a look at the different performance measures chosen for this study it has been clear that response to these in general has been mixed. The regressions showed that there was not the expected correlation between the different slack measures and 'Revenue Growth', the correlation with 'Operating Margin' was found to be limited, whereas there were some interesting results in relation to ROA.

These performance measures were on purpose chosen due to their variety and despite expectations being that these would all be affected in more or less the same way the results do however offer significant value to the analysis. Thus, some of the dependant variables may not have been the most suitable for the analysis if acceptance of hypothesis was the only objective, but they do however add some debt to the study.

This being said there is obviously still a lot of relationship that can be tested in order to broaden the scope of the area. The inclusion of a cash-flow variable has already been discussed previously, and would add further debt especially from a valuation point of view.

The last variable perspective that should be considered is the aspect of time. The short quarterly time periods that has been used in this study was originally chosen in order to predict the highest possible degree of flexibility. As mentioned briefly in the analysis some delayed effect may however exist with the different variables and therefore the short time periods may lead to some data actually distorting the results slightly despite possibly having an actual effect as predicted. At the same time changing the period over to yearly observations might have allowed the study to increase a larger number of variables as described above or to include more corporations in the sample, which will be further touched upon in the subsequent section. Again this would however potentially be a trade-off in regards to the measuring the degree of flexibility.

Thus, from the discussion above it becomes clear that the variable determination process has definitely been able to affect the outcome of the analysis to some extent. Nevertheless, the

ones applied in this study has been determined with caution and has moreover delivered some interested findings. Below the sample considerations and their influence will be discussed.

7.3.2. Sample Considerations

The sample used in the analysis has been chosen in order to present the most objective picture possible within the practical limitations of the study. The aim has therefore generally been impose as few limitations as possible for the corporations included in the analysis. The total objectiveness has however also put some limitations on the paper. More or less mature corporations certainly have different dynamics and therefore they may also respond differently to the different regressions put up (Baumgarten, 2010). Hence, a difference in performance data or on the different independent variables may not necessarily be a due to difference in performance, but rather differences in life cycle stages (Daft, 1983). In the analysis above the issue especially occurred with a number of different corporations in the Health Care sector. Corporations such as Affitech, Genmab, and Bavarian Nordic are all highly research intensive corporations, which are not at a stage where they generate a lot of revenue. On the other hand a number of the other corporations are solidly established corporation with at a high revenue level and a solid asset base.

When forming the sample used for the analysis it has been with a clear aim to create the most truthful sample in terms of real corporate demography. However because only three sectors have been included in this study there is a risk that some proportions may be slightly skewed. The small research corporations may for example take up proportion of the total corporations, which is bigger than what would be expected in a broader study. Therefore it may be argued that a small bias exists.

Some of the doubts related to the sample composition of the study may be solved to a certain extent by being more precise about the objectives of the study. This would however require a number of different other limitations to be put up when determining the corporation sample and thereby leading to the overall objectivity being limited. This study has been conducted with a focus on Danish corporation publicly listed and whereas this have provided

some considerable advantages in terms of access to knowledge and a solid background it does however also limit the scope of corporations to include in the study.

Thus, again despite treating the methodological issues of the study with caution, sample data does hold a significant influence on the outcome of the study.

7.4. Further Research

Now that the different results have been discussed the question increasingly becomes where this leaves the future research of strategic abilities for flexibility and efficiency. It is clear that there is a correlation between corporate performance and three out of four measures put up through the study. Nevertheless, as have also been shown in the different discussion sections above, there are several opportunities for future research.

Starting out with the choice of dependant variables that have been used for the study it is clear that the effect of the different abilities, slack measures, is not very prevalent on the performance measures, operating income and revenue growth. Thus, in order to further verify the correlation and to explore new aspects of the research area additional testing of performance measures would be useful.

Another possibility for future research, which will cultivate the approach even further, would be to change or extent the corporate sample used for the study. As mentioned above adjusting the objectives for the study through the sample would most likely lead to some more significant results in regards to the different abilities. However as also mentioned earlier this may jeopardize the objectivity and broad applicability of the study. Thus, in order not to compromise this, a bigger sample of corporations would be the preferable way to change the composition of the sample in order to make it as precise as possible in terms of reflecting the actual corporate demography.

At last the most complex and difficult approach towards future research is related to those abilities, which have been mentioned in the '3-times-3 ability matrix', but which have not been used through the different regression analysis, due to data not being available. These abilities could probably be uncovered through a range of different case studies, but this would

however proof highly costly if it would also have to be statistically significant. Moreover once the study had been conducted the correlation may have been established, but the future use and applicability of the information would still be limited.

8. Conclusion

Throughout this study several interesting and highly relevant findings were presented, which has enabled it to fulfil the objectives of the study. More specifically through statistical regression analysis the following five significant correlations has been found.

- *Positive correlation between technological strength and ROA*
- ***Positive correlation between resource applicability and ROA***
- *Negative correlation between resource applicability and revenue growth standard deviation*
- ***Negative correlation between financial strength and ROA***
- *Negative correlation between financial strength and operating margin*

Through closer examination of these measures it has moreover been shown that especially the correlation measured between *resource applicability* and ROA and the correlation between *financial strength* and ROA have some very promising results suggesting that these could be useful not only for future research, but also as a measure when developing strategies and management processes in corporations.

The study has been based on a broad range of already established scholars, which has enabled it to build a solid foundation for how to determine strategic abilities for flexibility and efficiency (Bettis and Hitt, 1995; Teece, 2007). Through a close examination of these scholars a '3-times-3 ability matrix' was developed with a main focus on the areas: *market sensing*, *problem solving*, and *implementation strength*. Within each of these headlines three abilities have been defined.

The abilities identified within the *market sensing* were *Distributed Autonomy* (Teece et al., 1997; Bettis and Hitt, 1995; Andersen and Nielsen, 2009; Andersen, 2010); *Constant Best Practice Adaptation* (Eisenhardt and Martin, 2000); and a *High Level of Common Knowledge* (Grant, 1996; Demsetz, 1991). Within the area of *problem solving* the abilities identified were: *Technological Strength* (Teece, 2007; Teece et al., 1997); *Resource Applicability* (Hamel and Pralahad, 1990; Helfat and Peteraf; 2003); and *Market Position* (Mitchell, 1991;

Teece, 2007). At last within the area of *implementation strength* were: *Strategic Consistency* (Adner and Helfat, 2003; Andersen, 2007; Andersen and Nielsen, 2009; and Andersen, 2010); *Resource Allocation* (Teece, 1997); and *Financial Strength* (Bettis and Hitt, 1995).

In order for the abilities in the '3-times-3 ability matrix' to be assessable the concept of slack measures were introduced. Consequently, attaching four out of the nine different strategic abilities for flexibility and efficiency with specific slack measures and thereby enabling these to be measured through a panel data regression model. More specifically *Distributed Autonomy* was found to be measurable through the slack measure 'SG&A ratio'. *Technological Strength* was associated with the slack measure 'R&D Expenses to Sales ratio'. *Resource Applicability'* was associated the 'Quick ratio'. Last, but not least *Financial Strength* was associated with the 'Debt/Equity ratio'.

As mentioned above both *resource applicability*, represented through the 'Quick Ratio', and *financial strength*, represented by the 'Debt/Equity Ratio' can serve as relevant and applicable indicators when determining corporations' long-term competiveness. However as emphasized in the discussion chapter above having a high 'Quick Ratio' or a low 'Debt/Equity Ratio' is no guarantee for achieving this. In order for this to be truly assessed a more holistic perspective should be adopted, including all or as many as possible of the strategic abilities for flexibility and efficiency.

9. References

Adner, Ron & Constance E. Helfat (2003). *Corporate Effects and Dynamic Managerial Capabilities*. Strategic Management Journal, No. 24, pp. 1011-1025.

Agresti, Alan & Christine A. Franklin (2007). *Statistics: The Art of Science and Learning from Data*. Pearson Prentice Hall: New Jersey.

Andersen, Torben J. (2009). *Effective risk management outcomes: exploring effects of innovation and capital structure*. Journal of Strategy and Management, Vol. 2, No. 4, pp. 352-379.

Andersen, Torben J. & Bo B. Nielsen (2009). *Adaptive strategy making: The effects of emegent and intended strategy modes.* European Management Review, Vol. 6, pp. 94-106.

Andersen, Torben J. (2010). *Combining central planning and decentralization to enhance effective risk management outcomes.* Risk Management, Vol. 12, 2, 101-115.

Andersen, Torben J., Jerker Denrell & Richard A. Bettis (2007). *Strategic Responsiveness and Bowman's Risk-Return Paradox.* Strategic Management Journal, Vol. 28, pp. 407-429.

Anderson M., R. Banker, R. Huang, and S. Janakiraman (2007). *Cost behaviour and fundemantal analysis of SG&A costs.* Journal of Accounting, Auditing, and Finance, vol. 22, pp. 1-28.

Andrews K. (1971). *The Concept of Strategy.* Irwin: Homewood, IL.

Astley, W. G. (1978). *Sources of power in organizational life.* Unpublished doctoral dissertation, University of Washington.

Baird I. S. & H. Thomas (1985). *Toward a contingency model of strategic risk taking*. Academy of Management Review, 10: 230–24

Baltagi, Badi H. (1995). *Econometric Analysis of Panel Data*. Chichester, UK: John Wiley & Sons Ltd.

Baltagi, Badi H. (2011). *Econometrics*. New York: Springer

Barnard, C. I. (1938). *Functions of the Executive.* Cambridge, Mass.: Harvard University Press.

Barney, Jay (1991). *Firm Resources and Sustained Competitive Advantage*. Journal of Management, Vol. 17, No. 1, 99-120

Barney, Jay B., David J. Ketchen Jr. & Mike Wright (2011). *The Future of Resource-Based Theory: Revitalization or Decline?*. Journal of Management, Vol. 37, No. 5, pp. 1299-1315.

Baumgarten, Daniel, Ute Bonenkamp, and Carsten Homburg (2010). *The information content of the SG&A ratio*. Journal of Management Accounting Research, vol. 22, pp. 1-22.

Becker G. (1964). *Human Capital* . Columbia University Press: New York

Bettis R. A. (1982). *Risk considerations in modeling corporate strategy*. Academy of Management Proceedings 42: 22–25.

Bettis, Richard A. & Michael A. Hitt (1995). *The New Competitive Landscape*. Strategic Management Journal, Vol. 16, pp. 7-19.

Bodie, Zvi, Alex Kane & Alan J. Marcus (2009). *Investments 8th edition.* McGraw-Hill Education: New York

Bourgeois, L. J. (1981). *On the Measurement of Organizational Slack*. The Academy of Mangement Review. Vol. 6, No. 1, pp. 29-39.

Bowman, E. H. (1980). *A risk-return paradox for strategic management*. Sloan Management Review, Vol. 21, pp. 33-44.

Bowman, E. H. & D. Hurry (1993). *Strategy through the option lens: an integrated view of resruces investment and the incremental-choice process'*. Academy of Management Review, vol. 18, pp. 760-82.

Brealey, Richard A., Steward C. Myers, & Franklin Allen (2010). *Principles of Corporate Finance 8th edition.* McGraw Hill Higher Education: New York

Burgelman, R.A. (1996). *A process model of strategic business exit: Implications for an evolutionary perspective on strategy.* Strategic Management Journal, 17, pp. 193-214.

Burgelman, Robert A., Clayton M. Christensen & Steven C. Wheelwright (2009) Strategic Management of Technology and Innovation, 5th Edition, 2009.

Castanias RP, Helfat CE. (1991). *Managerial resources and rents*. Journal of Management **17**: 155–171.

Chakravarthy, B. S. (1982). *Adaptation: a promising methaphor for strategic management.* Academy of Management Review, vol. 7, pp. 35-44.

Chakravarthy, B. S. (1986). *Measuring strategic performance.* Academy of Management Journal, vol. 7, pp. 437-458.

Chandler, Alfred D. (1962). *Strategy and Structure.* Cambridge, Mass.: The M.I.T. Press

Chandler, Alfred D. (1977). *The Visible Hand.* Cambridge, Mass.: The M.I.T. Press

Chen, Chun-Jen & Yi-Fen Huang (2010), *Creative workforce density, organizational slack, and innovation performance*. Journal of Business Research, No. 63, pp. 411-417

Chesbrough H. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business School Press: Boston, MA.

Claessens, Stijin, M. Ayhan Kose, Luc Laeven, Fabian Valencia (2014). *Financial Crises: Causes, Consequences, and Policy Responses.* Intl. Monetary Fund: Washington.

Cool K. I. Dierickx, & D. Jemison (1989). *Business strategy, market structure and risk–return relationships: a structural approach*. Strategic Management Journal 10: 507–522.

Cyert, R. and J. G. March (1963). *A Behavioural Theory of the Firm.* Prentice- Hall: Englewood Cliffs, NJ.

Daft, R. (1983). *Organization Theory and Design.* New York: West

Demsetz, H. (1991), *"The Theory of the Firm Revisited,"* in 0. E. Williamson and S. Winter (Eds.), The Nature of the Firm, New York: Oxford University Press, 159-178.

Denrell J. 2004. *Risk taking and aspiration levels: two alternative null models*. Academy of Management Best Paper Proceedings, New Orleans, LA.

Dierickx, I. & Cool, K. (1989). *Asset stock accumulation and sustainability of competitive advantage.* Management Science, 35: 1504-1511

Eisenhardt, Kathleen M. & Jeffrey A. Martin (2000). *Dynamic Capabilities: What are they?* Strategic Management Journal, Issue: 21, pp. 1105-1121.

Evans J. S. (1991). *Strategic flexibility for high technology meanoeuvres: a conceptual framework*. Journal of Management Studies, vol. 28, pp. 67-89.

Fiegenbaum, A., Hart S. & D. Schendel (1996). Strategic reference point theory. *Strategic Management Journal*, 17(2), 219-235.

Fox, I. & A. Marcus (1992). *The cases and consequences of leveraged buyouts'.* Academy of Management Journal, vol. 17, pp. 62-85.

Galbraith, Jay (1973). *Designing complex organizations.* Reading, Mass.: Addison-Wesley.

Gelatkanycz M. A. & D. C. Hambrick. (1997). *The external ties of top executives: implications for strategic choice and performance*. Administrative Science Quarterly 42: 654–681.

Glaeser, Edward L., David Laibson & Bruce Sacerdote (2002). *An Economic Approach to Social Capital*. The Economic Journal, 112 (November), pp. 437-458.

Grant, Robert M. (1996). *Prospering in Dynamically-competitive Environments: Organizational Capability as Knowledge Integration*. Organization Science, No. 4, July-August, pp. 375-387.

Grant, Robert M. (2002). *Contemporary Strategy Analysis: Concepts, Techniques, Applications* (4th edn). Blackwell: Malden, MA.

Greene, William H. (2008). *Econometric analysis 6th ed.*, Upper Saddle River, N.J. : Prentice Hall.

Greenley, Gordon E. & Mehmet Oktemgil (1998). *A Comparison of Slack Resources in High and Low Performing British Companies.* Journal of Management Studies, No. 35(3), pp. 377-398.

Hambrick, D. C. & R. A. D'Aveni (1988). *Large corporate failures as downside spirals'.* Administrative Science Quarterly, vol. 33, pp. 1-23.

Hambrick, D. C. & C. C. Snow (1977). *A contextual model of strategic decision making in organizations.* In R. L. Taylor, J. J. O'Connell, R. A. Zawacki & D. D. Warrick (Eds.), Acadeemy of Management Proceedings, pp. 109-112.

Hausman, Jerry A. (1978). *Specification Tests in Econometrics*. Econometrica, vol. 46 (6) pp. 1251–1271.

Helfat, Constantin E. & Margaret A. Peteraf (2003). *The Dynamic Resource-Based View: Capability Lifecycles*. Strategic Management Journal, No. 24, pp. 997-1010

Helfat C., S. Finkelstein, W. Mitchell, M. A. Peteraf, H. Singh, D. J. Teece, and S. G. Winter (2007). *Dynamic Capabilities: Understanding Strategic Change in Organizations.* Blackwell: Oxford, U.K.

Henderson R. & Cockburn I. (1994). *Measuring competence? Exploring firm effects in pharmaceutical research*. Strategic Management Journal, Winter Special Issue **15**: 63–84.

Henderson A.D. & M. J. Benner (2000). *The evolution of risk and return in high-velocity settings*. Academy of Management Best Paper Proceedings, Toronto, Canada.

Henkel J. (2003). *The risk–return paradox for strategic management: disentangling true and spurious effects*. Paper presented at the annual meeting of the Academy of Management, Seattle, WA.

Hofer, C. and D. Schendel (1978). *The risk-return paradox for strategic management: disentangling true and spurious effects.* Paper presented at the annual meeting of the Academy of Management., Seattle, WA.

Jemison D.B. and S. Sitkin (1986). *Acquisitions: the process can be a problem*. Harvard Business Review 64(2): 107–116.

