



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

The Predictive Value of Optimism in Letters to Shareholders

Master Degree Project in Accounting
GM0360

Graduate School

Authors: Axel Benjaminson
Jonas Vesterinen

Supervisors: Emmeli Runesson
Niousha Samani

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Axel Benjaminson and Jonas Vesterinen

Gothenburg, Sweden

Abstract

In this study, we investigate the predictive value of optimism expressed in letters to shareholders. We explore if optimism in these letters can be used to predict the future performance of 457 firms traded on the NYSE. To measure future performance, we use six different performance measures. [Patelli and Pedrini \(2014\)](#) found that optimistic tone in letters to shareholders is congruent with both past and future performance, thus arguing that it is sincere. Our study expands their research by examining if optimistic tone can predict performance up to five years after the publication of the letter to shareholders. Using univariate analysis, we find that the most optimistic firms tend to perform better than the least optimistic firms. However, through regression analysis, we are unable to find that optimism is a significant predictor for future firm performance. Based on our univariate analysis, we conclude that the most optimistic firms perform better than the least optimistic firms. However, we cannot conclude that optimism expressed in the letter successfully can predict future firm performance.

Prior research has found that impression management commonly takes place in annual reports ([Clatworthy and Jones, 2006](#)). Because of this, we argue that impression management could be used as an explanation for the lack of significant results, since the existence of impression management in annual reports would separate optimism from firm fundamentals, disabling optimism from being able to predict future performance.

Keywords: Accounting, Optimism, Letter to Shareholders, Predictive Value, Impression Management, DICTION

Contents

1	Introduction	3
2	Prior research	5
3	Research design	8
3.1	Sample	8
3.2	Textual analysis software	9
3.3	Data analysis	10
4	Results	15
4.1	Descriptive Statistics	15
4.2	Correlations	16
4.3	Univariate Analysis	16
4.4	Regression Results	20
4.5	Additional tests	22
5	Conclusion	23
6	References	26
7	Appendices	31
7.1	Appendix 1 - VIF Diagnostics	31
7.2	Appendix 2	33
7.3	Appendix 3 - Kruskal Wallis Mean Ranks	34

1. Introduction

In 2013 the chairman of the International Accounting Standards Board (IASB), Hans Hoogervorst, said that for many companies, the size of their annual report is ballooning. However, [Hoogervorst \(2013\)](#) additionally argued that the amount of useful information contained in the annual reports not necessarily had increased at the same rate. The threat of this development was that annual reports would become simple compliance documents, rather than instruments of useful information ([Hoogervorst, 2013](#)). Even though the amount of useful information has not increased at the same rate as the length of annual reports, it does not necessarily mean that the amount of useful information has remained the same. Instead, a reason that much of the information is viewed as useless may be that readers lack the ability to comprehend the information found in corporate narratives and other non-financial publications. As the exact future development of firms remains unknown to the recipients of these publications, some characteristics of this content potentially could be used in understanding the future of a corporation.

To investigate the utility of non financial information, this study will examine the predictive value of expressed optimism in the letter to shareholders.

Financial statements are regulated and, in most cases, subject to auditing. Meanwhile, the letter to shareholders is in 'free style', open to confusion and manipulation ([Balata and Breton, 2005](#)). The text within the letters to shareholders carries professional credibility and is a powerful storytelling tool that conveys strategies and corporate policies. The letters to shareholders are immediately available to billions of people through corporations' websites, which forces corporate policies to communicate a coherent message ([Geppert and Lawrence, 2008](#)). [Hyland \(1998\)](#) argues that the letter to shareholders is the most widely read part of the annual report. He further writes that the letter to shareholders has rhetorical importance in building credibility and convincing investors that the company is pursuing sound and effective strategies. [Hyland \(1998\)](#) additionally states that the letter to shareholders will seem relevant to those who use it as a guide for investments but that it also is a tool for corporations to create a dialogue with their audience. He argues that the texts often are written with the reader in mind, thus often addressing their situation. Other studies have also showed that due to public demands for transparency and information, annual reports and

letters to shareholders have been important tools for delivering information to shareholders and other readers (Clarke et al., 2009; Hooghiemstra, 2008; Tagesson et al., 2013).

Letters to shareholders purely rely on textual features, such as patterns of language (Rutherford, 2005). Recent academic research has paid attention to the market impact of the rhetorical tone in corporate narratives. Davis and Tama-Sweet (2012) studied how investors reacted to the language in corporate narratives and found that more successful firms used a less pessimistic tone compared to less successful firms. Henry (2008) found that the tone in earnings press releases affected investors' decisions. Although researchers have previously examined how firms communicate with their stakeholders (Spear and Roper, 2013), as well as the tone in corporate narratives (Abrahamson and Amir, 1996; Huang et al., 2014; Patelli and Pedrini, 2014), and found that firm performance affects the characteristics of the communication (Clatworthy and Jones, 2006), few papers focus on whether the tone expressed in letters to shareholders can predict future performance.

Patelli and Pedrini (2014) investigated the sincerity of the optimism in the letter to shareholders. In their study, they examined whether there is a correlation between optimism and past as well as one year ahead return on assets. They found that there is a positive correlation between optimism and past as well as one year ahead firm performance (Patelli and Pedrini, 2014). In this study, we try to expand their findings to find whether the optimism expressed in letter to shareholders has a predictive value that goes beyond the next year. Because of the longer time frame, we chose to study six different measures of firm performance between 2011 and 2015.

Using the letters to shareholders from 457 NYSE listed companies, we group the companies into quartiles based on optimism. By evaluating mean performance across these quartiles, we found that firms with the most optimistic letters to shareholders tend to perform better for five consecutive years than the firms with the least optimistic letters to shareholders (see section 4). These findings indicate that the optimism expressed in letters to shareholders has a positive association with firm performance. To evaluate the predictive value, we ran a multivariate regression with optimism as the predictor. Having controlled for several relevant factors, no significant correlation was found between optimism in the letters to shareholders and future firm performance.

The study contributes by expanding existing literature on the predictive value of narratives in annual reports. Prior literature has examined the char-

acteristics of accounting based data, especially earnings. On the contrary, the associated textual disclosures have previously been neglected by researchers due to the difficulty in quantifying the data (Lang and Stice-Lawrence, 2015). Previous literature has also shown that there is a positive correlation between optimism expressed in letters to shareholders and one year ahead firm performance (Patelli and Pedrini, 2014). We contribute to this stream of literature by examining whether optimism can predict firm performance in a longer time frame.

