THE ADOPTION OF GRI-PRACTICES AND THE EFFECT ON FINANCIAL PERFORMANCE

Master Thesis, Accounting, Auditing and Control

Abstract:

The Global Reporting Initiative claims that the adoption of their standards improves the quality of reporting and facilitates integrated thinking. Previous studies find that higher quality reporting leads to better financial performance. Therefore In this paper I examine the relation between the adoption of GRI-practices and the affects it has on the financial performance of firms. I hypothesize, but do not find that firms that indulge in GRI-practices have an increase in their stock market performance and expected future cash flows. Also I was not able to find a relation between the adoption of GRI-practices and the cost of equity capital. These results are not consistent with prior findings, where voluntary qualitative disclosure leads to better financial performance. Finally, the effects of GRI-practices, and the value it creates for firms and their stakeholders, as proclaimed by the GRI standard setters, is still difficult to capture.

Saad Jadoon
403642
Master Accounting, Auditing and Control
Thesis Coordinator: Ekaterina Isakina
Erasmus University
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1. Research question and motivation

The purpose of this study it to examine the relation between applying GRI-practices and the effect it has on the financial performance of a firm. More specifically this research will examine if firms that apply GRI are (on average more profitable and) better performing in comparison to firms that do not apply the same practices. This research will eventually attempt to answer the following research question:

RQ: *Does the application of GRI have a positive effect on the financial performance of firms?*

Over the last decades a small but growing group of firms have begun to voluntarily integrate social and environmental aspects in their business models and organizational processes. They have also started reporting this (integrated) information in their annual reports. While firms have adopted and implemented corporate social responsibility (CSR) activities, a number of independent agencies such as Kinder, Lyndenberg and Domini (KLD), Bloomberg and Thomson Reuters ASSET 4 are rating and ranking these firms based on their corporate social performance (CSP) (Ioannou and Serafeim, 2012). CSP, is the outcome when firms adopt CSR activities (Wood, 1991). Recent studies conducted by Sen and Battacharya (2001), Ioannou and Serafeim (2010) and Bechetti, Ciciretti and Hasan (2009) find that when independent institutions rate and rank firms based on their CSP and adoption of CSR it significantly influences the behavior of investors and sell-side analysts, it facilitates their decision-making ability. Yet the CSP is still significantly variated across firms, industries and countries (Ioannou and Serafeim, 2012). Taking CSR, CSP and the integration of information in mind Serafeim (2014) has conducted a research on Integrated Reporting and Investor Clientele, he finds that firms that practice the concept of Integrated Reporting, and incorporate social, environmental and financial information, have a more long-term oriented investor base with more dedicated investors. These findings are in accordance with Sen and Battacharya (2001), Ioannou and Serafeim (2010) and Bechetti et al. (2009).

My study builds on this prior and current research that provides results in regard to the relation between corporate social responsibility reporting, environmental disclosure and financial performance. It is important to provide an answer to this question because as prior literature finds, there is still a big difference between CSR and CSP among industries and countries. The Global Reporting Initiative provides standards, that are most commonly used for sustainability reporting. Given that the GRI Sustainability Disclosure database consists of more than 30.000 annual reports published in accordance with the GRI guidelines and principles, it can be

concluded that these principles are acknowledged worldwide as standards for sustainability (Fenchel, 2003). The application of these standards increases the comparability of (social) reporting. GRI provides methods in order to narrow the gap between integrated thinking of executives and sustainability and financial reporting practices of firms (Meehan, Chief Executive, GRI). The answer to the research question is therefore of benefit to GRI-standard setters, firms and investors, due to the fact that prior literature has not been consistent in regard to their findings on the matter. For instance, Richardson and Welker (2001) find a significant positive association between social disclosure and the cost of equity capital. Dhaliwal and Yang (2010) find results of a negative relation between the two aspects. Other studies such as Clarkson and Richardson's (2010) fail to find a significant relation at all. Research conducted by Plumlee et al. (2010), which is the main driver for my research, find that environmental disclosures are relatively more informative to alternative measures for environmental performance which help predict the profitability, firm value and the cost of equity capital. Therefore in this research I answer this call, and explore if the application of GRI-practices significantly influence the behavior of investors (shareholders), firms, sell-side analysts (Sen and Battacharya, 2001, Ioannou and Serafeim, 2010 and Bechetti et al., 2009) and if it leads to a better financial performance in comparison to firms that do not apply the same methods. Whereby investors, firms and sell-side analysts are seen as stakeholders and financial performance is translated into market performance, cash flow expectations and cost of equity capital in accordance with Plumlee et al. (2010).

I have chosen the Netherlands to do my research on, due to fact that the country has been applying GRI-practices for over 15 years. Furthermore it is one of the leading countries where the application of these particular standards is quite common. Therefore in order to see if GRI-practices improve the quality of disclosure and if it leads to a better understanding of the firm and their financial performance, the Netherlands is the perfect market to research the effect. I construct a sample of 74 unique listed Dutch firms, for which I have data both on the application of GRI and their financial performance, between 2013 and 2015.The financial performance of firms that I want to measure in this study is translated into three variables, the stock market's performance, the expected cash flow and the cost of equity capital. I hypothesize that the application of GRI-practices by firms significantly improves their financial performance, by conducting OLS regressions. The results are controlled for by taking the market value (size) of the firms, the total sales, abnormal earnings, cash flow per share and beta (monthly returns). I find that the application of GRI-practices are not significantly associated with the financial

performance of firms. There is no significant relation with the stock-market price, the expected cash flow and the cost of equity capital. The results are not consistent with prior literature, where sustainability reporting is found to have a relation with the financial performance of firms (Plumlee et al. 2010 and Serafaim 2014). Moreover the results remain unaffected when I conduct additional analysis, where Transparency Benchmark scores are included. The Transparency Benchmark is a self-assessment facilitated by the Dutch Ministry of Economic Affairs. It is organized annually in order to assess the extent to which firms account for their activities regarding Corporate Social Responsibility (CSR) in their annual report. Therefore I conclude that I was not able to find that the application of GRI-practices has a positive effect on the financial performance of firms.