Jensen, Michael C. (1967). *The Performance of Mutual Funds in the period 1945-1964*. Journal of Finance. Vol. 7, No. 2, pp. 389-416.

Jensen, Michael C. (1969). *Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios.* Journal of Business. Vol. 42, No. 2, pp. 167-247

Jensen, Michael C. (1986). *Agency costs of free cash flow, corporate finance, and takeovers.* American Economic Review, vol. 76, pp. 323-329.

Jensen, Michael C. (1993). *The modern industrial revolution, exit, and the failure of internal control systems.* Journal of Finance, vol. 48, 831-880

Klepper, S. (1997). *Industry life cycles*. Industrial and Corporate Change 6(1): 145–182.

Kahneman, Daniel & Amos Tversky (1979). *Prospect Theory: An Analysis of Decision Making under Risk.* Econometrica, Vol. 47, No. 2, pp. 263-292.

Kogut B. & Zander U. (1992). *Knowledge of the firm, combinative capabilities, and the replication of technology*. Organization Science **3**: 383–397.

Kotler P. (1980). *Principles of Marketing* (3rd edn). Prentice-Hall: Englewood Cliffs, NJ.

Levinthal, D. A. and J. G. March (1993). *The myopia of learning*, Strategic Management Journal, Winter Special Issue, 14, pp. 94-112.

Leibenstein, H. (1969). *Organizational or frictional equilibria, X-efficiency, and the rate of innovation*. Quarterly Journal of Economics, vol. 83, pp. 600-623.

Lintner, John (1965). *The Valuation of Risk Assets and the Selection of Riske Investments in Stock Portfolios and Capital Budgets.* Review of Economics and Statistics, Vol. 47, No. 1, pp. 13-37.

March J. G. and H. A. Simon (1958). *Organizations*. Wiley: New York.

March JG. (1991). *Exploration and exploitation in organizational learning*. Organizational Science **2**(1): 71–87.

March JG. (1996). *Continuity and change in theories of organizational action*. Administrative Science Quarterly **41**: 278–287.

March JG. (2006). *Rationality, foolishness, and adaptive intelligence*. Strategic Management Journal **27**(3): 201–214.

March J. G. and Z. Shapira (1987). *Managerial perspectives on risk and risk taking*. Management Science 33: 1404–1418.

March J. G. and Z. Shapira (1992). *Variable risk preferences and the focus of attention*. Psychological Review 99: 172–183.

Markowitz, Harry (1952). *Portfolio Selection.* The Journal of Finance, Vol. 7, No. 1. (Mar., 1952), pp. 77-91

Mitchell W. (1991). *Dual clocks: entry order influences on industry incumbent and newcomer market share and survival when specialized assets retain their value*. Strategic Management Journal **12**(2): 85–100

Mossin, Jan (1996). *Equilibrium in a Capital Asset Market.* Econometrica, Vol. 34, No. 4, pp. 768-783.

Nelson RR, Winter SG. 2002. *Evolutionary theorizing in economics*. Journal of Economic Perspectives **16**(2): 23–46.

Nohria, Nitin & Ranjay Gulati (1996). *Is Slack Good or Bad for Innovation?* The Academy of Management Journal, Vol. 39, No. 5, pp. 1245-1264.

Nonaka I, Toyama R. (2007). *Strategic management as distributed practical wisdom (phronsis)*. Industrial and Corporate Change **16**(3): 371–394.

Oviatt B.M. & A. D. Bauerschmidt (1991). *Business risk and return: a test of simultaneous relationships*. Management Science 37: 1405–1423.

Pondy, L. R. (1967) *Organizational conflict: Concepts and models.* Administrative Science Quarterly, Vol. 12(2), pp. 296-320.

Porter, Michael (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors.*

Prahalad C. K. & G. Hamel (1990). *The Core Competence and the Corporation.* Harvard Business Review, May-June, pp. 71-91.

Ruefli T. W. (1990). *Mean–variance approaches to the risk–return relationship in strategy: paradox lost*. Management Science 36: 368–380.

Ruefli T. W. & R. R. Wiggins (1994). *When mean square error becomes variance: a comment on 'Business risk and return: a test of simultaneous relationships.'* Management Science 40: 750–759

Rumelt, Richard P. (1974). *Strategy, Structure, and Economic Performance*. Division of Research, Harvard Business School, Boston.

Rumelt, Richard P. (1982). *Diversification strategy and profitability*. Strategic Management Journal, vol. 3, pp. 359-369.

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for business students*. Harlow ; Financial Times Prentice Hall

Sanchez, R. (1995). *Strategic flexibility in product competition*. Strategic Management Journal, Summer Special Issue, 16, pp. 135-159.

Sharfman, Mark P. & James W. Dean Jr. (1997). *Flexibility in Strategic Decision Making: Informational and Ideological Perspecitives*. Journal of Management Studies, No. 34(2), pp. 191-217.

Shapiro, C. (1989). *The theory of business strategy.* RAND Journal of Economics, 20(1), pp. 125-137

Sharpe, William F. (1964). *Capital Asset Prices: A Theory of Market Equilibrium.* Journal of Finance, Volume 19, Issue 3, pp. 425-442

Sharpe, William F. (1964). *Mutual Fund Performance.* Journal of Business, Vol, 39, No. 1, pp. 119-138.

Siggelkow, N. (2001). *Change in the presence of fit: the rise, the fal, and the renaissance of Liz Claiborne*. Academy of Management Journal, 44, pp. 838-857.

Simon, H. A. (1957). *Administrative Behaviour*. New York: Free Press.

Singh J. (1986). *Performance slack and risk taking in organizational decision making*. Academy of Management Journal 29: 562–585.

Snieder, R & Larner, K, (2009). *The Art of Being a Scientist: A Guide for Graduate Students and their Mentors*. Cambridge University Press

Suits, Daniel B. (1957). *Use of Dummy Variables in Regression Equations*. Journal of the American Statistical Association. 52, (280): 548–551.

Teece David J. (1986). *Profiting from technological innovation*. Research Policy **15**(6): 285–305

Teece David J. (2006). *Reflections on profiting from innovation*. Research Policy **35**(8): 1131–1146.

Teece, David J. (2007). *Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Entreprise Performance*. Strategic Management Journal, Issue 28, pp. 1319-1350.

Teece, David J., Gary Pisano, and Amy Shuen (1997). *Dynamic Capabilities and Strategic Management*. Strategic Management Journal, Vol. 18, No. 7, pp. 509-533

Thompson, J. D. (1967) *Organizations in action.* New York: McGraw-Hill.

Tracy, John A. (2004). *How to Read a Financial Report: Wringing Vital Signs Out of the Numbers*. John Wiley and Sons. p. 173.

Treynor, Jack L. (1965). *How to Rate Management Investment Funds*. Harvard Business Review, Vol. 43, pp. 63-75.

Vining, Aidan R., Shapiro, Daniel M., and Borges, Bernhard (2006). *Building the firm's political (lobbying) strategy*. Journal of Public Affairs, 5, pp. 150-175

Wernerfelt, Birger (1986). *A Resource-Based View of the Firm.* Strategic Management Journal, Vol. 5, No. 2, pp. 171-180.

Williamson O. E. (1963). *A model of rational managerial behaviour.* In R. M. Cyert & J. G. March (Eds.), A behavioural theory of the firm: pp. 237-252. Englewood Cliffs, NJ: Prentice-Hall.

Williamson O. E. (1964). *The economics of discretionary behaviour Managerial objectives in the theory of the firm.* Englewood Cliffs, NJ: Prentice-Hall

Williamson O. E. (1975). *Markets and Hierarchies*. Free Press: New York.

Williamson, O. E. (1985). *The Economic Institutions of Capitalism*. Free Press, New York.

Williamsson, O. E. (1991). *Comparative Economic Organization: The Analysis of Discrete Structural Alternatives.* Administrative Science Quarterly, Vol. 36, No. 2, Jun.

Wilson, J. (2010). *Essentials of Business Research: A Guide to Doing your Research Project.* Sage Publication.

10. Appendices

Appendix 1 – Dynamic Capabilities – Sensing, Seizing, and Reconfiguration

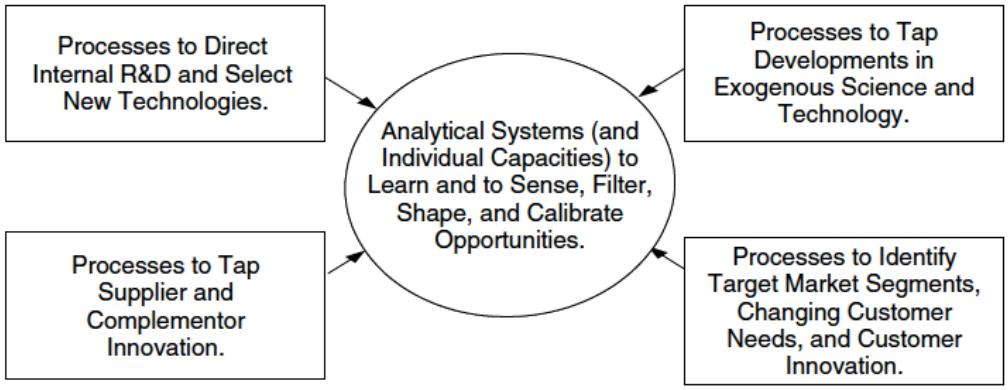

Figure 1: Elements of an ecosystem framework for 'sensing' market and technological opportunities. Source: Teece (2007)

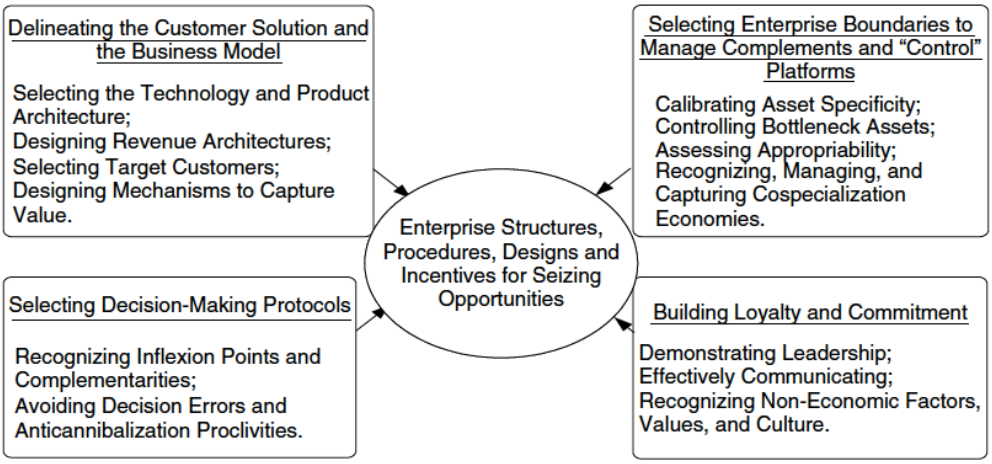

Figure 2: Strategic decision skills/execution. Source: Teece (2007)

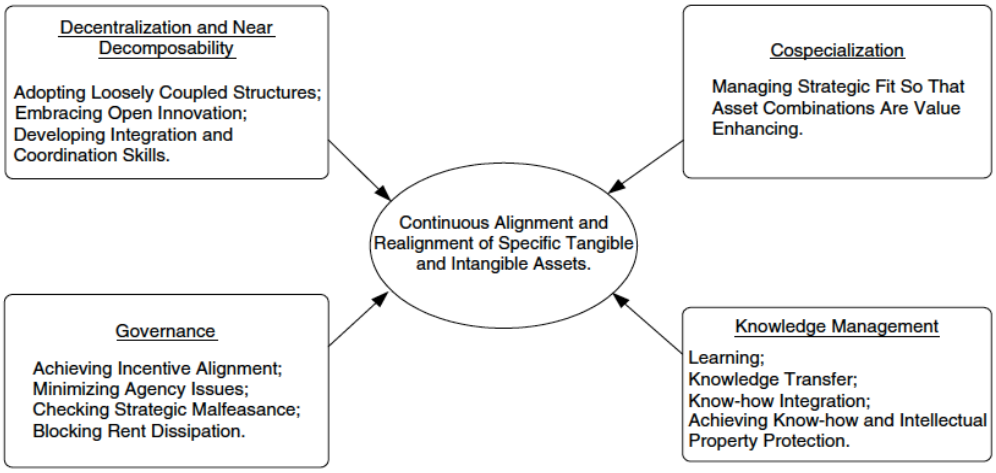

Figure 3: Combination, reconfiguration, and asset protection skills. Source: Teece (2007)

APPENDIX 1: DIFFERENT PERSPECTIVES ON BOWMAN'S RISK–RETURN PARADOX

Perspectives	References	Theoretical rationales	Causalities
1. *Contingencies*			
Prospect theory • return prospects • framing	Kahneman and Tversky (1979, 1984) Bowman (1980, 1982) Fiegenbaum and Thomas (1986, 1988) Fiegenbaum (1990) Jegers (1991) Johnson (1992) Sinha (1994) Wiseman and Catanach (1997)	Decision-makers are influenced by the prospective outcomes of their decisions and current performance. Positive prospects and performance are associated with risk aversion whereas negative prospects and performance are associated with risk-seeking behavior. Hence, low-performing firms tend to accept higher risk.	Good prospects and high performance → risk aversion Poor prospects and low performance → risk seeking
Behavioral theory • reference points • reference matrix	Cyert and March (1963) March and Shapira (1987, 1992) Bromiley (1991) Fiegenbaum, Hart, and Schendel (1996)	Decision-makers 'satisfice' rather than optimize and therefore base decisions on how the firm is performing in relation to certain thresholds for central outcome references.	Performance > reference point(s) → risk aversion Performance < reference point(s) → risk seeking Performance near survival level → risk aversion
Cognitive influences • perceptions • propensity to take risk	Singh (1986) Jemison and Sitkin (1986) Sitkin and Pablo (1992) Pablo, Sitkin, and Jemison (1996) McNamara and Bromiley (1997, 1999)	Decision-makers are influenced by their perceptions of environmental risks and the organization's capacity to handle them. Risk behavior is determined by the associated risk propensity of the decision-makers.	Perceptions of environment → risk perception and risk propensity → risk behavior
Organizational age • life cycle	Henderson and Bender (2000)	Adverse performance is a function of the organization's age.	Life cycle stage → performance → risk behavior
Economic conditions • business cycle • uncertainty	Bettis and Mahajan (1985) Fiegenbaum and Thomas (1986, 1988) Cool and Schendel (1988)	Environmental uncertainty influences the risk behavior of decision-makers and seems to follow the business cycle.	Environmental uncertainty → risk behavior
Competitive structure • strategic groups • rivalry	Cool, Dierickx, and Jemison (1989) Oviatt and Bauerschmidt (1991)	The risk behavior of decision-makers is influenced by the intensity of competitive rivalry and firm conduct under competition.	Competitive rivalry → risk behavior

(continued overleaf)

Source: Andersen et al. (2007)

APPENDIX 1: (*Continued*)

2. *Strategic conduct*			
Strategic management • attitude to risk • risk management	Bowman (1980) Bettis (1982) Baird and Thomas (1985) Miller and Bromiley (1990) Shapira (1995) Miller (1998) Palmer and Wiseman (1999) Andersen and Bettis (2002) Miller and Chen (2003) Fiegenbaum and Thomas (2004)	Good management practices can lead to higher returns and lower risk simultaneously. Managers are willing to accept risk in the belief that they are able to handle the exposures. Formal risk management processes can be associated with economic benefits as relationship costs are reduced. Good managers are risk prone and support innovative behaviors that enhance the organization's ability to respond to environmental change.	Good management practices = risk-seeking behaviors and proactive risk management → high average performance and low variation in performance
3. *Statistical artifacts*			
Misspecification • spurious effects	Ruefli (1990) Ruefli and Wiggins (1994) Henkel (2003) Denrell (2004)	The risk–return relationships are indeterminate. Skewness of return distributions, heterogeneity and serial correlation of performance can lead to inverse risk–return relationships.	Data characteristics and measures → inverse risk–return relationships

Appendix 3 – Strategic flexibility matrix

	Ex ante	*Ex post*
Offensive	Pre-emptive manoeuvres: create options	Exploitive manoeuvres: reap opportunities
Defensive	Protective manoeuvres: insurance against loss	Corrective manoeuvres: learn from mistakes

Figure 4: Modes of Strategic Flexibility. Source: Evans (1991)

Appendix 4 – Corporations excluded from the analysis

Health Care	
Stock	**Note**
AMBU	Limited data
BioPorto	Limited data
ChemoMetec	Limited data
Exiqon	Limited data
Veloxis Pharmaceuticals	Limited data
William Demand Holding	Activities limited to the ownership of other corporations
Zealand Pharma	Limited data
Coloplast	Limited data
Topo Target	Limited data
ALK-Abello	Limited data
Consumer Goods	
Stock	**Note**
Carlsberg A	Not included as the financial data are the same as for Carlsberg B. The later is chosen due to the higher volume
Chr. Hansen	Limited data
Dantax	Limited data
Pandora	Limited data
United International Enterprises	Activities limited to the ownership of other corporations
Egetæpper	Limited data
First Farms	Limited data
Danionics	Limited data
Expedit A/S	Limited data
SBS	Limited data
BoConcept	Limited data
Gabriel	Limited data
Industry	