The rest of the paper is structured as follows. First, previous research within the field is presented and the hypothesis is developed. Second, the research design used for this study is described and discussed. Next, the results are presented. Lastly, conclusions are drawn, limitations are raised, contributions of our research is put forth and suggestions for future research are made.

2. Prior research

Accounting reports help investors evaluate an organization's financial prospects (Rogers and Grant, 1997). In evaluating an organization's financial prospects, financial statement analysis is a tool that can identify aspects of financial statements that are relevant to investment decisions (Ou and Penman, 1989). Evidence from prior research has shown that the content of financial statements can be used to predict future earnings (Ou and Penman, 1989; Skogsvik, 2008; Wahlen and Wieland, 2010). Ou and Penman (1989) were able to derive a summary measure from financial statements that could predict future stock returns. Skogsvik (2008) finds that financial statement information can be used to predict book-return on owners' equity. In sum, financial statements and their predictive ability has received much attention in previous research.

Annual reports consist of two sections, financial statements and narrative sections (Balata and Breton, 2005). Narratives are an important information source for analysts and a critical component in annual reports (Rogers and Grant, 1997). The letter to shareholders is a narrative in the annual report in which management and/or the board presents and discusses the firm's activities during the year and provides an overview of the firm's performance (Amernic and Craig, 2004; Bettman and Weitz, 1983; Clatworthy and Jones, 2006). The letter to shareholders contains information that is useful to investors, including qualitative explanations and interpretations that are

not part of the audited financial statements ([Abrahamson and Amir, 1996](#)). Prior research shows that firms use textual communication to interact and develop relationships with their stakeholders ([Kuhn, 2008](#)). [Andreia Costa et al. \(2013\)](#) find that a common explanation for "voluntary disclosures [such as the letter to shareholders] by companies have been based on economic efficiency arguments, agency theory, and signaling theories" (p. 433).

The way in which management uses voluntary information in corporate narratives to provide a self-interested view of company performance has been an area of growing research interest. By reviewing prior research, [Beyer et al. \(2010\)](#) found that managers have incentives for reporting good and neglecting bad news. Impression management can be viewed as the tendency for individuals or organizations to use data selectively so as to present themselves in a more favorable light. Prior literature has shown that impression management commonly takes place in annual reports ([Clatworthy and Jones, 2006](#)). Research has also shown that companies attempt to create a positive corporate image to their external stakeholders even when negative performance has occurred ([Tessarolo et al., 2010](#)).

[Huang et al. \(2014\)](#) studies abnormal positive tone in earnings press releases. Abnormal positive tone is the residual positive tone that cannot be explained by firm fundamentals. They find that abnormal positive tone predicts future negative performance and cash flows, is positively correlated with upward perception management events (such as just meeting/beating thresholds), and is negatively associated with downward perception management event (stock option grants). These findings are used to argue that managers use tone management to mislead investors about firm fundamentals ([Huang et al., 2014](#)).

While researchers have provided evidence that impression management, or tone management, takes place in corporate narratives ([Beyer et al., 2010](#); [Clatworthy and Jones, 2006](#); [Huang et al., 2014](#)), there is also a stream of literature that has found rhetorical tone to have a positive association with firm performance ([Abrahamson and Amir, 1996](#); [Patelli and Pedrini, 2014](#)).

[Kohut and Segars \(1992\)](#) studied the content in the letters to shareholders in high and low performing firms in order to discover patterns in communication strategies. Their content analysis of the top and bottom 25 firms of the Fortune 500 based on return on equity, revealed differences in content between the groups. Therefore, they argue that financial performance influence the manner in which financial results are reported in letters to shareholders.

[Fisher and Hu \(1988\)](#) investigated the predictive value of the letter to

shareholders. The participants in their study evaluated the overall tone in the letter. They would then, based on the tone, indicate whether the firm's future profit would be higher, similar, or lower than the levels for the year in which the letter was published. Fisher and Hu (1988) found that in seven out of nine cases, the participants estimates were correct, why they argue the letter to shareholders to have a predictive value. Abrahamson and Amir (1996) investigated the association between the information content in the letter to shareholders and accounting-based performance measures for past, present and future firm performance. Information content is measured as the relative number of negative words. Their findings show that negativity in the president's letter is negatively correlated with firm performance (Abrahamson and Amir, 1996). Similarly, Hildebrandt and Snyder (1981), who investigated whether the use of positive and negative words in the letters to shareholders depended on the financial performance, found that negative words are less frequent in the letter to shareholders in a financially good year than a bad year.

Another finding by Hildebrandt and Snyder (1981) is that positive words occur more frequently than negative words in letters to shareholders regardless of the financial performance. They infer that the letter to shareholders thus can be used to underplay the negative news, and replacing it with positive conclusions (Hildebrandt and Snyder, 1981). In addition to this, Capps et al. (2016), who studied natural optimism in financial reporting, writes that managers often report on certain financial measures (such as projected cash flow and future earnings) in a positive manner. Patelli and Pedrini (2014) investigate whether the optimism expressed in letters to shareholders is sincere. They examine the correlation between optimism expressed in letters to shareholders and past as well as future firm performance (measured as Return on Assets). They found a positive correlation between optimism in letters to shareholders and past as well as one year ahead performance of firms. By finding that a positive correlation exists between optimism and one year ahead firm performance, they argue that the optimism expressed in letters to shareholders is sincere.

As optimism expressed in letters to shareholders has been proven to be sincere, we expect it to have a positive correlation with future firm performance. The hypothesis that will be tested is formulated as:

$H_1 =$ There is a positive correlation between optimism in letters to shareholders and future firm performance.

3. Research design

3.1. Sample

Table 1: Sample overview

Overview of Collected Sample	
Initial Sample	799
Unavailable Letters	-325
Lack of Data	-10
Extreme Values	-4
Industries	-3
Final Sample	457

The initial sample for this study consists of 799 companies traded on the NYSE in the consumer durables, consumer non-durables, consumer services and technology sectors. These sectors are used because they are considered to be relatively similar, which helps create a more homogeneous sample. When studying annual reports, one limitation is that its format and content differ from country to country based on business culture, local rules and self-serving bias issues (Hooghiemstra, 2008, 2010; Keusch et al., 2012). These issues have been lifted and discussed in previous research (Courtis, 2004; Damak-Ayadi, 2010; Vuontisjarvi, 2006). As an attempt to avoid this, our sample consists of firms traded in the United States. It also ensures that our sample consists only of firms with English as their business language, thus creating a more homogeneous sample. The sample was collected from NASDAQ.com, and the letters to shareholders from the year 2010 were collected from the sampled companies' annual reports. As the aim of the study is to investigate the predictive value of optimism expressed in the letter to shareholders, we use 2010 as base, which enables us to examine the predictive value for the following five years.

