



BI Norwegian Business School - campus Oslo

# GRA 19502

Master Thesis

Component of continuous assessment: Forprosjekt, Thesis  
MSc

Preliminary Thesis Report - Indicators predicting financial  
success of Norwegian private firms divided by size

Navn: Geir Einar Borgen, Joachim Granheim

Start: 01.01.2018 09.00

Finish: 15.01.2018 12.00

## Contents

<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>2. AREA OF RESEARCH.....</b>	<b>2</b>
2.1 LITERATURE REVIEW .....	2
2.2 LACK OF RESEARCH .....	7
2.3 HOW IS OUR RESEARCH DIFFERENT .....	7
<b>3. RESEARCH QUESTION .....</b>	<b>8</b>
<b>4. HYPOTHESIS.....</b>	<b>9</b>
4.1 HYPOTHESIS 1 .....	9
4.2 HYPOTHESIS 2 .....	9
4.3 HYPOTHESIS 3 .....	9
4.4 HYPOTHESIS 4 .....	10
4.5 HYPOTHESIS 5 .....	10
4.6 HYPOTHESIS 6 .....	11
<b>5. METHODOLOGY AND DATA.....</b>	<b>11</b>
5.1 INTRODUCTION TO METHODOLOGY .....	11
5.2 DATA .....	11
<b>6. THESIS PROGRESSION PLAN .....</b>	<b>12</b>
<b>7. REFERENCE LIST .....</b>	<b>13</b>

## 1. Introduction

Finding indicators that can be used predicting a firm's financial success is of interest for most of a firm's stakeholders. Focusing either on the perspectives of shareholders, governments, or even the employees, the respective stakeholder will have some advantage if he or she knows something about the future success of a firm. We will focus on Norwegian private firms, and will be analyzing their financial performance for the last 15-20 years to find variables that can be indicators of financial success. Also, we will test whether the findings are consistent between industries, company size (divided into small, medium and large size) and other factors.

First, we will have to define what is considered financial success, this could be different for different groups of stakeholders. For instance, an employee might think the firm is successful when having positive results, since the employee is probably keeping the job. On the other hand, a shareholder might define financial success as better results than the average of firms, or better than some percentage of other firms to keep the shareholder satisfied to be holding equity in the firm. Because of these differences in what is considered financial success, we might want to include some different measures of success, and decide what levels are considered “financial success”. Our interpretation of financial success will be determined after getting an overview of all firms’ performance. At this point, we will most likely define successful firms as those performing at some degree better than the industry average. Common measures that have been used in previous research have been Return on Equity (ROE), Economic Value Added (EVA), Earnings before interests and taxes (EBIT). Other measures that have been used will be covered in the literature review.

Over the years, there has been a lot of research trying to find indicators to predict financial success. With various methods, measures and results we have become interested in conducting further research into this field. In general, there are few studies based on Norwegian private companies, this creates uncertainty of whether the findings are applicable for firms in Norway. We are therefore interested in applying the results from international studies that shows a relationship between specific variables and financial performance, and find out whether this applies for Norwegian private firms. In addition to previous research, we will add more

variables that might have a relationship with financial performance. Hence, our study will give answer to the following research question;

*“Which indicators predicts financial success for Norwegian private firms?”*

## **2. Area of research**

### ***2.1 Literature Review***

Factors and indicators with significant impact on companies' financial performance is widely researched in studies from most continents. In this section we describe some of the interesting research and findings that have been made, and that we want to use in our own research of Norwegian private companies.

In early 2003, Johnson & Soenen made an analysis of 478 companies in the period 1982-1998, collecting financial data on a monthly basis. Johnson & Soenen measured success by using Sharpe Ratio, Jensen's Alpha, and EVA. Successful companies are those performing better than the average on the three measures. Further, they use ten different variables in order to evaluate the successful companies; Book-to-market ratio, Size, Sustainable growth rate, Profitability in terms of Return on Assets (ROA), Capital Structure, Liquidity, Cash Conversion Cycle, Earnings volatility, Research & Development expenditures, and Advertising expenditures. Johnson & Soenen found that large and profitable companies, with efficient working capital management and certain degree of uniqueness is outperforming the average company on the three measures.

Gilbert, Menon and Schwartz (1990) did some research on “Predicting bankruptcy for firms in financial distress”, trying to find some ratios predicting bankruptcy. They did find some differences in the financial ratios between the companies that went bankrupt, and those who did not. But they argue that the differences are not sufficiently different from the others, making it difficult to develop a ratio-based model predicting bankruptcy with accuracy. This study was conducted in the U.S., but the writers argue that the findings are generalizable.