Stock	Note
A.P. Møller Mærsk	Limited data
Erria	Limited data
Højgaard Holding A	Activities limited to the ownership of other corporations
Højgaard Holding B	Activities limited to the ownership of other corporations
NKT Holding	Activities limited to the ownership of other corporations
Rockwool A	Not included as the financial data are the same as for Rockwool B. The later is chosen due to the higher volume
Rovsing	Limited data
Arkil Holding	Activities limited to the ownership of other corporations
Brdr. Klee	Limited data
G4S	Limited data
InterMail	Limited data
Rias	Limited data
Roblon	Limited data
Dantherm	Limited data
Schulz & Co.	Activities limited to the ownership of other corporations

Appendix 5 – Regression Models

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA ROA

Number of Observations Read	1090
Number of Observations Used	395
Number of Observations with Missing Values	695

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	54	175650	3252.77825	8.02	<.0001
Error	340	137864	405.48216		
Corrected Total	394	313514			

Root MSE	20.13659	**R-Square**	0.5603
Dependent Mean	-0.18278	**Adj R-Sq**	0.4904
Coeff Var	-11017		

Note: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

DUM_United_Plantations =	0
DUM_Novozymes =	0
DUM_DSV =	0
DUM_CPH_Airport =	0
DUM_SKAKO =	0
DUM_Solar =	0
DUM_2004Q4 =	0
DUM_2005Q4 =	0
DUM_2006Q4 =	0
DUM_2007Q4 =	0
DUM_2008Q4 =	0
DUM_2009Q4 =	0

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-73.04612	9.20360	-7.94	<.0001
SG_A_ratio	SG&A ratio	1	-0.22002	0.17181	-1.28	0.2012
SG_A_2	SG&A_2	1	0.00087522	0.00047236	1.85	0.0648
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	61.19731	8.25455	7.41	<.0001
DUM_Genmab	DUM_Genmab	1	50.85746	7.50480	6.78	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	80.86884	7.29949	11.08	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Lundbeck	DUM_Lundbeck	1	88.08620	7.66921	11.49	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	57.84087	8.85966	6.53	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	93.36903	7.27054	12.84	<.0001
DUM_Ossur	DUM_Ossur	1	82.46188	8.17601	10.09	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	76.22123	8.30176	9.18	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	77.37441	7.27412	10.64	<.0001
DUM_Harboe	DUM_Harboe	1	80.65072	8.88601	9.08	<.0001
DUM_IC_Companys	DUM_IC Companys	1	66.75782	13.45436	4.96	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	79.06434	7.29878	10.83	<.0001
DUM___K_	DUM_Ø#K#	1	109.98018	8.31124	13.23	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	75.04659	15.71939	4.77	<.0001
DUM_Hart	DUM_Hart	1	70.31671	7.51381	9.36	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	116.63913	15.86619	7.35	<.0001
DUM_DFDS	DUM_DFDS	1	78.40608	7.59078	10.33	<.0001
DUM_FE_Bording	DUM_FE Bording	1	78.78896	8.64547	9.11	<.0001
DUM_FLSmith	DUM_FLSmith	1	78.30038	7.42698	10.54	<.0001
DUM_Fl_gger	DUM_Flügger	1	84.83695	7.41706	11.44	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	72.85480	7.85762	9.27	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	80.29560	8.09520	9.92	<.0001
DUM_Torm	DUM_Torm	1	82.17771	7.49796	10.96	<.0001
DUM_United_Plantations	DUM_United Plantations	0	0	.	.	.
DUM_DLH	DUM_DLH	1	61.60269	21.66849	2.84	0.0047
DUM_Novozymes	DUM_Novozymes	0	0	.	.	.
DUM_DSV	DUM_DSV	0	0	.	.	.
DUM_H_H	DUM_H+H	1	83.30037	21.42554	3.89	0.0001
DUM_CPH_Airport	DUM_CPH Airport	0	0	.	.	.
DUM_Rockwool	DUM_Rockwool	1	77.65013	21.73747	3.57	0.0004
DUM_SKAKO	DUM_SKAKO	0	0	.	.	.
DUM_Solar	DUM_Solar	0	0	.	.	.
DUM_2004Q2	DUM_2004Q2	1	-2.86478	10.19198	-0.28	0.7788
DUM_2004Q3	DUM_2004Q3	1	-4.96369	10.19157	-0.49	0.6265
DUM_2004Q4	DUM_2004Q4	0	0	.	.	.
DUM_2005Q1	DUM_2005Q1	1	-0.32376	9.20228	-0.04	0.9720
DUM_2005Q2	DUM_2005Q2	1	3.66840	9.42453	0.39	0.6973
DUM_2005Q3	DUM_2005Q3	1	3.49617	9.00155	0.39	0.6980
DUM_2005Q4	DUM_2005Q4	0	0	.	.	.
DUM_2006Q1	DUM_2006Q1	1	8.14641	8.82459	0.92	0.3566
DUM_2006Q2	DUM_2006Q2	1	-0.27937	9.13366	-0.03	0.9756
DUM_2006Q3	DUM_2006Q3	1	15.69635	8.68977	1.81	0.0718
DUM_2006Q4	DUM_2006Q4	0	0	.	.	.
DUM_2007Q1	DUM_2007Q1	1	-0.75047	8.57861	-0.09	0.9303

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2007Q2	DUM_2007Q2	1	-2.04387	9.35482	-0.22	0.8272
DUM_2007Q3	DUM_2007Q3	1	-5.01423	8.83497	-0.57	0.5707
DUM_2007Q4	DUM_2007Q4	0	0	.	.	.
DUM_2008Q1	DUM_2008Q1	1	-1.35041	8.11947	-0.17	0.8680
DUM_2008Q2	DUM_2008Q2	1	-1.10451	8.58750	-0.13	0.8977
DUM_2008Q3	DUM_2008Q3	1	-0.78267	8.30696	-0.09	0.9250
DUM_2008Q4	DUM_2008Q4	0	0	.	.	.
DUM_2009Q1	DUM_2009Q1	1	-1.26597	8.09718	-0.16	0.8759
DUM_2009Q2	DUM_2009Q2	1	-4.95037	8.18039	-0.61	0.5455
DUM_2009Q3	DUM_2009Q3	1	-10.21566	8.20612	-1.24	0.2140
DUM_2009Q4	DUM_2009Q4	0	0	.	.	.
DUM_2010Q1	DUM_2010Q1	1	-18.79777	8.12374	-2.31	0.0213
DUM_2010Q2	DUM_2010Q2	1	-4.85051	8.23854	-0.59	0.5564
DUM_2010Q3	DUM_2010Q3	1	-2.31009	8.33886	-0.28	0.7819
DUM_2010Q4	DUM_2010Q4	1	-0.39884	21.56415	-0.02	0.9853
DUM_2011Q1	DUM_2011Q1	1	-3.95371	8.22433	-0.48	0.6310
DUM_2011Q2	DUM_2011Q2	1	-1.05974	8.12481	-0.13	0.8963
DUM_2011Q3	DUM_2011Q3	1	-1.20984	8.42692	-0.14	0.8859
DUM_2011Q4	DUM_2011Q4	1	-0.48676	12.35851	-0.04	0.9686
DUM_2012Q1	DUM_2012Q1	1	-2.00911	8.20644	-0.24	0.8067

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA_STD ROA_STD

Number of Observations Read	1090
Number of Observations Used	395
Number of Observations with Missing Values	695

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	54	47089	872.02683	3.45	<.0001
Error	340	85869	252.55694		
Corrected Total	394	132959			

Root MSE	15.89204	R-Square	0.3542
Dependent Mean	7.72031	Adj R-Sq	0.2516
Coeff Var	205.84726		

Note: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

DUM_United_Plantations =	0
DUM_Novozymes =	0
DUM_DSV =	0
DUM_CPH_Airport =	0
DUM_SKAKO =	0
DUM_Solar =	0
DUM_2004Q4 =	0
DUM_2005Q4 =	0
DUM_2006Q4 =	0
DUM_2007Q4 =	0
DUM_2008Q4 =	0
DUM_2009Q4 =	0

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	52.50247	7.26359	7.23	<.0001
SG_A_ratio	SG&A ratio	1	-0.10329	0.13559	-0.76	0.4467
SG_A_2	SG&A_2	1	0.00025349	0.00037279	0.68	0.4970
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-38.66513	6.51459	-5.94	<.0001
DUM_Genmab	DUM_Genmab	1	-39.64102	5.92288	-6.69	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-41.78596	5.76084	-7.25	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Lundbeck	DUM_Lundbeck	1	-45.56122	6.05263	-7.53	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-40.46221	6.99216	-5.79	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-42.23561	5.73800	-7.36	<.0001
DUM_Ossur	DUM_Ossur	1	-44.76633	6.45261	-6.94	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-39.52975	6.55185	-6.03	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-46.56854	5.74083	-8.11	<.0001
DUM_Harboe	DUM_Harboe	1	-45.37126	7.01295	-6.47	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-31.54590	10.61834	-2.97	0.0032
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-42.75829	5.76028	-7.42	<.0001
DUM___K_	DUM_Ø#K#	1	-10.52788	6.55933	-1.61	0.1094
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-42.46896	12.40594	-3.42	0.0007
DUM_Hart	DUM_Hart	1	-36.59863	5.92999	-6.17	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-30.32417	12.52179	-2.42	0.0160
DUM_DFDS	DUM_DFDS	1	-45.87829	5.99074	-7.66	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-44.28960	6.82311	-6.49	<.0001
DUM_FLSmith	DUM_FLSmith	1	-41.31982	5.86146	-7.05	<.0001
DUM_Fl_gger	DUM_Flügger	1	-44.61297	5.85363	-7.62	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-41.36183	6.20133	-6.67	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-44.59170	6.38883	-6.98	<.0001
DUM_Torm	DUM_Torm	1	-37.25625	5.91748	-6.30	<.0001
DUM_United_Plantations	DUM_United Plantations	0	0	.	.	.
DUM_DLH	DUM_DLH	1	-50.98447	17.10104	-2.98	0.0031
DUM_Novozymes	DUM_Novozymes	0	0	.	.	.
DUM_DSV	DUM_DSV	0	0	.	.	.
DUM_H_H	DUM_H+H	1	-35.46352	16.90930	-2.10	0.0367
DUM_CPH_Airport	DUM_CPH Airport	0	0	.	.	.
DUM_Rockwool	DUM_Rockwool	1	-45.36130	17.15548	-2.64	0.0086
DUM_SKAKO	DUM_SKAKO	0	0	.	.	.
DUM_Solar	DUM_Solar	0	0	.	.	.
DUM_2004Q2	DUM_2004Q2	1	-2.32796	8.04363	-0.29	0.7724
DUM_2004Q3	DUM_2004Q3	1	-3.83118	8.04331	-0.48	0.6342
DUM_2004Q4	DUM_2004Q4	0	0	.	.	.
DUM_2005Q1	DUM_2005Q1	1	-8.75838	7.26255	-1.21	0.2287
DUM_2005Q2	DUM_2005Q2	1	-5.19225	7.43795	-0.70	0.4856
DUM_2005Q3	DUM_2005Q3	1	-6.88059	7.10414	-0.97	0.3335
DUM_2005Q4	DUM_2005Q4	0	0	.	.	.
DUM_2006Q1	DUM_2006Q1	1	-4.36173	6.96447	-0.63	0.5315
DUM_2006Q2	DUM_2006Q2	1	-6.91070	7.20839	-0.96	0.3384
DUM_2006Q3	DUM_2006Q3	1	3.34825	6.85807	0.49	0.6257
DUM_2006Q4	DUM_2006Q4	0	0	.	.	.
DUM_2007Q1	DUM_2007Q1	1	-8.88717	6.77035	-1.31	0.1902

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2007Q2	DUM_2007Q2	1	-2.83912	7.38294	-0.38	0.7008
DUM_2007Q3	DUM_2007Q3	1	-4.64605	6.97267	-0.67	0.5057
DUM_2007Q4	DUM_2007Q4	0	0	.	.	.
DUM_2008Q1	DUM_2008Q1	1	-7.20123	6.40799	-1.12	0.2619
DUM_2008Q2	DUM_2008Q2	1	-7.36258	6.77736	-1.09	0.2781
DUM_2008Q3	DUM_2008Q3	1	-9.26532	6.55595	-1.41	0.1585
DUM_2008Q4	DUM_2008Q4	0	0	.	.	.
DUM_2009Q1	DUM_2009Q1	1	-6.90264	6.39039	-1.08	0.2808
DUM_2009Q2	DUM_2009Q2	1	-7.37757	6.45607	-1.14	0.2540
DUM_2009Q3	DUM_2009Q3	1	-3.89355	6.47637	-0.60	0.5481
DUM_2009Q4	DUM_2009Q4	0	0	.	.	.
DUM_2010Q1	DUM_2010Q1	1	4.59502	6.41136	0.72	0.4741
DUM_2010Q2	DUM_2010Q2	1	-7.65920	6.50196	-1.18	0.2396
DUM_2010Q3	DUM_2010Q3	1	-7.12181	6.58113	-1.08	0.2799
DUM_2010Q4	DUM_2010Q4	1	-4.81497	17.01869	-0.28	0.7774
DUM_2011Q1	DUM_2011Q1	1	-5.08307	6.49074	-0.78	0.4341
DUM_2011Q2	DUM_2011Q2	1	-7.74057	6.41220	-1.21	0.2282
DUM_2011Q3	DUM_2011Q3	1	-7.51067	6.65063	-1.13	0.2596
DUM_2011Q4	DUM_2011Q4	1	-5.02521	9.75349	-0.52	0.6067
DUM_2012Q1	DUM_2012Q1	1	-6.92092	6.47662	-1.07	0.2860

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA ROA

Number of Observations Read	1090
Number of Observations Used	320
Number of Observations with Missing Values	770

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	46	180937	3933.41068	11.16	<.0001
Error	273	96225	352.47106		
Corrected Total	319	277161			

Root MSE	18.77421	R-Square	0.6528
Dependent Mean	-4.22926	Adj R-Sq	0.5943
Coeff Var	-443.91280		

Note: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

DUM_Harboe =	0
DUM_IC_Companys =	0
DUM_Royal_Unibrew =	0
DUM___K_ =	0
DUM_A_O__Johansen =	0
DUM_Hart =	0
DUM_D_S_Norden =	0
DUM_DFDS =	0
DUM_Fl_gger =	0
DUM_Aarsleff =	0
DUM_Torm =	0
DUM_United_Plantations =	0
DUM_DLH =	0
DUM_DSV =	0
DUM_H_H =	0
DUM_CPH_Airport =	0
DUM_Rockwool =	0
DUM_SKAKO =	0
DUM_Solar =	0

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-62.66116	9.02698	-6.94	<.0001
R_DSales	R&DSales	1	0.02444	0.01039	2.35	0.0194
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	64.48083	5.59774	11.52	<.0001
DUM_Genmab	DUM_Genmab	1	52.65347	5.72002	9.21	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	82.25266	5.67270	14.50	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	89.32475	5.60336	15.94	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	59.45936	6.08123	9.78	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	94.36808	5.60356	16.84	<.0001
DUM_Ossur	DUM_Ossur	1	80.85460	5.69991	14.19	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	77.35384	6.47642	11.94	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	82.73709	14.66658	5.64	<.0001
DUM_Harboe	DUM_Harboe	0	0	.	.	.
DUM_IC_Companys	DUM_IC Companys	0	0	.	.	.
DUM_Royal_Unibrew	DUM_Royal Unibrew	0	0	.	.	.
DUM___K_	DUM_Ø#K#	0	0	.	.	.
DUM_A_O__Johansen	DUM_A#O# Johansen	0	0	.	.	.
DUM_Hart	DUM_Hart	0	0	.	.	.
DUM_D_S_Norden	DUM_D/S Norden	0	0	.	.	.
DUM_DFDS	DUM_DFDS	0	0	.	.	.
DUM_FE_Bording	DUM_FE Bording	1	75.41958	20.16617	3.74	0.0002
DUM_FLSmith	DUM_FLSmith	1	85.63823	6.47683	13.22	<.0001
DUM_Fl_gger	DUM_Flügger	0	0	.	.	.
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	75.48798	6.19619	12.18	<.0001
DUM_Aarsleff	DUM_Aarsleff	0	0	.	.	.
DUM_Torm	DUM_Torm	0	0	.	.	.
DUM_United_Plantations	DUM_United Plantations	0	0	.	.	.
DUM_DLH	DUM_DLH	0	0	.	.	.
DUM_Novozymes	DUM_Novozymes	1	90.20101	5.83302	15.46	<.0001
DUM_DSV	DUM_DSV	0	0	.	.	.
DUM_H_H	DUM_H+H	0	0	.	.	.
DUM_CPH_Airport	DUM_CPH Airport	0	0	.	.	.
DUM_Rockwool	DUM_Rockwool	0	0	.	.	.
DUM_SKAKO	DUM_SKAKO	0	0	.	.	.
DUM_Solar	DUM_Solar	0	0	.	.	.
DUM_2004Q2	DUM_2004Q2	1	0.27146	10.83931	0.03	0.9800
DUM_2004Q3	DUM_2004Q3	1	-4.45014	10.83930	-0.41	0.6817
DUM_2004Q4	DUM_2004Q4	1	-17.06074	10.90857	-1.56	0.1190
DUM_2005Q1	DUM_2005Q1	1	-13.47490	10.88569	-1.24	0.2168
DUM_2005Q2	DUM_2005Q2	1	-8.22309	10.49877	-0.78	0.4342
DUM_2005Q3	DUM_2005Q3	1	-8.22732	10.49898	-0.78	0.4339
DUM_2005Q4	DUM_2005Q4	1	-7.94364	10.19394	-0.78	0.4365