The letters to shareholders were collected from annual reports found on the companies' websites. For firms applying a broken fiscal year, the letter to shareholders for the fiscal year which ends closest to 2010-12-31 has been collected. From the initial sample, some companies were excluded due to difficulties finding the letter to shareholders, which left us with a sample of 474 companies. Additionally, ten companies were excluded from that sample due to lack of financial data between 2010 and 2015. Also, 4 observations were removed due to outlier values for the independent variable Optimism.

Table 2: Industry distribution

Industries	Firms
Apparel	1.31
Chemical Products	1.75
Construction	1.97
Control Instruments	3.72
Electronics	7.88
Fabricated Metal	3.94
Finance, Insurance and Real Estate	19.91
Food and Kindred	6.13
Leather	0.88
Lumber and Wood	1.31
Machinery and Computer Eqtmnt	6.56
Miscellaneous	1.53
Paper and Allied Products	1.09
Primary Metal	1.31
Printing Industries	1.75
Retail Trade	8.10
Rubber and Plastic Products	1.31
Services	13.35
Stone, Clay, Glass Products	1.97
Transportation	8.53
Transportation and Publucl Utilities	3.5
Wholesale Trade	2.19
	100

To decide which values that would be considered as outliers, we removed the values that lie outside three standard deviations from the mean value. In addition to this, we removed three observations because they were the only observation within that industry. This gave us a final sample of 457 firms. The classification of industries has been made on two digit standard industry classification (SIC) (see distribution in table 2).

3.2. *Textual analysis software*

To analyze the tone of the letters to shareholders, the software DICTION is used. DICTION has been used in previous conducted studies and can be an asset to researchers conducting content analysis due to its ability to observe 'unobservables'. The software is used to analyze unique elements of language in narrative texts (Short and Palmer, 2008). The argument for

using DICTION over other choices of text analysis software is that it was developed by communication researchers and focuses on the subtle power of word choice and tone (Short and Palmer, 2008). When conducting content analysis, researcher subjectivity is often raised as an issue. Using textual analysis software for content analysis helps ensure objectivity for this research.

DICTION measures the textual tone using five master variables; Certainty, Optimism, Activity, Realism and Commonality. These master variables are calculated using 31 individual scores and four calculated variables (Hart, 2000). The master variable Optimism is calculated using the following formula (DICTION, 2013).

$$[\text{Praise} + \text{Satisfaction} + \text{Inspiration}] - [\text{Blame} + \text{Hardship} + \text{Denial}]$$

Optimism is defined by DICTION as "Language endorsing some person, group, concept or event or highlighting their positive entailments" (DICTION, 2013, pp.7). Praise is defined as affirmation of a person or group and measures only adjectives. Satisfaction measures terms that are associated with positive affective states, undiminished joy, pleasurable diversion and moments of triumph. Inspiration is a measurement of abstract virtues. Most of the terms in DICTION's dictionary are nouns that measure moral and attractive qualities as well as social and political ideals. Blame related terms are terms that are designated with social inappropriateness as well as being perceived as evil. The dictionary of words that reflect hardship contains words related to hostile actions, censurable behavior, undesirable outcomes, human fears and capacities (such as error or weakness). Denial consists of negative contradictions, negative functions words and terms signaling null sets (DICTION, 2013).

3.3. Data analysis

We investigate the predictive value of optimism in letters to shareholders in two steps. In the first, we divide the observations into quartiles based on their value of Optimism. We then compare the mean of the independent variables in the highest and lowest quartiles to determine whether they differ. In the second step we conduct a OLS regression analysis to investigate the relationship between Optimism and the performance measures. The financial data used in our models was collected from COMPUSTAT for six fiscal years

(2010, 2011, 2012, 2013, 2014 and 2015). As measures for firm performance we use six key performance indicators.

The first financial ratio used in this paper is Tobin's Q, which [Li-Chiu \(2009\)](#) argues is "probably the most widely used performance measure in empirical corporate finance" (p. 1200). In this study, Tobin's Q is defined as the market value of assets to book value of assets, and is calculated as:

$$Q = \frac{\text{book value of assets} - \text{book value of equity} + \text{market value of equity}}{\text{book value of assets}} \quad (1)$$

As previous research has discussed the benefits and issues with different performance measures and that there is no coherence regarding which key performance indicators best reflect firm performance ([Skinner, 1999](#)), this paper uses five additional performance measures that previously have been used to measure firm performance ([Alvarez, 2012](#); [Gunday et al., 2011](#); [Miller et al., 2013](#); [Patelli and Pedrini, 2014](#); [Skinner, 1999](#); [Wales et al., 2013](#)).

The additional five measures for performance in this study are: return on assets, return on equity, percentage change in revenues relative to 2010, percentage change in net income relative to 2010 and percentage change in share price relative to 2010.

In the first test, the comparison of means is executed using Kruskal-Wallis test of ranks. The Kruskal-Wallis test is used instead of One-way ANOVA because our data is non-parametric (see normality tests in appendix 7.2). As previously described, the observations are divided into four groups based on their values, where group 1 consists of the 114 firms with the highest value and group 4 consists of the 114 firms with the lowest value of . If the Kruskal-Wallis test shows significant results, at least one of the groups differ from the other. The test does, however, not show where the differences occur ([Corder and Foreman, 2009](#)). When conducting the Kruskal-Wallis H-test, the following formula is used:

$$H = \frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(N+1) \quad (2)$$

Where N is the number of values from all samples, R_i is the sum of ranks from a single sample and n_i is the number of values from the corresponding rank sum.

Although the Kruskal Wallis test has been criticized for being too conservative in rejecting the null hypothesis (Bargagliotti and Greenwell, 2014), it is a statistical test commonly used in research for comparing means between two or more independent groups.

As the Kruskal Wallis test is limited to determining if there are differences between the compared groups, we use an additional test to determine between which groups means differ. The test used to determine this is the Mann-Whitney U-test. The Mann-Whitney U-test is a non-parametric test with the null hypothesis that it is equally likely that a set of random values from one sample will be lower or greater than a set of randomly selected values from the other sample (Corder and Foreman, 2009). The Mann-Whitney U-test does not assume that the distribution is normally distributed (Corder and Foreman, 2009). When conducting the Mann-Whitney U-test, the following equation is used:

$$U_i = n_1n_2 + \frac{n_i(n_i + 1)}{2} - \sum R_i \quad (3)$$

Where U_i is the test for the sample, n_i is the number of values for sample of interests (n_1), n_2 is the number of values in sample two and $\sum R_i$ is the sum of the ranks from the sample.