Becchetti, Giacomo & Pinnacchio (2008) did a study on what impact Corporate Social Responsibility (CSR) have on the performance of US listed firms. The data used in the research was collected in a 13-year period, from approximately thousand firms. They define CSR as firms following laws and regulations together with actions that are expected to have a positive effect on stakeholder's welfare. This particular research question has been tested and analyzed a lot the last century, but with varying results. However, the study referred to here found CSR to change the activity in the firm from shareholder-focus to stakeholder. The firms focusing on social responsibility created higher sales per employee, but the ROE decreased.

Another interesting indicator to predict financial success is the effect of capital structure. In 2013, Addae, Baasi & Hughes analysed the effect of capital structure on the profitability of listed firms in Ghana. Profitability was measured in ROE. They also analysed whether the effect differed among sectors and industries. Their conclusion can be divided in three parts;

- i) Statistically significant positive relationship between short-term debt and profitability. Same applied for the sector of banking & finance, distribution, pharmaceutical, and food & beverage,
- ii) Statistically negative relationship between long-term debt and profitability, for all sectors except manufacturing,
- iii) Statistically significant negative relationship between profitability and total debt at the overall listed companies.

These results can be compared to the study of Abeywardhana (2015). He did an empirical analysis of Small and Medium-sized Enterprises (SME) in the UK on the effect of capital structure on profitability (ROA and Return on Common Equity (ROCE)). The study included all sectors, except finance, resulting in observations from 54.183 firms in the period 1998-2008. The general conclusion from this research showed that capital structure has significant influence on the profitability of these firms. It also found that profitable firms use more short-term debt to finance the activity in the company.

Further, we found some interesting articles on the effect of female leadership. Noland, Moran & Kotschwar (2016) did a thorough analysis containing 21,980 firms from 91 countries trying to answer whether gender diversity is profitable for the performance of companies. This research found evidence of having women in the executive position to have a positive effect on firms' performance. Female board representatives was also positive for the performance, but not as strong as in executive position. However, they found no clear effect of having a female Chief Executive Officer (CEO). In fact, comparing firms with no female executives to firms with 30% female executives increased the profit margin with approximately 15%.

In 2007 McKinsey published an article where they examined the effect on corporate performance when women were represented in top management or board. The results was clear, companies with at least three women in senior/executive positions had significantly positive effect on non-financial performance indicators. After these results, they put further research into finding whether women would bring the same effect on financial indicators. Based on research from 89 listed companies around Europe, comparing the firms with at least two women in executive positions or board to companies where women is not present in such positions. The financial indicators used was ROE, EBIT, and Stock price growth. The results was clear, companies with women in executive positions outperformed the average company in their sector, significantly.

In recent years, research shows an increased interest in the performance of family controlled companies. Among those interested in this field, we find Barontini & Caprio (2006). They conducted a survey based on 675 large and public companies from 11 different countries in the west of Europe, excluding Ireland and the UK, but including both Norway and Sweden. They excluded companies with less than EUR 300 millions in assets and with owners controlling 95% or more. The financial performance is measured by Tobin's Q and ROA. In order to be a family controlled company the family must represent at least 51% of the voting rights or count for the double of the voting rights of the second largest shareholder. They found family control to have a positive effect on valuation and performance for European corporations. However, Westhead & Cowling (1997) studied 887 companies in the UK for the period 1991 to 1994. They analysed whether family

controlled firms performed better than non-family controlled. They found no significant results to support the hypothesis that family-controlled firms performs better than non-family controlled. On the other hand, they found some interesting results on the fact that family-controlled firms are not solely focused on profit maximizing.

If we compare these results to studies conducted in the US, we find some slight differences. McVey, Draho & Stanley (2005) analysed the performance of family-controlled and non-family controlled corporations on the S&P500. Performance was measured on stock-returns for one, three and five-year periods, and the family-controlled companies outperformed the other companies on the S&P500 with 4,4%, 19,6% and 109,7%, respectively. The performance of family-controlled firms are explained by long-term investments, good knowledge about the industry in which they operate, and that they are highly effective and motivated.