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2006Q1	DUM_2006Q1	1	-10.75448	9.74456	-1.10	0.2707
DUM_2006Q2	DUM_2006Q2	1	-15.18119	9.87001	-1.54	0.1252
DUM_2006Q3	DUM_2006Q3	1	-12.57408	9.74312	-1.29	0.1979
DUM_2006Q4	DUM_2006Q4	1	-14.72598	9.98284	-1.48	0.1413
DUM_2007Q1	DUM_2007Q1	1	-12.74535	9.76364	-1.31	0.1929
DUM_2007Q2	DUM_2007Q2	1	-14.00800	9.93385	-1.41	0.1596
DUM_2007Q3	DUM_2007Q3	1	-15.58170	9.93386	-1.57	0.1179
DUM_2007Q4	DUM_2007Q4	1	-11.70434	9.96158	-1.17	0.2410
DUM_2008Q1	DUM_2008Q1	1	-10.81303	9.45617	-1.14	0.2538
DUM_2008Q2	DUM_2008Q2	1	-13.61686	9.59056	-1.42	0.1568
DUM_2008Q3	DUM_2008Q3	1	-11.40349	9.45641	-1.21	0.2289
DUM_2008Q4	DUM_2008Q4	1	-15.68574	9.69040	-1.62	0.1067
DUM_2009Q1	DUM_2009Q1	1	-10.17118	9.45626	-1.08	0.2831
DUM_2009Q2	DUM_2009Q2	1	-16.11901	9.59056	-1.68	0.0940
DUM_2009Q3	DUM_2009Q3	1	-24.84478	9.45611	-2.63	0.0091
DUM_2009Q4	DUM_2009Q4	1	-19.29579	9.52152	-2.03	0.0437
DUM_2010Q1	DUM_2010Q1	1	-39.62512	9.45620	-4.19	<.0001
DUM_2010Q2	DUM_2010Q2	1	-18.00245	9.45637	-1.90	0.0580
DUM_2010Q3	DUM_2010Q3	1	-13.61522	9.78025	-1.39	0.1650
DUM_2010Q4	DUM_2010Q4	1	-14.88642	9.77799	-1.52	0.1291
DUM_2011Q1	DUM_2011Q1	1	-17.90959	9.61888	-1.86	0.0637
DUM_2011Q2	DUM_2011Q2	1	-10.95472	9.45647	-1.16	0.2477
DUM_2011Q3	DUM_2011Q3	1	-14.80287	9.77872	-1.51	0.1312
DUM_2011Q4	DUM_2011Q4	1	-11.17943	9.78078	-1.14	0.2540
DUM_2012Q1	DUM_2012Q1	1	-10.75179	9.61779	-1.12	0.2646

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA_STD ROA_STD

Number of Observations Read	1090
Number of Observations Used	320
Number of Observations with Missing Values	770

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	46	36325	789.67191	3.63	<.0001
Error	273	59469	217.83588		
Corrected Total	319	95794			

Root MSE	14.75926	R-Square	0.3792
Dependent Mean	7.54841	Adj R-Sq	0.2746
Coeff Var	195.52818		

Note: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

DUM_Harboe =	0
DUM_IC_Companys =	0
DUM_Royal_Unibrew =	0
DUM___K_ =	0
DUM_A_O__Johansen =	0
DUM_Hart =	0
DUM_D_S_Norden =	0
DUM_DFDS =	0
DUM_Fl_gger =	0
DUM_Aarsleff =	0
DUM_Torm =	0
DUM_United_Plantations =	0
DUM_DLH =	0
DUM_DSV =	0
DUM_H_H =	0
DUM_CPH_Airport =	0
DUM_Rockwool =	0
DUM_SKAKO =	0
DUM_Solar =	0

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	52.72562	7.09652	7.43	<.0001
R_DSales	R&DSales	1	-0.00402	0.00817	-0.49	0.6226
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-33.04474	4.40064	-7.51	<.0001
DUM_Genmab	DUM_Genmab	1	-34.03289	4.49677	-7.57	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-36.45054	4.45957	-8.17	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-40.57630	4.40506	-9.21	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-33.53465	4.78074	-7.01	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-37.24158	4.40522	-8.45	<.0001
DUM_Ossur	DUM_Ossur	1	-39.88688	4.48096	-8.90	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-35.23617	5.09141	-6.92	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-40.70969	11.53007	-3.53	0.0005
DUM_Harboe	DUM_Harboe	0	0	.	.	.
DUM_IC_Companys	DUM_IC Companys	0	0	.	.	.
DUM_Royal_Unibrew	DUM_Royal Unibrew	0	0	.	.	.
DUM___K_	DUM_Ø#K#	0	0	.	.	.
DUM_A_O__Johansen	DUM_A#O# Johansen	0	0	.	.	.
DUM_Hart	DUM_Hart	0	0	.	.	.
DUM_D_S_Norden	DUM_D/S Norden	0	0	.	.	.
DUM_DFDS	DUM_DFDS	0	0	.	.	.
DUM_FE_Bording	DUM_FE Bording	1	-36.92534	15.85355	-2.33	0.0206
DUM_FLSmith	DUM_FLSmith	1	-39.05332	5.09173	-7.67	<.0001
DUM_Fl_gger	DUM_Flügger	0	0	.	.	.
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-35.47945	4.87111	-7.28	<.0001
DUM_Aarsleff	DUM_Aarsleff	0	0	.	.	.
DUM_Torm	DUM_Torm	0	0	.	.	.
DUM_United_Plantations	DUM_United Plantations	0	0	.	.	.
DUM_DLH	DUM_DLH	0	0	.	.	.
DUM_Novozymes	DUM_Novozymes	1	-40.20051	4.58561	-8.77	<.0001
DUM_DSV	DUM_DSV	0	0	.	.	.
DUM_H_H	DUM_H+H	0	0	.	.	.
DUM_CPH_Airport	DUM_CPH Airport	0	0	.	.	.
DUM_Rockwool	DUM_Rockwool	0	0	.	.	.
DUM_SKAKO	DUM_SKAKO	0	0	.	.	.
DUM_Solar	DUM_Solar	0	0	.	.	.
DUM_2004Q2	DUM_2004Q2	1	0.07642	8.52127	0.01	0.9929
DUM_2004Q3	DUM_2004Q3	1	-4.65606	8.52127	-0.55	0.5852
DUM_2004Q4	DUM_2004Q4	1	-11.20936	8.57573	-1.31	0.1923
DUM_2005Q1	DUM_2005Q1	1	-15.06227	8.55774	-1.76	0.0795
DUM_2005Q2	DUM_2005Q2	1	-9.01337	8.25356	-1.09	0.2758
DUM_2005Q3	DUM_2005Q3	1	-11.57815	8.25372	-1.40	0.1618
DUM_2005Q4	DUM_2005Q4	1	-11.14236	8.01392	-1.39	0.1655

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2006Q1	DUM_2006Q1	1	-14.04059	7.66064	-1.83	0.0679
DUM_2006Q2	DUM_2006Q2	1	-12.21956	7.75927	-1.57	0.1165
DUM_2006Q3	DUM_2006Q3	1	-13.05932	7.65951	-1.70	0.0893
DUM_2006Q4	DUM_2006Q4	1	-13.15613	7.84797	-1.68	0.0948
DUM_2007Q1	DUM_2007Q1	1	-12.89748	7.67564	-1.68	0.0940
DUM_2007Q2	DUM_2007Q2	1	-11.13561	7.80945	-1.43	0.1550
DUM_2007Q3	DUM_2007Q3	1	-10.19728	7.80946	-1.31	0.1927
DUM_2007Q4	DUM_2007Q4	1	-15.98552	7.83125	-2.04	0.0422
DUM_2008Q1	DUM_2008Q1	1	-13.30135	7.43392	-1.79	0.0747
DUM_2008Q2	DUM_2008Q2	1	-11.94570	7.53957	-1.58	0.1143
DUM_2008Q3	DUM_2008Q3	1	-12.97146	7.43411	-1.74	0.0821
DUM_2008Q4	DUM_2008Q4	1	-13.62718	7.61807	-1.79	0.0748
DUM_2009Q1	DUM_2009Q1	1	-11.05602	7.43400	-1.49	0.1381
DUM_2009Q2	DUM_2009Q2	1	-12.86553	7.53957	-1.71	0.0891
DUM_2009Q3	DUM_2009Q3	1	-7.67455	7.43388	-1.03	0.3028
DUM_2009Q4	DUM_2009Q4	1	-10.04994	7.48530	-1.34	0.1805
DUM_2010Q1	DUM_2010Q1	1	7.68755	7.43395	1.03	0.3020
DUM_2010Q2	DUM_2010Q2	1	-13.57802	7.43408	-1.83	0.0689
DUM_2010Q3	DUM_2010Q3	1	-12.51246	7.68870	-1.63	0.1048
DUM_2010Q4	DUM_2010Q4	1	-11.39751	7.68692	-1.48	0.1393
DUM_2011Q1	DUM_2011Q1	1	-8.02918	7.56184	-1.06	0.2893
DUM_2011Q2	DUM_2011Q2	1	-12.67317	7.43417	-1.70	0.0894
DUM_2011Q3	DUM_2011Q3	1	-14.98957	7.68750	-1.95	0.0522
DUM_2011Q4	DUM_2011Q4	1	-14.05638	7.68911	-1.83	0.0686
DUM_2012Q1	DUM_2012Q1	1	-13.69346	7.56098	-1.81	0.0712

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA ROA

Number of Observations Read	1090
Number of Observations Used	949
Number of Observations with Missing Values	141

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	349598	5378.43499	19.78	<.0001
Error	883	240140	271.95928		
Corrected Total	948	589738			

Root MSE	16.49119	R-Square	0.5928
Dependent Mean	2.26910	Adj R-Sq	0.5628
Coeff Var	726.77332		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-92.10276	5.37045	-17.15	<.0001
Quick_ratio	Quick ratio	1	2.50638	0.27503	9.11	<.0001
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	72.72072	4.30408	16.90	<.0001
DUM_Genmab	DUM_Genmab	1	55.80917	4.24663	13.14	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	97.55913	4.53578	21.51	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	104.50574	4.53017	23.07	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	66.83634	4.54165	14.72	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	108.88534	4.50359	24.18	<.0001
DUM_Ossur	DUM_Ossur	1	96.31939	4.62029	20.85	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	93.26432	4.94444	18.86	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	95.64221	4.60324	20.78	<.0001
DUM_Harboe	DUM_Harboe	1	95.89446	4.69634	20.42	<.0001
DUM_IC_Companys	DUM_IC Companys	1	102.00080	4.67480	21.82	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	96.16857	4.55520	21.11	<.0001
DUM___K_	DUM_Ø#K#	1	100.72633	4.34168	23.20	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	95.76261	4.92773	19.43	<.0001
DUM_Hart	DUM_Hart	1	87.26536	4.54294	19.21	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	113.04166	4.39144	25.74	<.0001
DUM_DFDS	DUM_DFDS	1	94.97191	4.58943	20.69	<.0001
DUM_FE_Bording	DUM_FE Bording	1	94.69405	5.45009	17.37	<.0001
DUM_FLSmith	DUM_FLSmith	1	96.33925	4.61614	20.87	<.0001
DUM_Fl_gger	DUM_Flügger	1	100.24277	4.50082	22.27	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	89.09519	5.03702	17.69	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	95.10922	4.53029	20.99	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	99.62245	4.71077	21.15	<.0001
DUM_United_Plantations	DUM_United Plantations	1	99.16820	4.36508	22.72	<.0001
DUM_DLH	DUM_DLH	1	91.01785	4.54940	20.01	<.0001
DUM_Novozymes	DUM_Novozymes	1	103.53566	4.70102	22.02	<.0001
DUM_DSV	DUM_DSV	1	98.54155	4.67609	21.07	<.0001
DUM_H_H	DUM_H+H	1	91.53749	4.72410	19.38	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	100.44572	4.69849	21.38	<.0001
DUM_Rockwool	DUM_Rockwool	1	99.32683	4.53444	21.90	<.0001
DUM_SKAKO	DUM_SKAKO	1	88.97266	7.20131	12.36	<.0001
DUM_Solar	DUM_Solar	1	95.24151	4.82697	19.73	<.0001
DUM_2004Q2	DUM_2004Q2	1	-0.06052	5.35047	-0.01	0.9910
DUM_2004Q3	DUM_2004Q3	1	-0.54951	5.28546	-0.10	0.9172
DUM_2004Q4	DUM_2004Q4	1	-2.59500	5.08977	-0.51	0.6103
DUM_2005Q1	DUM_2005Q1	1	-3.16761	5.13060	-0.62	0.5371
DUM_2005Q2	DUM_2005Q2	1	-1.06071	5.08713	-0.21	0.8349
DUM_2005Q3	DUM_2005Q3	1	-0.25285	5.13523	-0.05	0.9607
DUM_2005Q4	DUM_2005Q4	1	3.10909	4.82941	0.64	0.5199
DUM_2006Q1	DUM_2006Q1	1	1.35279	4.88742	0.28	0.7820
DUM_2006Q2	DUM_2006Q2	1	6.55763	4.88963	1.34	0.1802
DUM_2006Q3	DUM_2006Q3	1	6.95164	4.89191	1.42	0.1557
DUM_2006Q4	DUM_2006Q4	1	-0.38667	4.81169	-0.08	0.9360
DUM_2007Q1	DUM_2007Q1	1	-0.03131	4.89420	-0.01	0.9949
DUM_2007Q2	DUM_2007Q2	1	-0.37236	4.97256	-0.07	0.9403
DUM_2007Q3	DUM_2007Q3	1	-0.29110	4.86739	-0.06	0.9523
DUM_2007Q4	DUM_2007Q4	1	1.46558	4.84777	0.30	0.7625
DUM_2008Q1	DUM_2008Q1	1	1.55375	4.80793	0.32	0.7466
DUM_2008Q2	DUM_2008Q2	1	2.73910	4.81275	0.57	0.5694
DUM_2008Q3	DUM_2008Q3	1	2.64096	4.81417	0.55	0.5834
DUM_2008Q4	DUM_2008Q4	1	0.41113	4.84489	0.08	0.9324
DUM_2009Q1	DUM_2009Q1	1	-0.13593	4.81304	-0.03	0.9775
DUM_2009Q2	DUM_2009Q2	1	-4.37245	4.81040	-0.91	0.3636
DUM_2009Q3	DUM_2009Q3	1	-7.19003	4.81501	-1.49	0.1357
DUM_2009Q4	DUM_2009Q4	1	-11.69157	4.84157	-2.41	0.0159
DUM_2010Q1	DUM_2010Q1	1	-13.41971	4.81312	-2.79	0.0054
DUM_2010Q2	DUM_2010Q2	1	-5.49056	4.81043	-1.14	0.2540
DUM_2010Q3	DUM_2010Q3	1	-3.27501	4.86695	-0.67	0.5012
DUM_2010Q4	DUM_2010Q4	1	-2.82278	4.83955	-0.58	0.5599
DUM_2011Q1	DUM_2011Q1	1	-2.72177	4.84076	-0.56	0.5741
DUM_2011Q2	DUM_2011Q2	1	-0.52542	4.83812	-0.11	0.9135
DUM_2011Q3	DUM_2011Q3	1	-3.06971	4.93944	-0.62	0.5345
DUM_2011Q4	DUM_2011Q4	1	-2.74302	4.86711	-0.56	0.5732

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-2.53416	4.84128	-0.52	0.6008

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA_STD ROA_STD

Number of Observations Read	1090
Number of Observations Used	949
Number of Observations with Missing Values	141

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	82203	1264.66386	7.22	<.0001
Error	883	154687	175.18346		
Corrected Total	948	236890			