In the second test, to determine the ability of optimism in the letters to shareholders to predict future performance, a regression analysis is performed. Consistent with the hypothesis, one should observe that optimism in letters to shareholders has a positive effect on future firm performance, thus having a predictive value regarding future performance. To test the hypothesis, the following regression models are used:

$$FP_{t+q} = \gamma_0 + \gamma_1 Optimism_t + \sum_{n=1}^m \alpha_n Industry_n + \gamma_3 Risk_t + \gamma_4 Size_t + \gamma_5 Income_t + \gamma_6 Age_t + \gamma_7 Div_t + \xi_t \quad (4)$$

Where FP is firm performance (measured as Q-Ratio or Change in share price) q years after year t (2010).

$$FP_{t+q} = \gamma_0 + \gamma_1 Optimism_t + \sum_{n=1}^m \alpha_n Industry_n + \gamma_2 Risk_t + \gamma_3 Size_t + \gamma_4 Income_t + \gamma_5 Age_t + \xi_t \quad (5)$$

Where FP is firm performance (measured as ROA, ROE, change in revenue and change in net income) q years after year t (2010).

Given that Optimism is not the only determinant that affects firm performance, several control variables are included to isolate additional factors that might influence the association between Optimism and future firm performance. Based on prior research, five control variables have been chosen to control for these effects. These control variables are: industry, risk, firm size, income, firm age and dividends.

As there may be differences between industries in regard to future performance, which could have confounding properties, industry dummies are included in the regression.

Prior research has shown that higher risk is associated with worse performance. We use financial leverage as a measure for risk as highly leveraged firms' are considered to be riskier and thus underperform compared to firms with low leverage (Spear and Roper, 2008). Li-Chiu (2009) argues that financial leverage diminishes firms' ability to invest, thus making them less viable in exploiting changes to affect their competitive advantages and performance. Bolton and Scharfstein (1990) argues that firms with high leverage have less flexibility in the market, which leads to less leveraged firm gaining market shares. Therefore, we expect a negative relationship between future firm performance and risk. In this paper, firm leverage is calculated as total debt over total equity.

Firm size is used to control for potential advantages of scale and market power (Li-Chiu, 2009). Firm size is measured as the book value of total assets, which is logged to normalize the variable. Smaller firms are intrinsically riskier from the market's perspective (Li-Chiu, 2009). Therefore, we expect firm size to have a positive effect on future performance.

Net income (or loss) for the year 2010 is used as a control variable as we assume it to have an effect on both expressed in the 2010 letters to shareholders and future performance. The variable has been scaled by 1000 to make interpretations more clear.

Firm age is used as a control variable, as prior research has shown that it is a variable that is associated with numerous firm characteristics. However,

earlier research has shown contradictory results of the implications of firm age. [Lipczinsky and Wilson \(2001\)](#) argues that younger firm are expected to have less earnings than older ones as they have less experience in the market, have higher capital costs and often are in a phase of establishing a market position. On the contrary, [Geppert and Lawrence \(1995\)](#) finds that firm performance and growth have a negative correlation to firm age. As older firms could be at a later stage in their product cycle, with declining earnings, one could argue that the effect of firm age could be visualized as an inverse U-graph ([Smith et al., 2006](#)). Due to difficulties collecting data and measuring firm age, this variable is calculated as the difference between 2010 and the year of initial public offering.

The dividends variable is calculated as dividends in the year of 2010, divided by stock price. As dividends in previous research has been shown to have an impact on stock price ([Boucher, 2006](#)), this measure is used as a control variable. Because Tobin's Q and stock price are not fully accounting based measures, the additional control variable controls for factors that may affect the stock trading price. This control variable is not included in the regressions for the other four performance measures.

All regressions are run with robust standard errors to control for heteroskedasticity.

4. Results

4.1. Descriptive Statistics

Descriptive statistics for all dependent and independent variables, except for the industry dummy variables, are presented in table 3 and 4. Firm size is logged, in order to normalize the variable. Net income for 2010 is scaled by 1000 in order for the interpretation of the variable to be more clear. All dependent variables (Q-Ratio, Delta share price, ROA, ROE, Delta revenue, Delta income) are winsorized at the 0.01 level to deal with extreme outliers.

Table 3: Descriptive statistics (Dependent variables)

Variables	N	Mean	Std. Deviation	Minimum	Maximum
Optimism	457	54.30	2.40	47.92	63.92
Q-Ratio (2011)	457	1.62	0.83	0.76	4.97
Q-Ratio (2012)	457	1.72	0.90	0.81	6.09
Q-Ratio (2013)	457	1.92	1.07	0.89	6.88
Q-Ratio (2014)	457	1.96	1.04	0.83	6.62
Q-Ratio (2015)	457	1.84	0.95	0.71	5.35
ROA (2011)	457	0.05	0.07	-0.24	0.26
ROA (2012)	457	0.05	0.06	-0.13	0.24
ROA (2013)	457	0.06	0.06	-0.09	0.27
ROA (2014)	457	0.06	0.06	-0.10	0.28
ROA (2015)	457	0.05	0.06	-0.16	0.22
ROE (2011)	457	0.15	0.55	-2.00	3.65
ROE (2012)	457	0.14	0.29	-0.74	1.72
ROE (2013)	457	0.12	0.24	-0.90	1.12
ROE (2014)	457	0.15	0.29	-0.66	1.68
ROE (2015)	457	0.15	0.39	-1.33	2.12
ΔShare price (2011)	457	-3%	29%	-63%	89%
ΔShare price (2012)	457	16%	39%	-68%	133%
ΔShare price (2013)	457	48%	69%	-60%	328%
ΔShare price (2014)	457	64%	91%	-76%	451%
ΔShare price (2015)	457	53%	99%	-86%	452%
ΔIncome (2011)	457	-9%	247%	-1441%	814%
ΔIncome (2012)	457	-48%	507%	-3870%	1121%
ΔIncome (2013)	457	-16%	393%	-2225%	1349%
ΔIncome (2014)	457	34%	459%	-1881%	2304%
ΔIncome (2015)	457	1%	471%	-2350%	1834%
ΔRevenue (2011)	457	12%	22%	-28%	134%
ΔRevenue (2012)	457	22%	43%	-47%	282%
ΔRevenue (2013)	457	31%	58%	-52%	385%
ΔRevenue (2014)	457	46%	94%	-54%	654%
ΔRevenue (2015)	457	51%	113%	-57%	787%