With the rapid changes in products and development of new inventions, it will be interesting to observe and test the relationship between investments in Research and Development (R&D) and the performance of companies. Michael Tubbs did an analysis of this particular topic in 2007. He observed 1.250 companies, both listed and private in Europe. Before starting the study, he had a hypothesis that relationship between R&D investments and performance would differ from sector to sector. Of the top 16 sectors investing in R&D, only five of them had profitability (operating profit as percentage of sales) over 15%, and that three of the five sectors are sectors with high R&D intensity. The pharmaceutical sector had the highest R&D investments and also the highest profitability. Tubbs also observed that the R&D spending's within the different sectors was quite similar, which he explained by the fact that companies will not let their own products fall behind in the development of competitors. To conclude, Tubbs results proved that it was a significant relationship between the growth in R&D and the growth in sales, especially for the R&D-intensive sectors. These results are also supported by a study of Hsu, Chen, Chen & Wang (2013), who made the same kind of analysis with companies in Taiwan. Their research is based on data collected in the period of 2000 to 2011. Results from this study indicate a significant relationship between the firms' investment in R&D and the financial performance.

They also found companies with high R&D-intensity to show better stock returns and revenues, but with opposite effect of operating income.

Another field of interest that is widely researched is the financial effect of CEO turnover. In fact, Fama & Jensen (1983) said that the change of CEO positions is the most important decision in which the board of directors have to make. With this in our minds, we found a study by Hillier, Marshall, McColgan & Werema (2006), who studied 705 non-financial firms in the UK in the fiscal period 1993-1998 finding the financial impacts of turnover in the CEO position. Financial performance was measured by industry-adjusted changes in the return on assets (IROA) and various ratios connected to debt. Results from this study say that forced CEO replacements gives large and significant decline in the IROA. However, the performance increased significantly relative to the industry for the first two years after the replacement of CEO position. The effect on leverage show that the level of debt increases before the turnover, but decreases in the first years after the turnover again. Looking at the stock-prices, they observed significantly negative stock-returns in the time horizon connected to the turnover.

On the other hand, the results by Hillier et. al. can be compared to the results from another study on companies in the U.S. by Sridharan & St. John (1998). They studied 66 large and well-known companies over a 14-year period in 1980-90's on what effect stability would have on the performance of the company. Of the total 66 companies, 35 of them had stable leadership in the period. Further, they found that firms changing their leadership during the period performed in overall better compared to those firms with stable leadership. They also observed a small advantage in ROA for the companies with changed leadership.

Another aspect that might have effect on firms' financial performance is the CEO compensations. This effect has been widely studied across the world for firms of different sizes, both listed and private. Michaud & Gai (2009) did an empirical analysis of 274 companies of the S&P500-companies in the U.S. The data used was collected in the period 1995 to 2004, where they measured financial performance in terms of ROE, Average ROE, and EVA. CEO compensation was categorized in six parts; Salary, Stock Grants, Options, Bonus, Long-term



incentives, and Total compensation. The results from this study concluded that none of these six parameters had a significant effect on the financial performance.

## ***2.2 Lack of research***

Most of the research in the field of what we want to study further, is based on larger and listed companies over several continents. Norwegian private companies, in which we base our study on, has not been thoroughly examined. Further, most of the existing literature that we have managed to go through at this stage in the process, show that most of researchers have not sorted the data by industry. This might exclude effects of some industries being more or less profitable than other industries by nature. Also, some industries might have, for instance, a higher density of female CEOs than others, and therefore results might be skewed.

We also observe that most studies that wants to find the relationship between a specific variable and the firms financial performance, tend to use measures such as ROA, ROE and EVA. Do the researcher know for certain that these measures are the best to indicate financial performance, or does it exist other measures that gives more reliable results?

## ***2.3 How is our research different***

Our research is different from existing research and studies in terms of that we will use accounting- and corporate governance data from Norwegian private firms. We, together with our supervisor, have yet to discover that this particular problem has been covered in previous research.

The accounting- and corporate governance data on Norwegian private firms will, in distinction to existing research, be treated with regards to the industry each firm is operating in. By doing so, we believe that we will be able to uncover more reliable indicators of financial success in firms. The reason for this, is that the definition of financial success will deviate in different industries. For instance, a grocery store might consider a profit margin of 3% as financial success, while a firm operating in technology might not consider that profit margin a success.

As mentioned, most existing research use similar models to measure financial performance. These models are well known and with good reputation, and might well be the best models. However, we are interested in doing more research in that particular field, to find out whether there might exist other financial performance measures that are more suitable for our study and also give more reliable results.

Our thesis will contribute to existing research, and help closing the current gap between explanatory variables based on international research and possibly confirm the uncertainty about whether those are applicable for Norwegian private firms.

### **3. Research question**

*“Which indicators predicts financial success for Norwegian private firms? ”*

We want to find variables that can indicate whether a firm will have financial success or not. The objective is to provide some indicators which have been proven to be significant for the financial success of firms. These findings will enable stakeholders to get an indication of whether the firm probably will attain financial success. And we believe that potential findings can be relevant and useful for more than one group of stakeholders.