Root MSE	13.23569	R-Square	0.3470
Dependent Mean	7.20448	Adj R-Sq	0.2989
Coeff Var	183.71472		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	45.23657	4.31028	10.50	<.0001
Quick_ratio	Quick ratio	1	0.04044	0.22073	0.18	0.8547
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-32.50809	3.45442	-9.41	<.0001
DUM_Genmab	DUM_Genmab	1	-34.38438	3.40831	-10.09	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-35.80892	3.64038	-9.84	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-39.92153	3.63587	-10.98	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-30.00815	3.64509	-8.23	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-36.59729	3.61455	-10.13	<.0001
DUM_Ossur	DUM_Ossur	1	-38.85018	3.70821	-10.48	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-34.07124	3.96837	-8.59	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-40.70410	3.69452	-11.02	<.0001
DUM_Harboe	DUM_Harboe	1	-39.26563	3.76924	-10.42	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-36.68553	3.75196	-9.78	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-36.76629	3.65597	-10.06	<.0001
DUM___K_	DUM_Ø#K#	1	-5.67025	3.48460	-1.63	0.1040
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-38.10689	3.95495	-9.64	<.0001
DUM_Hart	DUM_Hart	1	-32.36302	3.64613	-8.88	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-21.50100	3.52453	-6.10	<.0001
DUM_DFDS	DUM_DFDS	1	-40.26641	3.68343	-10.93	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-37.98915	4.37420	-8.68	<.0001
DUM_FLSmith	DUM_FLSmith	1	-36.03903	3.70487	-9.73	<.0001
DUM_Fl_gger	DUM_Flügger	1	-38.62113	3.61232	-10.69	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-35.21769	4.04267	-8.71	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-39.67798	3.63598	-10.91	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-31.02820	3.78082	-8.21	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-38.61301	3.50338	-11.02	<.0001
DUM_DLH	DUM_DLH	1	-32.81232	3.65131	-8.99	<.0001
DUM_Novozymes	DUM_Novozymes	1	-40.12321	3.77300	-10.63	<.0001
DUM_DSV	DUM_DSV	1	-39.14683	3.75299	-10.43	<.0001
DUM_H_H	DUM_H+H	1	-32.55044	3.79152	-8.59	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-39.91666	3.77097	-10.59	<.0001
DUM_Rockwool	DUM_Rockwool	1	-37.48138	3.63930	-10.30	<.0001
DUM_SKAKO	DUM_SKAKO	1	-32.57644	5.77971	-5.64	<.0001
DUM_Solar	DUM_Solar	1	-39.52312	3.87409	-10.20	<.0001
DUM_2004Q2	DUM_2004Q2	1	0.35359	4.29424	0.08	0.9344
DUM_2004Q3	DUM_2004Q3	1	-1.52738	4.24207	-0.36	0.7189
DUM_2004Q4	DUM_2004Q4	1	-4.57304	4.08501	-1.12	0.2632
DUM_2005Q1	DUM_2005Q1	1	-5.46794	4.11778	-1.33	0.1846
DUM_2005Q2	DUM_2005Q2	1	-4.32299	4.08289	-1.06	0.2900
DUM_2005Q3	DUM_2005Q3	1	-3.87774	4.12149	-0.94	0.3470
DUM_2005Q4	DUM_2005Q4	1	-3.33059	3.87604	-0.86	0.3904
DUM_2006Q1	DUM_2006Q1	1	-4.41793	3.92260	-1.13	0.2604
DUM_2006Q2	DUM_2006Q2	1	-0.31470	3.92437	-0.08	0.9361
DUM_2006Q3	DUM_2006Q3	1	-0.71373	3.92621	-0.18	0.8558
DUM_2006Q4	DUM_2006Q4	1	-6.12885	3.86182	-1.59	0.1129
DUM_2007Q1	DUM_2007Q1	1	-6.48005	3.92804	-1.65	0.0994
DUM_2007Q2	DUM_2007Q2	1	-4.93376	3.99093	-1.24	0.2167
DUM_2007Q3	DUM_2007Q3	1	-4.36146	3.90653	-1.12	0.2645
DUM_2007Q4	DUM_2007Q4	1	-5.45420	3.89078	-1.40	0.1613
DUM_2008Q1	DUM_2008Q1	1	-4.74938	3.85880	-1.23	0.2187
DUM_2008Q2	DUM_2008Q2	1	-5.75197	3.86267	-1.49	0.1368
DUM_2008Q3	DUM_2008Q3	1	-5.83800	3.86381	-1.51	0.1312
DUM_2008Q4	DUM_2008Q4	1	-6.87869	3.88847	-1.77	0.0772
DUM_2009Q1	DUM_2009Q1	1	-5.64041	3.86290	-1.46	0.1446
DUM_2009Q2	DUM_2009Q2	1	-6.03767	3.86078	-1.56	0.1182
DUM_2009Q3	DUM_2009Q3	1	-2.81828	3.86449	-0.73	0.4660
DUM_2009Q4	DUM_2009Q4	1	0.90257	3.88580	0.23	0.8164
DUM_2010Q1	DUM_2010Q1	1	3.33264	3.86297	0.86	0.3885
DUM_2010Q2	DUM_2010Q2	1	-4.93678	3.86081	-1.28	0.2013
DUM_2010Q3	DUM_2010Q3	1	-5.31352	3.90617	-1.36	0.1741
DUM_2010Q4	DUM_2010Q4	1	-5.32752	3.88418	-1.37	0.1705
DUM_2011Q1	DUM_2011Q1	1	-4.48248	3.88515	-1.15	0.2489
DUM_2011Q2	DUM_2011Q2	1	-5.80421	3.88303	-1.49	0.1353
DUM_2011Q3	DUM_2011Q3	1	-4.88837	3.96435	-1.23	0.2179
DUM_2011Q4	DUM_2011Q4	1	-4.19341	3.90630	-1.07	0.2833

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-3.70402	3.88557	-0.95	0.3407

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: OM OM

Number of Observations Read	1090
Number of Observations Used	978
Number of Observations with Missing Values	112

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	12648254264	194588527	3.89	<.0001
Error	912	45618341971	50020112		
Corrected Total	977	58266596234			

Root MSE	7072.48979	R-Square	0.2171
Dependent Mean	-582.30704	Adj R-Sq	0.1613
Coeff Var	-1214.56367		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-18407	2228.27405	-8.26	<.0001
Quick_ratio	Quick ratio	1	-142.50877	124.41789	-1.15	0.2523
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	19564	1925.16353	10.16	<.0001
DUM_Genmab	DUM_Genmab	1	19709	1973.76464	9.99	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	19384	2080.59835	9.32	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	19466	2054.70695	9.47	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	19332	2079.87050	9.29	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	19507	2040.23162	9.56	<.0001
DUM_Ossur	DUM_Ossur	1	19460	2076.86430	9.37	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	19681	2162.21586	9.10	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	19357	2093.93171	9.24	<.0001
DUM_Harboe	DUM_Harboe	1	19477	2090.66390	9.32	<.0001
DUM_IC_Companys	DUM_IC Companys	1	19393	2075.78905	9.34	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	19417	2068.23552	9.39	<.0001
DUM___K_	DUM_Ø#K#	1	20662	1869.49050	11.05	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	19483	2151.44992	9.06	<.0001
DUM_Hart	DUM_Hart	1	19430	2061.62245	9.42	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	19917	1908.95161	10.43	<.0001
DUM_DFDS	DUM_DFDS	1	19409	2081.51495	9.32	<.0001
DUM_FE_Bording	DUM_FE Bording	1	19272	2401.00086	8.03	<.0001
DUM_FLSmith	DUM_FLSmith	1	19429	2081.24892	9.34	<.0001
DUM_Fl_gger	DUM_Flügger	1	19492	2038.71567	9.56	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	19549	2150.02393	9.09	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	19447	2054.77664	9.46	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	19372	2075.61404	9.33	<.0001
DUM_United_Plantations	DUM_United Plantations	1	19894	1937.67428	10.27	<.0001
DUM_DLH	DUM_DLH	1	19416	2065.10628	9.40	<.0001
DUM_Novozymes	DUM_Novozymes	1	19694	2166.88879	9.09	<.0001
DUM_DSV	DUM_DSV	1	19387	2101.83929	9.22	<.0001
DUM_H_H	DUM_H+H	1	19408	2088.25909	9.29	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	19481	2086.55776	9.34	<.0001
DUM_Rockwool	DUM_Rockwool	1	19447	2057.02265	9.45	<.0001
DUM_SKAKO	DUM_SKAKO	1	19620	3159.83566	6.21	<.0001
DUM_Solar	DUM_Solar	1	19474	2178.19925	8.94	<.0001
DUM_2004Q2	DUM_2004Q2	1	23.33711	2044.19674	0.01	0.9909
DUM_2004Q3	DUM_2004Q3	1	-3.47373	2041.88538	-0.00	0.9986
DUM_2004Q4	DUM_2004Q4	1	-186.92496	2010.20573	-0.09	0.9259
DUM_2005Q1	DUM_2005Q1	1	-215.88490	1970.11756	-0.11	0.9128
DUM_2005Q2	DUM_2005Q2	1	-324.41762	1957.15126	-0.17	0.8684
DUM_2005Q3	DUM_2005Q3	1	-169.41986	1990.66719	-0.09	0.9322
DUM_2005Q4	DUM_2005Q4	1	-523.71517	1932.14071	-0.27	0.7864
DUM_2006Q1	DUM_2006Q1	1	-112.17742	1959.76464	-0.06	0.9544
DUM_2006Q2	DUM_2006Q2	1	-6514.92283	1941.82992	-3.36	0.0008
DUM_2006Q3	DUM_2006Q3	1	-602.00690	1940.78328	-0.31	0.7565
DUM_2006Q4	DUM_2006Q4	1	-3160.81018	1931.85092	-1.64	0.1022
DUM_2007Q1	DUM_2007Q1	1	-3103.36443	1927.51398	-1.61	0.1077
DUM_2007Q2	DUM_2007Q2	1	-926.38431	1990.63876	-0.47	0.6418
DUM_2007Q3	DUM_2007Q3	1	-968.70911	1942.67276	-0.50	0.6181
DUM_2007Q4	DUM_2007Q4	1	-304.23565	1931.58783	-0.16	0.8749
DUM_2008Q1	DUM_2008Q1	1	-379.58066	1915.77483	-0.20	0.8430
DUM_2008Q2	DUM_2008Q2	1	-983.93839	1943.35506	-0.51	0.6128
DUM_2008Q3	DUM_2008Q3	1	-381.13308	1917.29765	-0.20	0.8425
DUM_2008Q4	DUM_2008Q4	1	-977.85187	1930.88957	-0.51	0.6127
DUM_2009Q1	DUM_2009Q1	1	-410.20741	1916.98975	-0.21	0.8306
DUM_2009Q2	DUM_2009Q2	1	-966.22899	1929.48720	-0.50	0.6167
DUM_2009Q3	DUM_2009Q3	1	-512.29881	1917.53277	-0.27	0.7894
DUM_2009Q4	DUM_2009Q4	1	-960.77454	1931.17124	-0.50	0.6190
DUM_2010Q1	DUM_2010Q1	1	-421.15186	1917.01165	-0.22	0.8262
DUM_2010Q2	DUM_2010Q2	1	-382.99456	1916.32972	-0.20	0.8416
DUM_2010Q3	DUM_2010Q3	1	-359.79729	1958.21594	-0.18	0.8543
DUM_2010Q4	DUM_2010Q4	1	-1182.72614	1944.83673	-0.61	0.5432
DUM_2011Q1	DUM_2011Q1	1	-2203.63158	1930.94341	-1.14	0.2541
DUM_2011Q2	DUM_2011Q2	1	-340.40912	1916.27260	-0.18	0.8590
DUM_2011Q3	DUM_2011Q3	1	-1776.90707	1960.10736	-0.91	0.3649
DUM_2011Q4	DUM_2011Q4	1	-287.43146	1943.41947	-0.15	0.8825

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-452.64157	1945.63967	-0.23	0.8161

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: OM_SDT OM_SDT

Number of Observations Read	1090
Number of Observations Used	978
Number of Observations with Missing Values	112

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	21034242096	323603725	11.53	<.0001
Error	912	25607260515	28078137		
Corrected Total	977	46641502611			

Root MSE	5298.88069	R-Square	0.4510
Dependent Mean	793.21133	Adj R-Sq	0.4118
Coeff Var	668.02887		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	26084	1669.47690	15.62	<.0001
Quick_ratio	Quick ratio	1	155.26398	93.21690	1.67	0.0961
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-26735	1442.37916	-18.54	<.0001
DUM_Genmab	DUM_Genmab	1	-26784	1478.79229	-18.11	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-26496	1558.83469	-17.00	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-26531	1539.43622	-17.23	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-26641	1558.28936	-17.10	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-26573	1528.59096	-17.38	<.0001
DUM_Ossur	DUM_Ossur	1	-26556	1556.03704	-17.07	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-26653	1619.98450	-16.45	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-26425	1568.82436	-16.84	<.0001
DUM_Harboe	DUM_Harboe	1	-26524	1566.37604	-16.93	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-26467	1555.23144	-17.02	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-26494	1549.57216	-17.10	<.0001
DUM___K_	DUM_Ø#K#	1	-27844	1400.66757	-19.88	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-26497	1611.91840	-16.44	<.0001
DUM_Hart	DUM_Hart	1	-26514	1544.61749	-17.17	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-27036	1430.23279	-18.90	<.0001
DUM_DFDS	DUM_DFDS	1	-26489	1559.52143	-16.99	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-26346	1798.88801	-14.65	<.0001
DUM_FLSmith	DUM_FLSmith	1	-26508	1559.32211	-17.00	<.0001
DUM_Fl_gger	DUM_Flügger	1	-26574	1527.45517	-17.40	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-26580	1610.85002	-16.50	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-26536	1539.48843	-17.24	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-26451	1555.10033	-17.01	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-26980	1451.75252	-18.58	<.0001
DUM_DLH	DUM_DLH	1	-26502	1547.22765	-17.13	<.0001
DUM_Novozymes	DUM_Novozymes	1	-26565	1623.48558	-16.36	<.0001
DUM_DSV	DUM_DSV	1	-26451	1574.74891	-16.80	<.0001
DUM_H_H	DUM_H+H	1	-26481	1564.57430	-16.93	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-26514	1563.29962	-16.96	<.0001
DUM_Rockwool	DUM_Rockwool	1	-26527	1541.17120	-17.21	<.0001
DUM_SKAKO	DUM_SKAKO	1	-26526	2367.42542	-11.20	<.0001
DUM_Solar	DUM_Solar	1	-26517	1631.95965	-16.25	<.0001
DUM_2004Q2	DUM_2004Q2	1	-94.34041	1531.56172	-0.06	0.9509
DUM_2004Q3	DUM_2004Q3	1	-72.95356	1529.82999	-0.05	0.9620
DUM_2004Q4	DUM_2004Q4	1	35.09273	1506.09483	0.02	0.9814
DUM_2005Q1	DUM_2005Q1	1	-15.39299	1476.05980	-0.01	0.9917
DUM_2005Q2	DUM_2005Q2	1	-226.04907	1466.34514	-0.15	0.8775
DUM_2005Q3	DUM_2005Q3	1	-291.29666	1491.45608	-0.20	0.8452
DUM_2005Q4	DUM_2005Q4	1	-336.49649	1447.60663	-0.23	0.8162
DUM_2006Q1	DUM_2006Q1	1	-218.76631	1468.30314	-0.15	0.8816
DUM_2006Q2	DUM_2006Q2	1	4972.45663	1454.86602	3.42	0.0007
DUM_2006Q3	DUM_2006Q3	1	-338.06839	1454.08185	-0.23	0.8162
DUM_2006Q4	DUM_2006Q4	1	1635.09796	1447.38951	1.13	0.2589
DUM_2007Q1	DUM_2007Q1	1	1604.85615	1444.14017	1.11	0.2667
DUM_2007Q2	DUM_2007Q2	1	317.85854	1491.43478	0.21	0.8313
DUM_2007Q3	DUM_2007Q3	1	346.48201	1455.49749	0.24	0.8119
DUM_2007Q4	DUM_2007Q4	1	131.34205	1447.19240	0.09	0.9277
DUM_2008Q1	DUM_2008Q1	1	75.25771	1435.34491	0.05	0.9582
DUM_2008Q2	DUM_2008Q2	1	360.69756	1456.00869	0.25	0.8044
DUM_2008Q3	DUM_2008Q3	1	164.50798	1436.48585	0.11	0.9088
DUM_2008Q4	DUM_2008Q4	1	357.84961	1446.66925	0.25	0.8047
DUM_2009Q1	DUM_2009Q1	1	169.29326	1436.25516	0.12	0.9062
DUM_2009Q2	DUM_2009Q2	1	364.99674	1445.61855	0.25	0.8007
DUM_2009Q3	DUM_2009Q3	1	30.34502	1436.66201	0.02	0.9832
DUM_2009Q4	DUM_2009Q4	1	344.18882	1446.88027	0.24	0.8120
DUM_2010Q1	DUM_2010Q1	1	137.01269	1436.27157	0.10	0.9240
DUM_2010Q2	DUM_2010Q2	1	99.82749	1435.76065	0.07	0.9446
DUM_2010Q3	DUM_2010Q3	1	34.03638	1467.14282	0.02	0.9815
DUM_2010Q4	DUM_2010Q4	1	-345.87155	1457.11879	-0.24	0.8124
DUM_2011Q1	DUM_2011Q1	1	703.13518	1446.70958	0.49	0.6271
DUM_2011Q2	DUM_2011Q2	1	140.30065	1435.71785	0.10	0.9222
DUM_2011Q3	DUM_2011Q3	1	229.24480	1468.55992	0.16	0.8760
DUM_2011Q4	DUM_2011Q4	1	138.70855	1456.05695	0.10	0.9241