Table 4: Descriptive statistics (Independent variables)

	Mean	Std. Deviation	Minimum	Maximum
Optimism	54.30	2.40	47.92	63.92
Risk (2010)	1.11	19.92	-135.00	385.15
Firm Size	7.97	1.54	4.54	12.79
Net Income (2010)	0.55	1.61	-3.14	16.39
Firm Age	25.12	15.82	0.00	51.00
D/P (2010)	6.27	19.65	0.00	212.66

4.2. Correlations

A Spearman test for all independent variables (except industry dummies) is performed to test for multicollinearity among the independent variables (see table 8). As shown in table 5, the conducted Spearman test indicates 0.672 correlation between size and income and 0.520 correlation between size and D/P. Even though some correlation is present between these variables, the correlations are not high enough for excluding these variables in our models. VIF diagnostics were used after the regressions was run as an additional test for multicollinearity. The VIF diagnostics revealed no values that lie outside the acceptable limits, enabling us to argue that multicollinearity does not appear among our independent variables. See appendix 7.1 for the full VIF diagnostics.

Table 5: Spearman Correlations

	Optimism	Risk	Firm Size	Net Income	Firm Age	D/P
Optimism	1					
Risk	0.071	1				
Firm Size	0.071	0.353***	1			
Net Income	0.122***	0.039	0.672***	1		
Firm Age	-0.002	0.001	0.195***	0.214***	1	
D/P	0.104**	0.266***	0.520***	0.414***	0.201***	1

*, **, *** indicates $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively

4.3. Univariate Analysis

To explore the difference between more optimistic and less optimistic firms, we split the sample into quartiles based on Optimism, giving rank 1 to

the most optimistic quartile and rank 4 to the least optimistic quartile. Contrary to [Patelli and Pedrini \(2014\)](#) we divide our groups based on the amount of Optimism in 2010, instead of basing the groups on future performance. The rationale for this is that the quartile a firm would be in would differ each year based on their performance that particular year. Additionally, as we use multiple performance measures the applied method simplified our research considerably compared to the method [Patelli and Pedrini \(2014\)](#) applies.

The Kruskal Wallis H test results (see table 6) show that the mean rank for Q-Ratio and ROA significantly ($p < 0.05$) differ between some of the quartiles of Optimism. However, the test is unable to tell between which groups the mean ranks differ. By examining the mean ranks (see appendix 7.3) for Q-Ratio and ROA, an association between Optimism and firm performance for the years 2011-2015 can be identified.

Additionally, the Kruskal Wallis H test shows an indication that, although the test is not significant for all performance measures, the least optimistic quartile of firms tend to perform worse than the other firms for all the years examined. [Hildebrandt and Snyder \(1981\)](#) found that negative words occurred less frequently in a financially good year than a bad year and that positive words occur more frequently than negative words in general. While their study did not regard the relationship between tone and future firm performance, a similar reasoning could perhaps be used to explain why the least optimistic quartile of firm tend to perform worse. That is, negativity would occur more frequently in letters to shareholders when financial prospects are relatively worse.

As an appropriate post hoc test, to find between which quartiles of Optimism Q-Ratio and ROA differ, Mann-Whitney U tests were conducted. The test results (table 7) show that between quartiles 1 and 4 (i.e. the least optimistic and most optimistic firms) there are significant differences ($p < 0.05$) in mean rank. The mean rank for Q-Ratio and ROA is higher for the most optimistic firms than for the least optimistic firms. This enables us to argue that the most optimistic firms have higher ROA and Q-Ratio than the least optimistic firms for the years 2011 to 2015, which could indicate that the optimism expressed in letters to shareholders has some predictive value.

Our findings in the univariate analysis follow prior research in the field, which has found there to be a positive association between optimistic tone expressed in letters to shareholders and firm performance ([Patelli and Pedrini, 2014](#)) Our results expand prior literature by indicating that the relationship between tone and firm performance potentially goes beyond past performance

Table 6: Kruskal Wallis H-test results

Q-ratio				ΔShare price			
Year	Chi-Square	df	sig.	Year	Chi-Square	df	sig.
2011	15.26	3	0.00	2011	5.87	3	0.12
2012	11.95	3	0.01	2012	0.39	3	0.94
2013	9.71	3	0.02	2013	0.57	3	0.90
2014	11.71	3	0.01	2014	3.71	3	0.30
2015	14.37	3	0.00	2015	9.17	3	0.03

ROA				ROE			
Year	Chi-Square	df	sig.	Year	Chi-Square	df	sig.
2011	12.27	3	0.01	2011	5.71	3	0.13
2012	9.28	3	0.03	2012	4.77	3	0.19
2013	16.84	3	0.00	2013	7.32	3	0.06
2014	14.76	3	0.00	2014	7.39	3	0.06
2015	10.97	3	0.01	2015	6.55	3	0.09

ΔRevenue				ΔIncome			
Year	Chi-Square	df	sig.	Year	Chi-Square	df	sig.
2011	7.80	3	0.05	2011	7.52	3	0.06
2012	2.49	3	0.48	2012	4.93	3	0.18
2013	1.82	3	0.61	2013	7.54	3	0.06
2014	0.56	3	0.90	2014	6.53	3	0.09
2015	1.46	3	0.69	2015	7.32	3	0.06

Significant Chi-Square value indicates that at least two of the groups differ significantly

and one year ahead performance.

The Mann-Whitney U test does, however, also report a significant difference in mean rank between quartile 1 and 2 regarding both ROA and Q-Ratio, where quartile 2 has a higher mean rank than quartile 1. The reasoning mentioned above regarding why the least optimistic quartile seem to perform worse than the other quartiles could be used to partly explain this result. However, it cannot be used to explain why quartiles 2 and 4 have similar mean ranks.

For the other four performance measures (ROE, Change in Share price, Change in Revenue and Change in Income), there are no significant differences in mean rank between the firms in each quartile. Mann-Whitney U

Table 7: Mann Whitney U test results

Year	Percentile Group of	N	Mean Rank (Q-ratio)	Z Statistic (Q-Ratio) ¹	Mean Rank (ROA)	Z Statistic (ROA) ¹
2011	1	114	99.29	-3.063***	102.18	-3.193***
	4	114	129.71		126.82	
2012	1	114	100.53	-2.626***	102.36	-2.465**
	4	114	128.47		126.64	
2013	1	114	102.84	-2.655***	100.36	-3.442***
	4	114	126.16		128.64	
2014	1	114	102.09	-3.023***	104.00	-3.651***
	4	114	126.91		125.00	
2015	1	114	100.89	-3.341***	105.12	-2.922***
	4	114	128.11		123.88	

*, **, *** indicates $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.