Based on previous research and our own curiosity, we will conduct further research on the following variables to see if they affect firms’ financial performance:

- Women in management
- Family ownership
- Stability in top management
- Capital structure
- Investments in R&D
- Percentage of sales spent on advertising

Once we have gained access to the “Centre for Corporate Governance Research”-database (CCGR) from BI Norwegian Business School, we will add some more variables to test.

## 4. Hypothesis

We have defined some hypotheses that we want to test through our research. The list of hypotheses will be extended throughout the period of our research. At this point, we have defined six hypotheses in which we want to apply to Norwegian private firms:

### 4.1 Hypothesis 1

The first hypothesis relates to whether the sex of the CEO of a company affects the probability of reaching financial success, and more specific, does female CEOs have a higher probability of financial success.

*H<sub>O</sub>: Firms with female CEOs have higher probability of financial success.*

*H<sub>A</sub>: Firms with female CEOs does not have higher probability of financial success.*

### 4.2 Hypothesis 2

Further, we will examine whether the compensation of CEO has any effect on the probability of financial success. Does a firm with a well compensated CEO tend to have higher probability than a firm with a not so well-compensated CEO? Here we will need to define what is perceived being a well compensated CEO.

*H<sub>O</sub>: Firms with well compensated CEOs have higher probability of financial success.*

*H<sub>A</sub>: Firms with well compensated CEOs does not have higher probability of financial success.*

### 4.3 Hypothesis 3

Third, we will examine whether companies with stability in its top management affect the probability of financial success. Does a company which have had the same CEO over some years have higher probability than a company which changes their CEO every now and then? Here we have to define how many years a company needs to have the same CEO until we can call the management stable.

*H<sub>0</sub>: Firms with stability in their top management have higher probability of financial success.*

*H<sub>A</sub>: Firms with stability in their top management does not have higher probability of financial success.*

#### **4.4 Hypothesis 4**

Next, we will examine whether family-controlled firms has higher probability of financial success. Earlier research, as mentioned in the literature, suggests that it does in Europe, but other research does not find the same results in the UK.

*H<sub>0</sub>: Firms that are controlled by one family have higher probability of financial success.*

*H<sub>A</sub>: Firms that are controlled by one family does not have higher probability of financial success.*

#### **4.5 Hypothesis 5**

Also, we will examine whether the firms' capital structure affects the probability of financial success. We will simplify this by examining whether firms that are mainly debt financed (less than 50% equity) has higher probability of financial success.

*H<sub>0</sub>: Firms that has more than 50% debt have higher probability of financial success.*

*H<sub>A</sub>: Firms that has more than 50% debt does not have higher probability of financial success.*

There is, however, many ways to examine how capital structure affects the probability of success. Therefore, we will do more research on what is the best way to test this factor, and potentially change the formulation of H<sub>0</sub> and H<sub>A</sub>.

#### ***4.6 Hypothesis 6***

Finally, we will examine whether investments in R&D does affect the firm's' probability of financial success. As for hypothesis 5, there is several ways of testing this, and we will find a suitable method to differ between industries, company size and more, once we gain access to the database we will be using.

### **5. Methodology and Data**

#### ***5.1 Introduction to methodology***

To carry out our research, we will be using quantitative research methods and statistical regression models to test our hypotheses. The database we will be using consists of both time-series data and cross-section data, which indicates that we should be using panel data regression. Some benefits of using this method according to Hill, Griffiths and Lim (2012) is that this type of regression controls for individual differences between the different firms. On the other hand, we will have to address potential problems such as autocorrelation and heteroscedasticity (Gujarati and Porter, 2009).

#### ***5.2 Data***

Our thesis will contain analyzes of a large number of observations and to do so, we will be using secondary data from the CCGR-database that the BI Norwegian Business School are in control of. The database contains accounting data for Norwegian firms from 1994-2015 for all private entities with a reporting obligation, information about the industries in which the firms are operating in and some corporate governance variables.

We will categorize the firms with regards to their sizes according to the European Commission's definition of Small and medium-sized enterprises (SMEs). That is according:

1. staff headcount, and
2. the firms' turnover or balance sheet total (European Commission, 2013).

The European Commission estimated that in 2014 there were 281 777 SMEs and 615 large firms in Norway, they also estimated that in the period 2008-2012 there were 230 000 registrations of new firms and 108 000 firms that has disappeared from the statistics in the same period (2014). This means, during the time frame whereas our data is from, there is a lot of firms going in and out of the database, which shows that the panel data is an unbalanced panel (Gujarati and Porter, 2009).