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-0.26223	1457.72038	-0.00	0.9999

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: REV_GROWTH REV_GROWTH

Number of Observations Read	1090
Number of Observations Used	967
Number of Observations with Missing Values	123

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	333430921	5129706	2.31	<.0001
Error	901	2004339215	2224572		
Corrected Total	966	2337770137			

Root MSE	1491.49986	**R-Square**	0.1426
Dependent Mean	89.74908	**Adj R-Sq**	0.0808
Coeff Var	1661.85527		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	4114.74051	494.57299	8.32	<.0001
Quick_ratio	Quick ratio	1	-148.88316	27.37287	-5.44	<.0001
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-3513.07648	424.30658	-8.28	<.0001
DUM_Genmab	DUM_Genmab	1	-3653.14555	456.65065	-8.00	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-4039.06706	462.93125	-8.72	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-4048.68359	454.84059	-8.90	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-3721.97633	461.87261	-8.06	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-4003.17025	451.47693	-8.87	<.0001
DUM_Ossur	DUM_Ossur	1	-4010.02641	459.26434	-8.73	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-4058.88283	476.76248	-8.51	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-4148.11675	463.91695	-8.94	<.0001
DUM_Harboe	DUM_Harboe	1	-4090.59994	464.96381	-8.80	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-4112.22358	469.68481	-8.76	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-4087.08388	457.97697	-8.92	<.0001
DUM___K_	DUM_Ø#K#	1	-2808.85681	410.27007	-6.85	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-4154.87445	479.07107	-8.67	<.0001
DUM_Hart	DUM_Hart	1	-4073.05372	456.44467	-8.92	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-3522.40000	420.37488	-8.38	<.0001
DUM_DFDS	DUM_DFDS	1	-4083.34494	460.69684	-8.86	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-4101.26011	526.50295	-7.79	<.0001
DUM_FLSmith	DUM_FLSmith	1	-4087.31213	460.73768	-8.87	<.0001
DUM_Fl_gger	DUM_Flügger	1	-4006.31896	451.12417	-8.88	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-4106.15261	467.99003	-8.77	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-4044.24047	454.85676	-8.89	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-4037.93922	461.80184	-8.74	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-3641.60228	425.43402	-8.56	<.0001
DUM_DLH	DUM_DLH	1	-4058.66986	457.25210	-8.88	<.0001
DUM_Novozymes	DUM_Novozymes	1	-4044.74072	461.54076	-8.76	<.0001
DUM_DSV	DUM_DSV	1	-4137.21949	465.40367	-8.89	<.0001
DUM_H_H	DUM_H+H	1	-4113.89419	462.25945	-8.90	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-4073.95842	464.01441	-8.78	<.0001
DUM_Rockwool	DUM_Rockwool	1	-4053.66305	455.37792	-8.90	<.0001
DUM_SKAKO	DUM_SKAKO	1	-4057.79610	680.55618	-5.96	<.0001
DUM_Solar	DUM_Solar	1	-4047.87006	484.17981	-8.36	<.0001
DUM_2004Q2	DUM_2004Q2	1	55.72191	445.27169	0.13	0.9004
DUM_2004Q3	DUM_2004Q3	1	8.02676	439.87757	0.02	0.9854
DUM_2004Q4	DUM_2004Q4	1	-50.41289	436.88525	-0.12	0.9082
DUM_2005Q1	DUM_2005Q1	1	-15.48211	420.44033	-0.04	0.9706
DUM_2005Q2	DUM_2005Q2	1	80.76110	420.79798	0.19	0.8478
DUM_2005Q3	DUM_2005Q3	1	119.13085	420.84408	0.28	0.7772
DUM_2005Q4	DUM_2005Q4	1	90.26635	419.06351	0.22	0.8295
DUM_2006Q1	DUM_2006Q1	1	130.36130	421.27573	0.31	0.7571
DUM_2006Q2	DUM_2006Q2	1	73.38044	414.61538	0.18	0.8596
DUM_2006Q3	DUM_2006Q3	1	-0.20789	414.35413	-0.00	0.9996
DUM_2006Q4	DUM_2006Q4	1	-22.81649	415.62670	-0.05	0.9562
DUM_2007Q1	DUM_2007Q1	1	-5.39572	411.59255	-0.01	0.9895
DUM_2007Q2	DUM_2007Q2	1	91.38291	424.80271	0.22	0.8297
DUM_2007Q3	DUM_2007Q3	1	62.09562	414.77622	0.15	0.8810
DUM_2007Q4	DUM_2007Q4	1	632.62904	415.84280	1.52	0.1285
DUM_2008Q1	DUM_2008Q1	1	71.62900	409.14824	0.18	0.8611
DUM_2008Q2	DUM_2008Q2	1	29.86236	412.12832	0.07	0.9423
DUM_2008Q3	DUM_2008Q3	1	31.43373	412.22138	0.08	0.9392
DUM_2008Q4	DUM_2008Q4	1	52.58142	412.32509	0.13	0.8986
DUM_2009Q1	DUM_2009Q1	1	-108.22697	409.40937	-0.26	0.7916
DUM_2009Q2	DUM_2009Q2	1	34.00677	412.03429	0.08	0.9342
DUM_2009Q3	DUM_2009Q3	1	-127.96599	409.52768	-0.31	0.7548
DUM_2009Q4	DUM_2009Q4	1	21.73356	412.38369	0.05	0.9580
DUM_2010Q1	DUM_2010Q1	1	-109.05476	409.41413	-0.27	0.7900
DUM_2010Q2	DUM_2010Q2	1	50.17784	412.18839	0.12	0.9031
DUM_2010Q3	DUM_2010Q3	1	-68.14761	415.02085	-0.16	0.8696
DUM_2010Q4	DUM_2010Q4	1	92.66482	412.62798	0.22	0.8224
DUM_2011Q1	DUM_2011Q1	1	-88.51459	412.33819	-0.21	0.8301
DUM_2011Q2	DUM_2011Q2	1	-12.46435	409.25434	-0.03	0.9757
DUM_2011Q3	DUM_2011Q3	1	-119.30523	421.64122	-0.28	0.7773
DUM_2011Q4	DUM_2011Q4	1	1401.04027	414.92878	3.38	0.0008

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-53.86809	415.41023	-0.13	0.8969

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: REV_GROWTH_SDT REV_GROWTH_SDT

Number of Observations Read	1090
Number of Observations Used	967
Number of Observations with Missing Values	123

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	641626421	9871176	6.01	<.0001
Error	901	1479938549	1642551		
Corrected Total	966	2121564970			

Root MSE	1281.62050	R-Square	0.3024
Dependent Mean	152.73593	Adj R-Sq	0.2521
Coeff Var	839.10870		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	5755.25659	424.97817	13.54	<.0001
Quick_ratio	Quick ratio	1	-103.89119	23.52104	-4.42	<.0001
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-5202.49322	364.59944	-14.27	<.0001
DUM_Genmab	DUM_Genmab	1	-5339.34741	392.39215	-13.61	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-5684.13266	397.78896	-14.29	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-5705.65310	390.83679	-14.60	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-5406.01215	396.87929	-13.62	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-5682.77795	387.94646	-14.65	<.0001
DUM_Ossur	DUM_Ossur	1	-5674.96976	394.63805	-14.38	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-5701.44434	409.67391	-13.92	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-5777.88760	398.63596	-14.49	<.0001
DUM_Harboe	DUM_Harboe	1	-5733.03151	399.53551	-14.35	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-5752.18948	403.59218	-14.25	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-5732.20540	393.53184	-14.57	<.0001
DUM___K_	DUM_Ø#K#	1	-4826.15771	352.53810	-13.69	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-5775.33878	411.65763	-14.03	<.0001
DUM_Hart	DUM_Hart	1	-5720.34895	392.21516	-14.58	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-5303.13964	361.22099	-14.68	<.0001
DUM_DFDS	DUM_DFDS	1	-5726.14470	395.86897	-14.46	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-5721.00886	452.41505	-12.65	<.0001
DUM_FLSmith	DUM_FLSmith	1	-5721.03848	395.90406	-14.45	<.0001
DUM_Fl_gger	DUM_Flügger	1	-5679.16105	387.64334	-14.65	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-5731.60187	402.13589	-14.25	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-5700.24576	390.85069	-14.58	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-5696.29782	396.81848	-14.35	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-5415.82002	365.56823	-14.81	<.0001
DUM_DLH	DUM_DLH	1	-5672.54416	392.90896	-14.44	<.0001
DUM_Novozymes	DUM_Novozymes	1	-5709.43133	396.59414	-14.40	<.0001
DUM_DSV	DUM_DSV	1	-5767.85094	399.91347	-14.42	<.0001
DUM_H_H	DUM_H+H	1	-5742.32893	397.21170	-14.46	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-5727.13638	398.71971	-14.36	<.0001
DUM_Rockwool	DUM_Rockwool	1	-5710.01112	391.29852	-14.59	<.0001
DUM_SKAKO	DUM_SKAKO	1	-5686.15244	584.79037	-9.72	<.0001
DUM_Solar	DUM_Solar	1	-5700.69801	416.04749	-13.70	<.0001
DUM_2004Q2	DUM_2004Q2	1	33.97251	382.61440	0.09	0.9293
DUM_2004Q3	DUM_2004Q3	1	17.56556	377.97932	0.05	0.9629
DUM_2004Q4	DUM_2004Q4	1	-31.07151	375.40808	-0.08	0.9341
DUM_2005Q1	DUM_2005Q1	1	-13.60771	361.27724	-0.04	0.9700
DUM_2005Q2	DUM_2005Q2	1	61.04642	361.58456	0.17	0.8660
DUM_2005Q3	DUM_2005Q3	1	82.31468	361.62417	0.23	0.8200
DUM_2005Q4	DUM_2005Q4	1	72.07012	360.09416	0.20	0.8414
DUM_2006Q1	DUM_2006Q1	1	96.64596	361.99508	0.27	0.7895
DUM_2006Q2	DUM_2006Q2	1	56.97831	356.27195	0.16	0.8730
DUM_2006Q3	DUM_2006Q3	1	4.04789	356.04747	0.01	0.9909
DUM_2006Q4	DUM_2006Q4	1	-6.17397	357.14096	-0.02	0.9862
DUM_2007Q1	DUM_2007Q1	1	-10.43850	353.67449	-0.03	0.9765
DUM_2007Q2	DUM_2007Q2	1	56.44517	365.02576	0.15	0.8771
DUM_2007Q3	DUM_2007Q3	1	33.15418	356.41017	0.09	0.9259
DUM_2007Q4	DUM_2007Q4	1	434.17536	357.32666	1.22	0.2247
DUM_2008Q1	DUM_2008Q1	1	-99.10881	351.57414	-0.28	0.7781
DUM_2008Q2	DUM_2008Q2	1	24.46983	354.13486	0.07	0.9449
DUM_2008Q3	DUM_2008Q3	1	12.99870	354.21484	0.04	0.9707
DUM_2008Q4	DUM_2008Q4	1	56.28581	354.30395	0.16	0.8738
DUM_2009Q1	DUM_2009Q1	1	-60.80821	351.79852	-0.17	0.8628
DUM_2009Q2	DUM_2009Q2	1	45.12838	354.05407	0.13	0.8986
DUM_2009Q3	DUM_2009Q3	1	-61.79563	351.90018	-0.18	0.8606
DUM_2009Q4	DUM_2009Q4	1	40.22676	354.35430	0.11	0.9096
DUM_2010Q1	DUM_2010Q1	1	-62.18239	351.80261	-0.18	0.8597
DUM_2010Q2	DUM_2010Q2	1	28.47157	354.18649	0.08	0.9359
DUM_2010Q3	DUM_2010Q3	1	-65.15352	356.62037	-0.18	0.8551
DUM_2010Q4	DUM_2010Q4	1	60.04917	354.56421	0.17	0.8656
DUM_2011Q1	DUM_2011Q1	1	-67.05611	354.31520	-0.19	0.8499
DUM_2011Q2	DUM_2011Q2	1	-103.73757	351.66531	-0.29	0.7681
DUM_2011Q3	DUM_2011Q3	1	-82.33383	362.30914	-0.23	0.8203
DUM_2011Q4	DUM_2011Q4	1	1222.16663	356.54126	3.43	0.0006

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-89.03361	356.95496	-0.25	0.8031

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA ROA

Number of Observations Read	1090
Number of Observations Used	997
Number of Observations with Missing Values	93

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	332024	5108.06157	18.21	<.0001
Error	931	261118	280.47043		
Corrected Total	996	593142			

Root MSE	16.74725	R-Square	0.5598
Dependent Mean	2.19630	Adj R-Sq	0.5290
Coeff Var	762.52279		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-73.95331	4.79578	-15.42	<.0001
Debt_Equity	Debt/Equity	1	-2.28602	0.64955	-3.52	0.0005
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	66.63911	4.31883	15.43	<.0001
DUM_Genmab	DUM_Genmab	1	52.84558	4.32668	12.21	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	84.47680	4.32374	19.54	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	91.78097	4.33415	21.18	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	57.52019	4.47731	12.85	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	96.06602	4.30214	22.33	<.0001
DUM_Ossur	DUM_Ossur	1	85.62270	4.51342	18.97	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	81.86136	4.75544	17.21	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	83.84789	4.52452	18.53	<.0001
DUM_Harboe	DUM_Harboe	1	83.65516	4.54010	18.43	<.0001
DUM_IC_Companys	DUM_IC Companys	1	91.62380	4.68317	19.56	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	86.86523	4.66987	18.60	<.0001
DUM___K_	DUM_Ø#K#	1	109.36265	4.44100	24.63	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	82.93392	4.66337	17.78	<.0001
DUM_Hart	DUM_Hart	1	76.62012	4.50161	17.02	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	107.89046	4.41801	24.42	<.0001
DUM_DFDS	DUM_DFDS	1	83.71542	4.51250	18.55	<.0001
DUM_FE_Bording	DUM_FE Bording	1	83.27647	4.83794	17.21	<.0001
DUM_FLSmith	DUM_FLSmith	1	87.57390	4.79445	18.27	<.0001
DUM_Fl_gger	DUM_Flügger	1	87.55996	4.30451	20.34	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	76.85385	4.90031	15.68	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	84.15590	4.44924	18.91	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	88.53943	4.63635	19.10	<.0001
DUM_United_Plantations	DUM_United Plantations	1	92.34405	4.35404	21.21	<.0001
DUM_DLH	DUM_DLH	1	80.99970	4.57697	17.70	<.0001
DUM_Novozymes	DUM_Novozymes	1	92.27918	4.58575	20.12	<.0001
DUM_DSV	DUM_DSV	1	89.66128	4.90386	18.28	<.0001
DUM_H_H	DUM_H+H	1	79.31794	4.59041	17.28	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	89.93544	4.65756	19.31	<.0001
DUM_Rockwool	DUM_Rockwool	1	86.05700	4.31424	19.95	<.0001
DUM_SKAKO	DUM_SKAKO	1	76.89699	4.42926	17.36	<.0001
DUM_Solar	DUM_Solar	1	83.84577	4.43968	18.89	<.0001
DUM_2004Q2	DUM_2004Q2	1	-0.07563	5.04961	-0.01	0.9881
DUM_2004Q3	DUM_2004Q3	1	-0.84528	4.99702	-0.17	0.8657
DUM_2004Q4	DUM_2004Q4	1	-3.68524	4.95647	-0.74	0.4574
DUM_2005Q1	DUM_2005Q1	1	-3.06122	4.86585	-0.63	0.5294
DUM_2005Q2	DUM_2005Q2	1	-0.78946	4.82917	-0.16	0.8702
DUM_2005Q3	DUM_2005Q3	1	1.52619	4.86937	0.31	0.7540
DUM_2005Q4	DUM_2005Q4	1	3.37880	4.68288	0.72	0.4708
DUM_2006Q1	DUM_2006Q1	1	2.62840	4.65387	0.56	0.5724
DUM_2006Q2	DUM_2006Q2	1	6.13445	4.65708	1.32	0.1881
DUM_2006Q3	DUM_2006Q3	1	5.37171	4.65704	1.15	0.2490
DUM_2006Q4	DUM_2006Q4	1	-1.98723	4.65762	-0.43	0.6697
DUM_2007Q1	DUM_2007Q1	1	-1.19149	4.68669	-0.25	0.7994
DUM_2007Q2	DUM_2007Q2	1	-1.45276	4.72636	-0.31	0.7586
DUM_2007Q3	DUM_2007Q3	1	-1.74902	4.66064	-0.38	0.7075
DUM_2007Q4	DUM_2007Q4	1	-0.62017	4.69164	-0.13	0.8949
DUM_2008Q1	DUM_2008Q1	1	-0.41539	4.62775	-0.09	0.9285
DUM_2008Q2	DUM_2008Q2	1	0.03211	4.62733	0.01	0.9945
DUM_2008Q3	DUM_2008Q3	1	-0.31047	4.62691	-0.07	0.9465
DUM_2008Q4	DUM_2008Q4	1	-1.55325	4.69241	-0.33	0.7407
DUM_2009Q1	DUM_2009Q1	1	-3.86477	4.62963	-0.83	0.4040
DUM_2009Q2	DUM_2009Q2	1	-6.62510	4.62897	-1.43	0.1527
DUM_2009Q3	DUM_2009Q3	1	-10.15245	4.62812	-2.19	0.0285
DUM_2009Q4	DUM_2009Q4	1	-14.15144	4.68784	-3.02	0.0026
DUM_2010Q1	DUM_2010Q1	1	-16.78200	4.62750	-3.63	0.0003
DUM_2010Q2	DUM_2010Q2	1	-8.27531	4.62658	-1.79	0.0740
DUM_2010Q3	DUM_2010Q3	1	-6.32156	4.68621	-1.35	0.1777
DUM_2010Q4	DUM_2010Q4	1	-5.30196	4.68620	-1.13	0.2582
DUM_2011Q1	DUM_2011Q1	1	-6.02673	4.65742	-1.29	0.1960
DUM_2011Q2	DUM_2011Q2	1	-3.55992	4.65736	-0.76	0.4448
DUM_2011Q3	DUM_2011Q3	1	-6.40378	4.71787	-1.36	0.1750
DUM_2011Q4	DUM_2011Q4	1	-5.41389	4.71712	-1.15	0.2514