¹ Z statistic indicates significance between groups 1 and 4

tests were therefore not conducted for these measures.

The fact that results were not consistent for all performance measures is expected as the measures to a large degree differ. Our results indicate that more optimistic firms perform better than less optimistic firms. However, results largely depends on which performance measure one uses.

4.4. Regression Results

Table 8: Regression Results

	Q-Ratio 2011	Q-Ratio 2012	Q-Ratio 2013	Q-Ratio 2014	Q-Ratio 2015
Intercept	0.372 (0.45)	1.123 (1.12)	1.421 (1.41)	1.448 (1.36)	0.963 (1.25)
Optimism	0.032* (1.88)	0.022 (1.19)	0.024 (1.12)	0.017 (0.79)	0.015 (0.91)
Risk	-0.001 (-1.57)	-0.001 (-0.96)	-0.002 (-1.51)	-0.002 (-1.48)	0.000 (-0.31)
Size	-0.094*** (-3.21)	-0.106*** (-3.28)	-0.159*** (-3.77)	-0.107*** (-2.93)	-0.043 (-1.41)
Net Income	0.066** (1.96)	0.058* (1.72)	0.065** (1.99)	0.042 (1.35)	0.030 (0.91)
Age	-0.003 (-1.21)	-0.002 (-0.96)	-0.003 (-0.90)	-0.001 (-0.17)	0.001 (0.21)
D/P	0.005*** (2.65)	0.005*** (2.84)	0.005*** (2.72)	0.005*** (2.80)	0.005** (2.36)
	ROA 2011	ROA 2012	ROA 2013	ROA 2014	ROA 2015
Intercept	-3.634 (-0.34)	0.386 (-0.16)	0.368 (0.14)	-0.244 (-0.17)	0.785 (0.23)
Optimism	0.171 (1.15)	0.118 (1.17)	0.096 (0.84)	0.108 (0.84)	0.048 (0.43)
Risk	-0.034*** (-3.88)	-0.019 (-1.75)	-0.025* (-1.88)	-0.0198*** (-2.76)	-0.0140* (-1.67)
Size	-0.422 (-1.51)	-0.579*** (-2.68)	-0.397* (-1.90)	-0.246 (-1.18)	-0.042 (-0.18)
Net Income	0.800*** (2.81)	0.656*** (2.36)	0.504** (2.45)	0.471** (2.44)	0.515** (2.47)
Age	-0.012 (-0.58)	0.026 (1.43)	0.009 (0.48)	0.000 (0.02)	-0.002 (-0.09)

, **, * indicates $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.
Robust t-statistics in parentheses
Industry fixed effects have been included in all models*

The univariate analysis indicates that there is a positive association between Optimism in letters to shareholders and firm performance, measured as either Q-Ratio or ROA. In order to test if there is congruence between Optimism and future firm performance we ran a regression model between Optimism in 2010 and future firm performance (Q-Ratio, ROA, ROE, Delta income, Delta revenue and Delta share price). A significant effect of Optimism on future performance, after controlling for relevant variables, would indicate that the Optimism in letters to shareholders has a predictive value regarding firm performance. Our models for these tests are described in section 3.3.

Table 9: Regression Results

	Δ Revenue 2011	Δ Revenue 2012	Δ Revenue 2013	Δ Revenue 2014	Δ Revenue 2015
Intercept	10.924 (-0.34)	100.176 (1.30)	136.066 (1.34)	211.099 (1.34)	188.088 (0.98)
Optimism	0.591 (1.04)	-0.022 (-0.02)	-0.062 (-0.03)	-0.184 (-0.06)	0.967 (0.26)
Risk	-0.0512*** (-3.31)	-0.124*** (-3.27)	-0.160** (-2.04)	-0.256** (-2.52)	-0.318*** (-2.93)
Size	-1.882** (-2.14)	-5.030*** (-2.90)	-8.051*** (-3.53)	-15.160*** (-4.18)	-17.874*** (-4.29)
Net Income	0.469 (0.88)	1.735* (1.84)	2.610** (2.09)	4.623** (2.31)	5.978** (2.51)
Age	-0.257*** (-3.85)	-0.442*** (-3.27)	-0.663*** (-3.69)	-0.928*** (-3.40)	-1.307*** (-3.84)
	Δ Share price 2011	Δ Share price 2012	Δ Share price 2013	Δ Share price 2014	Δ Share price 2015
Intercept	-12.757 (-0.83)	35.476 (0.25)	83.847 (0.25)	7.368 (0.25)	-59.111 (0.25)
Optimism	0.396 (0.74)	0.019 (0.02)	0.014 (0.02)	1.943 (0.02)	2.912 (0.02)
Risk	-0.160*** (-4.87)	-0.170** (-2.18)	-0.368** (-2.18)	-0.499** (-2.18)	-0.350 (-2.18)
Size	-2.060* (-1.75)	-3.378** (-2.14)	-8.230*** (-2.14)	-7.063** (-2.14)	-6.956* (-2.14)
Net Income	0.545 (0.62)	-0.750 (-0.52)	-0.972 (-0.52)	-2.980 (-0.52)	-2.693 (-0.52)
Age	0.174* (1.89)	0.258** (1.98)	0.302 (1.98)	0.290 (1.98)	0.496 (1.98)
D/P	0.077 (1.47)	0.093 (1.14)	-0.107 (1.14)	-0.054 (1.14)	0.071 (1.14)

*, **, *** indicates $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.
t-statistics in parentheses
Industry fixed effects have been included in all models

The regression results for the performance measures between 2011 and 2015 are shown in tables 8, 9 and 10.

Using risk, size, net income, firm age and industry as control variables for Q-Ratio the results show an indication ($p < 0.1$) of association between Optimism in 2010 and the Q-ratio in 2011. However, there is no significant association between Optimism and the Q-ratio between 2012 and 2015. These results indicate that Optimism may have a predictive value on the Q-ratio the following year, although our results does not imply a predictive value ahead of a one year time frame.