## **6. Thesis progression plan**

We are planning to hand in the thesis in the middle of June. To reach this internal deadline, we want to have a final draft ready about one month ahead, in the middle of May.

We will start off by defining all the critical terms we are using in the thesis. That is, defining what is financial success for some of the different stakeholders and the complete list of hypotheses we want to examine. Subsequently, we will decide which variables from the database that are needed. After this, we will apply to BI Norwegian Business School for access to the database. This process will be completed by the end of January, and we will hopefully have gained access to the database by the middle of February.

Then we will start our treatment of the data by getting an overview over the complete dataset, and make a plan for how to treat the data in detail before experimenting by running some regressions. Our plan is to be done with all regressions and statistical programming by the end of March. Simultaneously as we are conducting our statistical analysis, we will document what we are doing and start interpreting our results and findings.

In April, we will do most of the interpretations and discussions of our findings. Ending with a first draft of our thesis when the end of the month approaches. This draft will be revised several times, until we have a complete draft ready in the middle of May. After receiving feedback from our supervisor on the first complete draft, we will use approximately one month to finish our master thesis.

## 7. Reference list

- Abeywardhana, D. K. Y. (2015). *Capital Structure and Profitability: An Empirical Analysis of SMEs in the UK*. (Vol. 4, Issue. 2). Sri Lanka: Journal of Emerging Issues in Economics, Finance and Banking.
- Addae, A. A., Nyarko-Baasi, M., & Hughes, D. (2013). *The Effect of Capital Structure on Profitability of Listed Firms in Ghana*. (Vol. 5, No.31). England: European Journal of Business and Management.
- Barontini, R., & Caprio, L. (2006). *The Effect of Family Control on Firm Value and Performance: Evidence from Continental Europe*. (Vol. 12, No. 5). Italy: European Financial Management.
- Becchetti, L., Giacomo S. D., Pinnacchio, D. (2008). *Corporate Social Responsibility and corporate performance: evidence from a panel of US listed firms*. (40). Italy: Applied Economics.
- European Commission. What is an SME? (2013). Downloaded from: [http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition\\_nn](http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_nn)
- European Commission. Enterprise and industry: *SBA fact sheet*. (2014). Downloaded from: <http://ec.europa.eu/DocsRoom/documents/8941/attachments/1/translations/en/renditions/native>
- Fama, E. F., & Jensen, M. C. (1983). *Separation of Ownership and Control*. (Vol. 26). Chicago: Journal of Law and Economics.
- Gilbert, L. R., Menon, K., & Schwartz, B. K. (1990). *Predicting Bankruptcy For Firms In Financial Distress*. USA: Journal of Business Finance & Accounting.

- Gujarati, Damodar N., and Dawn C. Porter. (2009). *Basic Econometrics* (5<sup>th</sup> edition). New York: McGraw-Hill Education.
- Hill, C. R., Griffiths, W. E., & Lim, G. C. (2012). *Principles of Econometrics*. (4<sup>th</sup> edition). New Jersey: Wiley
- Hillier, D., Marshall, A., McColgan, P., & Werema, S. (2006). *Company Performance Surrounding CEO Turnover: Evidence from the UK*. Virginia: European Financial Management Association.
- Hsu, J-F., Chen, M-Y., Chen, Y-C. & Wang, W-C. (2013). *An Empirical Study on the Relationship Between R&D and Financial Performance*. (Vol. 3, No.5) Athens: Journal of Applied Finance and Banking.
- Johnson, R., & Soenen, L. (2003). *Indicators of Successful Companies*. (Vol. 21, No. 3). England: European Management Journal.
- Noland, M., Moran, T., & Kotschwar, B. (2016). *Is Gender Diversity Profitable? Evidence from a Global Survey*. Washington: Peterson Institute for International Economics.
- McKinsey & Company. (2007). Women Matter. Downloaded from:  
<https://piie.com/publications/wp/wp16-3.pdf>
- McVey, H. & Draho, J. (2005). *U.S. Family-Run Companies - They May Be Better Than You Think*. (Vol. 17, No. 4). Boston: Journal of Applied Corporate Finance.
- Michaud, D. W., & Gai, Y. (2009). CEO Compensation and Firm Performance. Downloaded from:  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1531673](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1531673)



Sridharan, U. V., & St. John., C. H. (1998). *The Effect of Organizational Stability  
And Leadership Structure On Firm Performance*. (Vol. 10, No. 4).

Pittsburg: Journal of Managerial Issues

Tubbs, M. (2007). *The Relationship Between R&D and Company Performance*.

(Vol. 50, No. 6). England: Research Technology Management.