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-5.35279	4.65522	-1.15	0.2505

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: ROA_STD ROA_STD

Number of Observations Read	1090
Number of Observations Used	997
Number of Observations with Missing Values	93

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	84016	1292.55909	7.80	<.0001
Error	931	154333	165.77156		
Corrected Total	996	238350			

Root MSE	12.87523	R-Square	0.3525
Dependent Mean	7.11840	Adj R-Sq	0.3073
Coeff Var	180.87264		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	43.88332	3.68698	11.90	<.0001
Debt_Equity	Debt/Equity	1	-1.44574	0.49937	-2.90	0.0039
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-31.11081	3.32030	-9.37	<.0001
DUM_Genmab	DUM_Genmab	1	-32.82875	3.32634	-9.87	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-34.45618	3.32407	-10.37	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-38.42694	3.33208	-11.53	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-28.34272	3.44214	-8.23	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-35.57079	3.30747	-10.75	<.0001
DUM_Ossur	DUM_Ossur	1	-36.24869	3.46990	-10.45	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-32.31251	3.65596	-8.84	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-37.56885	3.47843	-10.80	<.0001
DUM_Harboe	DUM_Harboe	1	-37.40171	3.49041	-10.72	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-33.36280	3.60041	-9.27	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-32.73664	3.59018	-9.12	<.0001
DUM___K_	DUM_Ø#K#	1	-3.73105	3.41422	-1.09	0.2748
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-36.16674	3.58519	-10.09	<.0001
DUM_Hart	DUM_Hart	1	-29.36233	3.46083	-8.48	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-20.67413	3.39655	-6.09	<.0001
DUM_DFDS	DUM_DFDS	1	-37.41202	3.46920	-10.78	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-35.15551	3.71939	-9.45	<.0001
DUM_FLSmith	DUM_FLSmith	1	-31.67102	3.68596	-8.59	<.0001
DUM_Fl_gger	DUM_Flügger	1	-37.55178	3.30929	-11.35	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-33.35557	3.76735	-8.85	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-37.06115	3.42056	-10.83	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-28.30178	3.56441	-7.94	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-37.77629	3.34737	-11.29	<.0001
DUM_DLH	DUM_DLH	1	-29.31977	3.51876	-8.33	<.0001
DUM_Novozymes	DUM_Novozymes	1	-38.20301	3.52551	-10.84	<.0001
DUM_DSV	DUM_DSV	1	-34.41664	3.77007	-9.13	<.0001
DUM_H_H	DUM_H+H	1	-30.21012	3.52910	-8.56	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-36.97837	3.58072	-10.33	<.0001
DUM_Rockwool	DUM_Rockwool	1	-36.26727	3.31677	-10.93	<.0001
DUM_SKAKO	DUM_SKAKO	1	-30.74271	3.40520	-9.03	<.0001
DUM_Solar	DUM_Solar	1	-37.53661	3.41321	-11.00	<.0001
DUM_2004Q2	DUM_2004Q2	1	0.25809	3.88212	0.07	0.9470
DUM_2004Q3	DUM_2004Q3	1	-1.44351	3.84170	-0.38	0.7072
DUM_2004Q4	DUM_2004Q4	1	-4.00286	3.81051	-1.05	0.2938
DUM_2005Q1	DUM_2005Q1	1	-4.28731	3.74085	-1.15	0.2521
DUM_2005Q2	DUM_2005Q2	1	-3.37314	3.71265	-0.91	0.3638
DUM_2005Q3	DUM_2005Q3	1	-2.51257	3.74356	-0.67	0.5023
DUM_2005Q4	DUM_2005Q4	1	-2.54225	3.60018	-0.71	0.4803
DUM_2006Q1	DUM_2006Q1	1	-3.46208	3.57788	-0.97	0.3335
DUM_2006Q2	DUM_2006Q2	1	0.25851	3.58034	0.07	0.9425
DUM_2006Q3	DUM_2006Q3	1	-0.20467	3.58032	-0.06	0.9544
DUM_2006Q4	DUM_2006Q4	1	-5.13332	3.58076	-1.43	0.1520
DUM_2007Q1	DUM_2007Q1	1	-5.36934	3.60311	-1.49	0.1365
DUM_2007Q2	DUM_2007Q2	1	-3.71045	3.63361	-1.02	0.3074
DUM_2007Q3	DUM_2007Q3	1	-3.18749	3.58308	-0.89	0.3739
DUM_2007Q4	DUM_2007Q4	1	-4.29621	3.60692	-1.19	0.2339
DUM_2008Q1	DUM_2008Q1	1	-3.86127	3.55780	-1.09	0.2781
DUM_2008Q2	DUM_2008Q2	1	-4.88828	3.55748	-1.37	0.1697
DUM_2008Q3	DUM_2008Q3	1	-5.02649	3.55715	-1.41	0.1580
DUM_2008Q4	DUM_2008Q4	1	-5.51019	3.60751	-1.53	0.1270
DUM_2009Q1	DUM_2009Q1	1	-5.28927	3.55924	-1.49	0.1376
DUM_2009Q2	DUM_2009Q2	1	-4.81003	3.55874	-1.35	0.1768
DUM_2009Q3	DUM_2009Q3	1	-1.61153	3.55808	-0.45	0.6507
DUM_2009Q4	DUM_2009Q4	1	1.96475	3.60399	0.55	0.5858
DUM_2010Q1	DUM_2010Q1	1	3.85082	3.55760	1.08	0.2793
DUM_2010Q2	DUM_2010Q2	1	-3.82594	3.55690	-1.08	0.2824
DUM_2010Q3	DUM_2010Q3	1	-4.27532	3.60274	-1.19	0.2357
DUM_2010Q4	DUM_2010Q4	1	-4.49015	3.60274	-1.25	0.2130
DUM_2011Q1	DUM_2011Q1	1	-3.39128	3.58061	-0.95	0.3438
DUM_2011Q2	DUM_2011Q2	1	-4.73573	3.58056	-1.32	0.1863
DUM_2011Q3	DUM_2011Q3	1	-3.76898	3.62708	-1.04	0.2990
DUM_2011Q4	DUM_2011Q4	1	-3.24095	3.62650	-0.89	0.3717

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-2.74122	3.57892	-0.77	0.4439

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: OM OM

Number of Observations Read	1090
Number of Observations Used	1026
Number of Observations with Missing Values	64

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	12731462173	195868649	4.13	<.0001
Error	960	45550709452	47448656		
Corrected Total	1025	58282171625			

Root MSE	6888.29846	R-Square	0.2184
Dependent Mean	-555.01408	Adj R-Sq	0.1655
Coeff Var	-1241.10338		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-20137	1849.23409	-10.89	<.0001
Debt_Equity	Debt/Equity	1	-609.93952	267.26384	-2.28	0.0227
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	20912	1815.99844	11.52	<.0001
DUM_Genmab	DUM_Genmab	1	21096	1878.87186	11.23	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	21159	1844.54699	11.47	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	21299	1822.88957	11.68	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	20925	1929.88177	10.84	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	21100	1808.34549	11.67	<.0001
DUM_Ossur	DUM_Ossur	1	21779	1884.76545	11.56	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	21487	1917.45193	11.21	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	21991	1905.08413	11.54	<.0001
DUM_Harboe	DUM_Harboe	1	21509	1865.53968	11.53	<.0001
DUM_IC_Companys	DUM_IC Companys	1	22163	1933.47340	11.46	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	22358	1966.36397	11.37	<.0001
DUM___K_	DUM_Ø#K#	1	21395	1856.08340	11.53	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	21750	1895.09917	11.48	<.0001
DUM_Hart	DUM_Hart	1	21918	1895.35669	11.56	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	21020	1804.49476	11.65	<.0001
DUM_DFDS	DUM_DFDS	1	21858	1898.21040	11.52	<.0001
DUM_FE_Bording	DUM_FE Bording	1	22117	1998.58062	11.07	<.0001
DUM_FLSmith	DUM_FLSmith	1	22527	2007.25017	11.22	<.0001
DUM_Fl_gger	DUM_Flügger	1	21099	1809.44519	11.66	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	21598	1930.48984	11.19	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	21753	1873.00108	11.61	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	21714	1887.21654	11.51	<.0001
DUM_United_Plantations	DUM_United Plantations	1	21000	1814.49820	11.57	<.0001
DUM_DLH	DUM_DLH	1	22121	1927.27874	11.48	<.0001
DUM_Novozymes	DUM_Novozymes	1	21683	1966.17153	11.03	<.0001
DUM_DSV	DUM_DSV	1	22643	2028.89872	11.16	<.0001
DUM_H_H	DUM_H+H	1	21647	1870.70812	11.57	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	21933	1914.40610	11.46	<.0001
DUM_Rockwool	DUM_Rockwool	1	21169	1813.90939	11.67	<.0001
DUM_SKAKO	DUM_SKAKO	1	21655	1894.17336	11.43	<.0001
DUM_Solar	DUM_Solar	1	21722	1868.90219	11.62	<.0001
DUM_2004Q2	DUM_2004Q2	1	-25.12853	1859.64525	-0.01	0.9892
DUM_2004Q3	DUM_2004Q3	1	-19.97336	1877.37831	-0.01	0.9915
DUM_2004Q4	DUM_2004Q4	1	-166.13652	1879.89799	-0.09	0.9296
DUM_2005Q1	DUM_2005Q1	1	-165.88834	1797.56571	-0.09	0.9265
DUM_2005Q2	DUM_2005Q2	1	-338.74617	1785.72696	-0.19	0.8496
DUM_2005Q3	DUM_2005Q3	1	-199.10272	1813.29711	-0.11	0.9126
DUM_2005Q4	DUM_2005Q4	1	-488.57493	1799.76359	-0.27	0.7861
DUM_2006Q1	DUM_2006Q1	1	-177.34580	1784.66175	-0.10	0.9209
DUM_2006Q2	DUM_2006Q2	1	-5910.81836	1772.51366	-3.33	0.0009
DUM_2006Q3	DUM_2006Q3	1	-489.34262	1772.48342	-0.28	0.7825
DUM_2006Q4	DUM_2006Q4	1	-2955.31978	1799.71527	-1.64	0.1009
DUM_2007Q1	DUM_2007Q1	1	-2791.34954	1772.52059	-1.57	0.1156
DUM_2007Q2	DUM_2007Q2	1	-659.44167	1815.05721	-0.36	0.7164
DUM_2007Q3	DUM_2007Q3	1	-639.17381	1786.91596	-0.36	0.7206
DUM_2007Q4	DUM_2007Q4	1	19.38478	1799.20440	0.01	0.9914
DUM_2008Q1	DUM_2008Q1	1	-115.35862	1772.95897	-0.07	0.9481
DUM_2008Q2	DUM_2008Q2	1	-748.18841	1798.69804	-0.42	0.6775
DUM_2008Q3	DUM_2008Q3	1	-111.82127	1772.63589	-0.06	0.9497
DUM_2008Q4	DUM_2008Q4	1	-603.60765	1801.48314	-0.34	0.7377
DUM_2009Q1	DUM_2009Q1	1	-375.64188	1774.11602	-0.21	0.8324
DUM_2009Q2	DUM_2009Q2	1	-676.17274	1786.49618	-0.38	0.7051
DUM_2009Q3	DUM_2009Q3	1	-180.53984	1773.10425	-0.10	0.9189
DUM_2009Q4	DUM_2009Q4	1	-741.02459	1799.78856	-0.41	0.6806
DUM_2010Q1	DUM_2010Q1	1	-318.22017	1773.09266	-0.18	0.8576
DUM_2010Q2	DUM_2010Q2	1	-165.40359	1772.52294	-0.09	0.9257
DUM_2010Q3	DUM_2010Q3	1	-171.44681	1813.40488	-0.09	0.9247
DUM_2010Q4	DUM_2010Q4	1	-987.41489	1812.27116	-0.54	0.5860
DUM_2011Q1	DUM_2011Q1	1	-1918.52085	1785.81537	-1.07	0.2830
DUM_2011Q2	DUM_2011Q2	1	-144.43101	1772.48476	-0.08	0.9351
DUM_2011Q3	DUM_2011Q3	1	-1436.92134	1799.91620	-0.80	0.4249
DUM_2011Q4	DUM_2011Q4	1	-35.90741	1814.65478	-0.02	0.9842

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-174.69622	1799.98028	-0.10	0.9227

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: OM_SDT OM_SDT

Number of Observations Read	1090
Number of Observations Used	1026
Number of Observations with Missing Values	64

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	20945514583	322238686	12.03	<.0001
Error	960	25724378271	26796227		
Corrected Total	1025	46669892855			