For the additional performance measures (Share price, ROA, ROE, Rev-

Table 10: Regression Results

	Δ Revenue 2011	Δ Revenue 2012	Δ Revenue 2013	Δ Revenue 2014	Δ Revenue 2015
Intercept	10.924 (-0.34)	100.176 (1.30)	136.066 (1.34)	211.099 (1.34)	188.088 (0.98)
Optimism	0.591 (1.04)	-0.022 (-0.02)	-0.062 (-0.03)	-0.184 (-0.06)	0.967 (0.26)
Risk	-0.0512*** (-3.31)	-0.124*** (-3.27)	-0.160** (-2.04)	-0.256** (-2.52)	-0.318*** (-2.93)
Size	-1.882** (-2.14)	-5.030*** (-2.90)	-8.051*** (-3.53)	-15.160*** (-4.18)	-17.874*** (-4.29)
Net Income	0.469 (0.88)	1.735* (1.84)	2.610** (2.09)	4.623** (2.31)	5.978** (2.51)
Age	-0.257*** (-3.85)	-0.442*** (-3.27)	-0.663*** (-3.69)	-0.928*** (-3.40)	-1.307*** (-3.84)

	Δ Share price 2011	Δ Share price 2012	Δ Share price 2013	Δ Share price 2014	Δ Share price 2015
Intercept	-12.757 (-0.83)	35.476 (0.25)	83.847 (0.25)	7.368 (0.25)	-59.111 (0.25)
Optimism	0.396 (0.74)	0.019 (0.02)	0.014 (0.02)	1.943 (0.02)	2.912 (0.02)
Risk	-0.160*** (-4.87)	-0.170** (-2.18)	-0.368** (-2.18)	-0.499** (-2.18)	-0.350 (-2.18)
Size	-2.060* (-1.75)	-3.378** (-2.14)	-8.230*** (-2.14)	-7.063** (-2.14)	-6.956* (-2.14)
Net Income	0.545 (0.62)	-0.750 (-0.52)	-0.972 (-0.52)	-2.980 (-0.52)	-2.693 (-0.52)
Age	0.174* (1.89)	0.258** (1.98)	0.302 (1.98)	0.290 (1.98)	0.496 (1.98)
D/P	0.077 (1.47)	0.093 (1.14)	-0.107 (1.14)	-0.054 (1.14)	0.071 (1.14)

*, **, *** indicates $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.
t-statistics in parentheses
Industry fixed effects have been included in all models

enue, Income), there is no significant association between Optimism and performance the following five years. For ROA, our results did not coincide with the findings by [Patelli and Pedrini \(2014\)](#), who found a significant association between Optimism and ROA the following year.

4.5. Additional tests

Additional tests have been run to increase the robustness of our research. For each regression model non-significant control variables have been removed. For the regressions on Q-Ratio, risk and firm age were removed. For the regressions on ROA, firm age was removed. For the regressions on

change in share price, net income and D/P were removed. For the regressions on ROE, firm size was removed. For the regressions on change in net income, all controls except industry were removed. The results from these tests did not change compared to the main regressions regarding Optimism. Optimism is in none of these regressions a significant predictor for future performance.

In addition to the above tests, we conducted a regression without controlling for industry effects. When removing the control variable for industries, results are significant ($p < 0.05$) for Optimism and Q-ratio in 2011. For Q-ratio between 2012 and 2015 results are not significant, however there is an indication that Optimism can predict future performance ($p < 0.1$). Nonetheless, the R^2 square value is lower in each regression when removing the industry dummies, which points at the importance of controlling for industries.

Finally, we performed the same regressions as presented in section 3 but without transformation of the variables. These regressions did not show different results regarding Optimism compared to the main regression.

5. Conclusion

Letters to shareholders have received increasing amounts of attention in research. More specifically, the tone or content has been studied to find what information corporations communicate, how they communicate the information and why. We analyze the tone expressed in the letters to shareholders in an attempt to find whether the tone can predict future performance for firms.

We find that the most optimistic firms perform better than the least optimistic firms (measured by Q-Ratio and ROA). However, the regression results do not yield a statistically significant ($p < 0.05$) correlation between Optimism in letters to shareholders and future performance. Although the regression analysis does not support Optimism being able to predict future performance, the univariate analysis findings can be used to argue for an association between firm performance and Optimism in letters to shareholders. As researchers previously has found that tone and content in the letter to shareholders are congruent with firm performance (Abrahamson and Amir, 1996; Hildebrandt and Snyder, 1981; Patelli and Pedrini, 2014), these findings are not too surprising. However, previous research has studied either

the association between past performance and tone or one year ahead performance and tone. By finding that the most optimistic firms perform better (measured by Q-Ratio and ROA) than the least optimistic firms for five consecutive years we are able to argue that the letter to shareholders contains information that is relevant for a longer time frame than what previously has been found.

As [Patelli and Pedrini \(2014\)](#) found that there is a positive correlation between Optimism and one year ahead ROA, it is of interest that in this study - where the correlation between ROA and Optimism has been studied - no similar results are found. Our study can therefore not confirm their findings. We do, however, find that the most optimistic firms show higher ROA and Q-Ratio than the least optimistic firms. Those findings could be used to strengthen their findings.

Our study uses six different measures for performance. As presented in section 3, results are not consistent between these performance measures. As research is inconsistent in regard to which measures best reflect the general performance of a firm, researchers may yield various results in similar studies based on which measure is used for performance. Additionally, one could argue that different KPIs may better reflect performance in different industries, thus making it difficult to investigate performance cross industries.

Previous research has shown that managers have incentives and tend to report good news while rejecting bad [Kuhn \(2008\)](#). This could be an additional factor explaining why no significant association between Optimism and performance is found in our regression analysis. ([Clatworthy and Jones, 2006](#)) also show that impression management often is present in annual reports. While our univariate analysis shows that more optimistic firms have a higher Q-ratio and ROA in the future, the existence of impression management could explain the lack of significant regression results. This since the use of impression management would separate the tone communicated through the letters to shareholders from fundamentals, making Optimism less useful for predicting future performance.

In regard to impression management, one could argue that managers are more willing to sincerely report on past performance in their letter to shareholders compared to sincerely give indications of their future performance. One reason for why this might be true can be the nature of the annual reports. Since the way to present past performance in financial statements is regulated and, in most cases, subject to auditing ([Balata and Breton, 2005](#)), it is more difficult for management to affect the way past performance is

perceived by the readers of annual reports. On the contrary, future performance of firms remain unknown to the readers, giving management more opportunities to mislead readers.

Based on our findings, we draw conclusions that contribute to literature regarding the predictive ability of qualitative disclosures. Previous literature has shown that there is an association between tone and past performance as well as one year ahead firm performance. We extend this stream of literature by finding that the most optimistic firms perform better (performance measured as ROA or Q-Ratio) than the least optimistic firms for five years ahead.

We suggest that future research should examine other aspects of textual features in the annual report and future performance. We also suggest future papers to investigate qualitative aspects of other firm publications (e.g. earnings or quarterly reports) and to what extent they could be used to predict future aspects of firms. Due to issues collecting a sample consisting of letters to shareholders for publicly traded U.S. firms (see section 3.1), we welcome researchers to analyze the content of the first part of companies 10K filings. Even though these documents are more restricted in their form than annual reports, the first part of these forms, among other things, consists of descriptions of companies' operations, markets and competition. As the textual features of 10K reports may include relevant information and have been overlooked in current research, we encourage it to be further investigated.

The conclusions we provide come with some limitations. Firstly, although we found indications that firms with more optimistic letters to shareholders performed better, one caveat of this study is that to determine whether a firm would perform better largely depended on which measure one uses for performance. Secondly, although using software-based textual analysis helps ensure objectivity and increases reliability, our results are affected by the weaknesses of DICTION. More specifically, DICTION is not able to understand the context in which a word appears. This shortcoming may affect our results. Finally, issues regarding the availability of letters to shareholders may have caused the sample to deviate from the original population. The availability limitation could be avoided by investigating another source of communications, as described above.

6. References

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7. Appendices

7.1. Appendix 1 - VIF Diagnostics

Table 11: VIF Diagnostics

Variable	VIF
Optimism	1.061
Apparel	1.065
Chemical Products	1.100
Construction	1.088
Control instruments	1.173
Electronics	1.321
Fabricated Metal	1.190
Food and Kindred Products	1.334
Leather	1.052
Lumber and Wood	1.111
Machinery and Computer	1.325
Miscellaneous	1.106
Paper and Allied Products	1.056
Primary Metal	1.068
Printing Industries	1.090
Retail Trade	1.357
Rubber and Plastic Products	1.067
Services	1.521
Stone, Clay, Glass Products	1.085
Transportation	1.407
Transportation and Public	1.169
Wholesale Trade	1.228
Size	1.612
Income	1.845
Firm Age	1.221
Risk	1.105
D/P	1.587

Reference group: Finance, Insurance and Real Estate

Table 12: VIF Diagnostics

Variable	VIF
Optimism	1.059
Apparel	1.065
Chemical Products	1.100
Construction	1.087
Control instruments	1.168
Electronics	1.317
Fabricated Metal	1.190
Food and Kindred Products	1.333
Leather	1.052
Lumber and Wood	1.066
Machinery and Computer	1.321
Miscellaneous	1.086
Paper and Allied Products	1.056
Primary Metal	1.068
Printing Industries	1.090
Retail Trade	1.357
Rubber and Plastic Products	1.067
Services	1.516
Stone, Clay, Glass Products	1.085
Transportation	1.396
Transportation and Public	1.164
Wholesale Trade	1.228
Size	1.568
Income	1.531
Firm Age	1.216
Risk	1.105

Reference group: Finance, Insurance and Real Estate

7.2. Appendix 2

Table 13: Normality test

	Shapiro-Wilk		
	Statistic	df	Sig.
Q-Ratio (2011)	0.786	457	0.000
Q-Ratio (2012)	0.765	457	0.000
Q-Ratio (2013)	0.748	457	0.000
Q-Ratio (2014)	0.780	457	0.000
Q-Ratio (2015)	0.820	457	0.000
Δ Share price (2011)	0.976	457	0.000
Δ Share price (2012)	0.969	457	0.000
Δ Share price (2013)	0.868	457	0.000
Δ Share price (2014)	0.853	457	0.000
Δ Share price (2015)	0.848	457	0.000
ROA (2011)	0.928	457	0.000
ROA (2012)	0.964	457	0.000
ROA (2013)	0.945	457	0.000
ROA (2014)	0.945	457	0.000
ROA (2015)	0.946	457	0.000
ROE (2011)	0.520	457	0.000
ROE (2012)	0.721	457	0.000
ROE (2013)	0.758	457	0.000
ROE (2014)	0.704	457	0.000
ROE (2015)	0.658	457	0.000
Δ Revenue (2011)	0.749	457	0.000
Δ Revenue (2012)	0.642	457	0.000
Δ Revenue (2013)	0.649	457	0.000
Δ Revenue (2014)	0.554	457	0.000
Δ Revenue (2015)	0.565	457	0.000
Δ Income (2011)	0.614	457	0.000
Δ Income (2012)	0.377	457	0.000
Δ Income (2013)	0.614	457	0.000
Δ Income (2014)	0.630	457	0.000
Δ Income (2015)	0.665	457	0.000

7.3. Appendix 3 - Kruskal Wallis Mean Ranks

Table 14: Kruskal Wallis Mean Ranks

Year	Percentile Group	N	Q-Ratio	Delta			Delta Revenue	Delta Income
				Shareprice	ROA	ROE		
2011	1	114	187,66	205,21	193,20	203,98	202,38	200,89
	2	115	241,18	241,29	248,80	242,09	229,33	235,23
	3	114	238,29	227,11	230,77	233,29	250,50	246,35
	4	114	248,76	242,28	243,06	236,53	233,79	233,47
2012	1	114	192,96	222,91	198,11	206,74	212,98	207,28
	2	115	239,69	230,02	241,98	230,28	233,30	245,96
	3	114	234,76	229,45	229,62	242,04	239,18	217,51
	4	114	248,50	233,61	246,17	236,93	230,50	245,10
2013	1	114	196,21	223,98	196,01	203,70	218,65	207,31
	2	115	243,03	236,42	254,47	237,07	241,65	251,70
	3	114	233,93	229,13	212,57	226,03	229,66	230,53
	4	114	242,71	226,41	252,74	249,14	225,92	226,26
2014	1	114	194,07	213,79	196,26	201,35	223,21	213,51
	2	115	247,77	241,38	260,78	244,01	234,31	256,30
	3	114	230,35	220,94	220,20	229,78	232,70	217,68
	4	114	243,64	239,78	238,48	240,73	225,74	228,26
2015	1	114	191,05	207,90	203,68	204,80	222,69	213,53
	2	115	250,44	255,80	255,65	249,12	236,46	256,27
	3	114	228,19	215,66	215,56	230,59	236,35	217,68
	4	114	246,13	236,40	240,88	231,32	220,43	228,28