Root MSE	5176.50726	R-Square	0.4488
Dependent Mean	756.35995	Adj R-Sq	0.4115
Coeff Var	684.39732		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	27579	1389.68625	19.85	<.0001
Debt_Equity	Debt/Equity	1	214.82625	200.84687	1.07	0.2851
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-27693	1364.70990	-20.29	<.0001
DUM_Genmab	DUM_Genmab	1	-27732	1411.95882	-19.64	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-27899	1386.16393	-20.13	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-27952	1369.88853	-20.40	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-27808	1450.29241	-19.17	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-27882	1358.95876	-20.52	<.0001
DUM_Ossur	DUM_Ossur	1	-28128	1416.38782	-19.86	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-28029	1440.95147	-19.45	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-28200	1431.65717	-19.70	<.0001
DUM_Harboe	DUM_Harboe	1	-28037	1401.93979	-20.00	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-28258	1452.99149	-19.45	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-28331	1477.70853	-19.17	<.0001
DUM___K_	DUM_Ø#K#	1	-28008	1394.83346	-20.08	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-28127	1424.15353	-19.75	<.0001
DUM_Hart	DUM_Hart	1	-28179	1424.34706	-19.78	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-27859	1356.06497	-20.54	<.0001
DUM_DFDS	DUM_DFDS	1	-28157	1426.49161	-19.74	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-28266	1501.91910	-18.82	<.0001
DUM_FLSmith	DUM_FLSmith	1	-28401	1508.43421	-18.83	<.0001
DUM_Fl_gger	DUM_Flügger	1	-27886	1359.78518	-20.51	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-28097	1450.74937	-19.37	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-28124	1407.54698	-19.98	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-28069	1418.22979	-19.79	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-27851	1363.58248	-20.42	<.0001
DUM_DLH	DUM_DLH	1	-28250	1448.33625	-19.51	<.0001
DUM_Novozymes	DUM_Novozymes	1	-28024	1477.56391	-18.97	<.0001
DUM_DSV	DUM_DSV	1	-28438	1524.70295	-18.65	<.0001
DUM_H_H	DUM_H+H	1	-28085	1405.82384	-19.98	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-28168	1438.66256	-19.58	<.0001
DUM_Rockwool	DUM_Rockwool	1	-27914	1363.13999	-20.48	<.0001
DUM_SKAKO	DUM_SKAKO	1	-28092	1423.45780	-19.74	<.0001
DUM_Solar	DUM_Solar	1	-28113	1404.46669	-20.02	<.0001
DUM_2004Q2	DUM_2004Q2	1	-14.91790	1397.51017	-0.01	0.9915
DUM_2004Q3	DUM_2004Q3	1	-36.52232	1410.83644	-0.03	0.9794
DUM_2004Q4	DUM_2004Q4	1	71.42668	1412.72995	0.05	0.9597
DUM_2005Q1	DUM_2005Q1	1	-26.15514	1350.85783	-0.02	0.9846
DUM_2005Q2	DUM_2005Q2	1	-143.23672	1341.96110	-0.11	0.9150
DUM_2005Q3	DUM_2005Q3	1	-158.62450	1362.67987	-0.12	0.9074
DUM_2005Q4	DUM_2005Q4	1	-302.55243	1352.50952	-0.22	0.8230
DUM_2006Q1	DUM_2006Q1	1	-65.43274	1341.16060	-0.05	0.9611
DUM_2006Q2	DUM_2006Q2	1	4566.11348	1332.03140	3.43	0.0006
DUM_2006Q3	DUM_2006Q3	1	-324.21077	1332.00867	-0.24	0.8077
DUM_2006Q4	DUM_2006Q4	1	1552.43794	1352.47322	1.15	0.2513
DUM_2007Q1	DUM_2007Q1	1	1454.76630	1332.03661	1.09	0.2750
DUM_2007Q2	DUM_2007Q2	1	206.42882	1364.00257	0.15	0.8797
DUM_2007Q3	DUM_2007Q3	1	200.22203	1342.85462	0.15	0.8815
DUM_2007Q4	DUM_2007Q4	1	-26.93848	1352.08929	-0.02	0.9841
DUM_2008Q1	DUM_2008Q1	1	-50.76242	1332.36605	-0.04	0.9696
DUM_2008Q2	DUM_2008Q2	1	237.70440	1351.70877	0.18	0.8604
DUM_2008Q3	DUM_2008Q3	1	0.71076	1332.12325	0.00	0.9996
DUM_2008Q4	DUM_2008Q4	1	192.16101	1353.80176	0.14	0.8872
DUM_2009Q1	DUM_2009Q1	1	93.75844	1333.23556	0.07	0.9440
DUM_2009Q2	DUM_2009Q2	1	237.60563	1342.53916	0.18	0.8596
DUM_2009Q3	DUM_2009Q3	1	-154.00954	1332.47522	-0.12	0.9080
DUM_2009Q4	DUM_2009Q4	1	238.77315	1352.52829	0.18	0.8599
DUM_2010Q1	DUM_2010Q1	1	38.07091	1332.46651	0.03	0.9772
DUM_2010Q2	DUM_2010Q2	1	-24.84850	1332.03837	-0.02	0.9851
DUM_2010Q3	DUM_2010Q3	1	-80.59787	1362.76086	-0.06	0.9529
DUM_2010Q4	DUM_2010Q4	1	-447.00003	1361.90887	-0.33	0.7428
DUM_2011Q1	DUM_2011Q1	1	543.71668	1342.02753	0.41	0.6855
DUM_2011Q2	DUM_2011Q2	1	22.91437	1332.00968	0.02	0.9863
DUM_2011Q3	DUM_2011Q3	1	63.49561	1352.62421	0.05	0.9626
DUM_2011Q4	DUM_2011Q4	1	-2.42138	1363.70015	-0.00	0.9986

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-154.40755	1352.67236	-0.11	0.9091

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: REV_GROWTH REV_GROWTH

Number of Observations Read	1090
Number of Observations Used	1014
Number of Observations with Missing Values	76

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	276804273	4258527	1.96	<.0001
Error	948	2061368457	2174439		
Corrected Total	1013	2338172730			

Root MSE	1474.59801	**R-Square**	0.1184
Dependent Mean	85.46026	**Adj R-Sq**	0.0579
Coeff Var	1725.47803		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	2904.33146	412.08612	7.05	<.0001
Debt_Equity	Debt/Equity	1	129.31220	57.44934	2.25	0.0246
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-2922.94675	403.09857	-7.25	<.0001
DUM_Genmab	DUM_Genmab	1	-2987.38853	432.20067	-6.91	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-3037.12053	412.11740	-7.37	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-3062.99804	404.67197	-7.57	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-2962.60678	430.83249	-6.88	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-3014.01540	401.32647	-7.51	<.0001
DUM_Ossur	DUM_Ossur	1	-3128.25907	418.28277	-7.48	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-3107.92528	424.53802	-7.32	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-3210.22341	422.85974	-7.59	<.0001
DUM_Harboe	DUM_Harboe	1	-3115.82756	416.88888	-7.47	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-3250.95655	437.72100	-7.43	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-3293.22852	436.16657	-7.55	<.0001
DUM___K_	DUM_Ø#K#	1	-3082.60743	414.88049	-7.43	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-3165.65441	423.44515	-7.48	<.0001
DUM_Hart	DUM_Hart	1	-3204.12169	420.73525	-7.62	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-2962.68836	400.41987	-7.40	<.0001
DUM_DFDS	DUM_DFDS	1	-3178.34080	421.21383	-7.55	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-3202.52088	442.48810	-7.24	<.0001
DUM_FLSmith	DUM_FLSmith	1	-3322.70662	444.93031	-7.47	<.0001
DUM_Fl_gger	DUM_Flügger	1	-3025.08517	401.58323	-7.53	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-3133.30677	420.39135	-7.45	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-3158.75073	415.83356	-7.60	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-3132.89027	421.52355	-7.43	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-2982.52964	399.70952	-7.46	<.0001
DUM_DLH	DUM_DLH	1	-3224.77171	427.69260	-7.54	<.0001
DUM_Novozymes	DUM_Novozymes	1	-3113.04675	417.20399	-7.46	<.0001
DUM_DSV	DUM_DSV	1	-3343.79066	449.57936	-7.44	<.0001
DUM_H_H	DUM_H+H	1	-3146.20834	415.17321	-7.58	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-3196.71344	427.53628	-7.48	<.0001
DUM_Rockwool	DUM_Rockwool	1	-3036.85006	402.61790	-7.54	<.0001
DUM_SKAKO	DUM_SKAKO	1	-3171.48154	421.58966	-7.52	<.0001
DUM_Solar	DUM_Solar	1	-3167.25756	420.76686	-7.53	<.0001
DUM_2004Q2	DUM_2004Q2	1	-32.36163	409.55222	-0.08	0.9370
DUM_2004Q3	DUM_2004Q3	1	-31.26846	414.11908	-0.08	0.9398
DUM_2004Q4	DUM_2004Q4	1	-28.77988	414.74648	-0.07	0.9447
DUM_2005Q1	DUM_2005Q1	1	-14.58933	388.62997	-0.04	0.9701
DUM_2005Q2	DUM_2005Q2	1	32.30126	388.86082	0.08	0.9338
DUM_2005Q3	DUM_2005Q3	1	0.20278	388.89829	0.00	0.9996
DUM_2005Q4	DUM_2005Q4	1	27.27291	395.63203	0.07	0.9451
DUM_2006Q1	DUM_2006Q1	1	-28.13923	388.64829	-0.07	0.9423
DUM_2006Q2	DUM_2006Q2	1	-22.21402	383.35345	-0.06	0.9538
DUM_2006Q3	DUM_2006Q3	1	-25.86300	386.16266	-0.07	0.9466
DUM_2006Q4	DUM_2006Q4	1	-40.31042	392.29913	-0.10	0.9182
DUM_2007Q1	DUM_2007Q1	1	-10.25947	383.35557	-0.03	0.9787
DUM_2007Q2	DUM_2007Q2	1	76.50266	392.43421	0.19	0.8455
DUM_2007Q3	DUM_2007Q3	1	56.03817	386.45887	0.15	0.8847
DUM_2007Q4	DUM_2007Q4	1	661.87080	392.43363	1.69	0.0920
DUM_2008Q1	DUM_2008Q1	1	88.52056	383.46680	0.23	0.8175
DUM_2008Q2	DUM_2008Q2	1	63.70093	386.21893	0.16	0.8690
DUM_2008Q3	DUM_2008Q3	1	84.00814	386.20255	0.22	0.8278
DUM_2008Q4	DUM_2008Q4	1	47.60133	389.56143	0.12	0.9028
DUM_2009Q1	DUM_2009Q1	1	9.45820	383.64329	0.02	0.9803
DUM_2009Q2	DUM_2009Q2	1	29.57210	386.36291	0.08	0.9390
DUM_2009Q3	DUM_2009Q3	1	-56.74076	383.50135	-0.15	0.8824
DUM_2009Q4	DUM_2009Q4	1	43.28598	389.17491	0.11	0.9115
DUM_2010Q1	DUM_2010Q1	1	-4.77470	383.44243	-0.01	0.9901
DUM_2010Q2	DUM_2010Q2	1	100.17197	386.18811	0.26	0.7954
DUM_2010Q3	DUM_2010Q3	1	-4.55349	389.14465	-0.01	0.9907
DUM_2010Q4	DUM_2010Q4	1	107.78603	389.17921	0.28	0.7819
DUM_2011Q1	DUM_2011Q1	1	-14.06528	386.18751	-0.04	0.9710
DUM_2011Q2	DUM_2011Q2	1	42.66283	383.34325	0.11	0.9114
DUM_2011Q3	DUM_2011Q3	1	-27.39100	392.33881	-0.07	0.9444
DUM_2011Q4	DUM_2011Q4	1	1397.34795	389.24766	3.59	0.0003

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	10.17086	389.21009	0.03	0.9792

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: REV_GROWTH_SDT REV_GROWTH_SDT

Number of Observations Read	1090
Number of Observations Used	1014
Number of Observations with Missing Values	76

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	65	614377631	9451964	5.94	<.0001
Error	948	1508068452	1590790		
Corrected Total	1013	2122446083			

Root MSE	1261.26504	**R-Square**	0.2895
Dependent Mean	146.25813	**Adj R-Sq**	0.2407
Coeff Var	862.35553		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	4911.11319	352.46882	13.93	<.0001
Debt_Equity	Debt/Equity	1	91.85271	49.13803	1.87	0.0619
DUM_Bavarian_Nordic	DUM_Bavarian Nordic	1	-4792.82751	344.78151	-13.90	<.0001
DUM_Genmab	DUM_Genmab	1	-4877.37414	369.67335	-13.19	<.0001
DUM_GN_Store_Nord	DUM_GN Store Nord	1	-4987.13091	352.49557	-14.15	<.0001
DUM_Lundbeck	DUM_Lundbeck	1	-5020.20201	346.12729	-14.50	<.0001
DUM_Neurosearch	DUM_Neurosearch	1	-4878.68667	368.50311	-13.24	<.0001
DUM_Novo_Nordisk	DUM_Novo Nordisk	1	-4994.37010	343.26579	-14.55	<.0001
DUM_Ossur	DUM_Ossur	1	-5063.67975	357.76899	-14.15	<.0001
DUM_Bang___Oiufsen	DUM_Bang & Oiufsen	1	-5040.86732	363.11928	-13.88	<.0001
DUM_Carlsberg	DUM_Carlsberg	1	-5127.65329	361.68380	-14.18	<.0001
DUM_Harboe	DUM_Harboe	1	-5055.73684	356.57675	-14.18	<.0001
DUM_IC_Companys	DUM_IC Companys	1	-5155.77529	374.39505	-13.77	<.0001
DUM_Royal_Unibrew	DUM_Royal Unibrew	1	-5183.46244	373.06550	-13.89	<.0001
DUM___K_	DUM_Ø#K#	1	-5019.74093	354.85892	-14.15	<.0001
DUM_A_O__Johansen	DUM_A#O# Johansen	1	-5089.57366	362.18451	-14.05	<.0001
DUM_Hart	DUM_Hart	1	-5118.06026	359.86666	-14.22	<.0001
DUM_D_S_Norden	DUM_D/S Norden	1	-4914.22297	342.49035	-14.35	<.0001
DUM_DFDS	DUM_DFDS	1	-5098.52095	360.27601	-14.15	<.0001
DUM_FE_Bording	DUM_FE Bording	1	-5104.66179	378.47248	-13.49	<.0001
DUM_FLSmith	DUM_FLSmith	1	-5193.15467	380.56138	-13.65	<.0001
DUM_Fl_gger	DUM_Flügger	1	-4996.32722	343.48540	-14.55	<.0001
DUM_Glunz___Jensen	DUM_Glunz & Jensen	1	-5055.68658	359.57251	-14.06	<.0001
DUM_Aarsleff	DUM_Aarsleff	1	-5085.96784	355.67411	-14.30	<.0001

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_Torm	DUM_Torm	1	-5068.37509	360.54091	-14.06	<.0001
DUM_United_Plantations	DUM_United Plantations	1	-4957.41614	341.88276	-14.50	<.0001
DUM_DLH	DUM_DLH	1	-5095.25554	365.81747	-13.93	<.0001
DUM_Novozymes	DUM_Novozymes	1	-5062.23474	356.84627	-14.19	<.0001
DUM_DSV	DUM_DSV	1	-5220.11720	384.53784	-13.58	<.0001
DUM_H_H	DUM_H+H	1	-5070.32569	355.10929	-14.28	<.0001
DUM_CPH_Airport	DUM_CPH Airport	1	-5118.92248	365.68377	-14.00	<.0001
DUM_Rockwool	DUM_Rockwool	1	-5002.52714	344.37039	-14.53	<.0001
DUM_SKAKO	DUM_SKAKO	1	-5072.24131	360.59746	-14.07	<.0001
DUM_Solar	DUM_Solar	1	-5092.27490	359.89370	-14.15	<.0001
DUM_2004Q2	DUM_2004Q2	1	-26.88512	350.30150	-0.08	0.9388
DUM_2004Q3	DUM_2004Q3	1	-9.72703	354.20766	-0.03	0.9781
DUM_2004Q4	DUM_2004Q4	1	-14.77491	354.74430	-0.04	0.9668
DUM_2005Q1	DUM_2005Q1	1	-11.77086	332.40611	-0.04	0.9718
DUM_2005Q2	DUM_2005Q2	1	27.02405	332.60356	0.08	0.9353
DUM_2005Q3	DUM_2005Q3	1	-0.77843	332.63562	-0.00	0.9981
DUM_2005Q4	DUM_2005Q4	1	29.50954	338.39517	0.09	0.9305
DUM_2006Q1	DUM_2006Q1	1	-12.73730	332.42179	-0.04	0.9694
DUM_2006Q2	DUM_2006Q2	1	-8.91368	327.89296	-0.03	0.9783
DUM_2006Q3	DUM_2006Q3	1	-13.93840	330.29575	-0.04	0.9663
DUM_2006Q4	DUM_2006Q4	1	-17.25886	335.54445	-0.05	0.9590
DUM_2007Q1	DUM_2007Q1	1	-13.45285	327.89478	-0.04	0.9673
DUM_2007Q2	DUM_2007Q2	1	46.68065	335.65998	0.14	0.8894
DUM_2007Q3	DUM_2007Q3	1	29.66027	330.54911	0.09	0.9285
DUM_2007Q4	DUM_2007Q4	1	455.51395	335.65949	1.36	0.1751
DUM_2008Q1	DUM_2008Q1	1	-82.26488	327.98991	-0.25	0.8020
DUM_2008Q2	DUM_2008Q2	1	48.67010	330.34388	0.15	0.8829
DUM_2008Q3	DUM_2008Q3	1	50.75105	330.32988	0.15	0.8779
DUM_2008Q4	DUM_2008Q4	1	53.38252	333.20281	0.16	0.8727
DUM_2009Q1	DUM_2009Q1	1	22.58956	328.14086	0.07	0.9451
DUM_2009Q2	DUM_2009Q2	1	43.56040	330.46703	0.13	0.8952
DUM_2009Q3	DUM_2009Q3	1	-10.75885	328.01946	-0.03	0.9738
DUM_2009Q4	DUM_2009Q4	1	56.38997	332.87222	0.17	0.8655
DUM_2010Q1	DUM_2010Q1	1	11.19403	327.96907	0.03	0.9728
DUM_2010Q2	DUM_2010Q2	1	64.12653	330.31753	0.19	0.8461
DUM_2010Q3	DUM_2010Q3	1	-19.54210	332.84633	-0.06	0.9532
DUM_2010Q4	DUM_2010Q4	1	71.90854	332.87589	0.22	0.8290
DUM_2011Q1	DUM_2011Q1	1	-14.38401	330.31701	-0.04	0.9653
DUM_2011Q2	DUM_2011Q2	1	-61.50622	327.88423	-0.19	0.8512
DUM_2011Q3	DUM_2011Q3	1	-18.05339	335.57839	-0.05	0.9571
DUM_2011Q4	DUM_2011Q4	1	1211.99485	332.93444	3.64	0.0003

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
DUM_2012Q1	DUM_2012Q1	1	-42.18370	332.90231	-0.13	0.8992

Electronic Appendices

- Original data – Financial ratios – Consumer goods (Excel)
- Original data – Financial ratios – Health Care (Excel)
- Original data – Financial ratios – Industry (Excel)
- Raw Data – PANEL (Excel)
- Regression Results – Full overview (PDF)