The importance of the research lays in the fact that the purpose of GRI is to create value for stakeholders, in order to do so firms have to provide reports that integrate financial and non-financial information. Ioannou and Serafiem (2013) present results in their paper that support the statement that increased disclosure is associated with increases in firm (market) value. Additionally, Cheng et al. (2014) find that firms that provide more sustainability disclosure face lower costs of equity capital, and as a result have better access to finance. Dhaliwal et al. (2012), also support this finding. GRI aims to combine these aspects, therefore this paper documents the effects of the application of these practices and the value and performance it leads to. Furthermore there is no specific research done on the financial effects of GRI adoption, therefore this study is a first to conduct research on the matter. Moreover this research provides stakeholders with potential relevant information on the effects of GRI-practices.

The outcome of this paper does not provide robust results in regard to the effects of the application of GRI-practices. Nevertheless it does start a discussion on the matter, to what extent does GRI provide value to the stakeholders and in which way can this value be measured. This research has taken the first steps in doing so, and when prior literature is taken into consideration on the quality of reporting and CSR activities a potential association between GRI-practices and performance is interesting to find. The overall impact of GRI-practices is still difficult to capture.

The remaining of this paper proceeds as follows. Section 2 presents the theoretical background in regard to the research. Section 3 discusses the hypothesis development. Section 4 describes the research design and sample selection of this study. Section 5 presents the results. Section 6 discusses some additional analysis and section 7 concludes.

2. Theoretical background

The changing business world and current economic events have led to a growing demand by stakeholders: that firms provide information about their financial and non-financial performance, corporate governance and their contribution to developing sustainability in their annual reports. To fulfil this demand The Global Reporting Initiative, as an attempt to create an internationally accepted concept for Integrated Reporting (hereafter, IR), created the International Integrated Reporting Committee (IIRC), whom launched the first version of the IR framework in 2013. The fundamental idea behind IR is that a sustainable society demands of its companies that they have sustainable strategies, which can create value in the short and long-term (Eccles and Serafeim, 2011). Four factors play an important role to emphasize the urgency for a sustainable society: the recurring global financial crisis, the increased awareness of the effects of climate change, the growing importance of human capital and its relation to value creation and the recognition of good corporate governance and risk management, in order to prevent any corporate disasters. The purpose of an integrated report is to provide stakeholders with an explanation on how a firm creates and maintains value over time (International Integrated Reporting Committee, IIRC, 2011). Furthermore it also provides insights regarding the resources and relationships that are used and affected by the firm, these are referred to as capitals (financial, manufactured, intellectual, human, social and relationship, and natural).

The pilot program of the IIRC in 2013 included 100 large multinational companies, in which long term investors were defined as the primary focus group. While companies over the last years are increasingly implementing degrees of IR and applying GRI-practices for their annual reports, there is still a limited understanding of the effects of IR on the firm's performance (Serafeim and George, 2014) and the value it creates.

Investors perform an essential role in the functioning of the capital markets. Based on their decisions, capital flows from market to market and affects value creation within different businesses. Investors therefore, have the ability to allocate or withdraw funds, which can shape the profile of firms and capital markets. This means that investors have the power to influence the behavior of the firms in which they chose to invest. Following the financial crisis the engagement potential of investors has grown over the years (Druckman, IIRC, 2015). Research by the IIRC in 2015 has indicated that investors use information from different "capitals" when they make investment decisions. This additional disclosure is not typically accessible in the traditional annual report. IR tries to provide investors with a broader context, by giving tools to firms to disclose more information voluntarily in ways that helps to understand the business

model, strategies and performance (IIRC, 2015). Voluntarily (additionally) disclosing information, as argued by Healy and Palepu (2001), has potentially three types of capital market affects. For firms that go the extra mile and provide extensive voluntary information, this means: improved liquidity for their stocks in the capital market. Healy et al. (1999) and Gelb and Zarowin (2000) support this statement. They find that extensive disclosure leads to an increase in stock prices, which are unrelated to the current performance of earnings. Additionally (extensive) voluntary disclosure leads to the reduction of cost of equity capital (Healy and Palepu, 2001). Barry and Brown (1984-1986), make a strong argument on this particular matter. They state that when disclosure is insufficient the investors bear a risk in their forecasting of future pay-offs from their investment. Therefore they will demand a higher return in order to bear the information risk. Which leads to their finding, that firms with higher level of disclosure, and therefore lower information risk, are more likely to have a lower cost of equity capital. In addition, Piotroski (1999), supports this statement and finds that providing extra segment disclosures leads to a lower cost of equity capital.

Van Zyl (2013) performed a research in South Africa on the adoption of IR for listed companies and if this contributed to the improvement of the quality of sustainability-related information published. She found that even though firms attempt or claim to be creating integrated reports, the level of integration remains insufficient. Only a small number of firms have understood the importance of achieving long-term success through environmental and social sustainability. Weber and Koellner (2008) mention that it is widely accepted that environmental performance and financial performance go hand in hand, but the strength of the relation between the two is still often unclear. These research findings illustrate the importance of proper guidance and stakeholder engagement.

In addition, research performed by Serafeim (2014) on IR and investor clientele, found a correlation between the application of IR and a long-term investor base. Serafeim (2014) mentions that integrated reports provide investors with more relevant information to make long-term investment decisions. Furthermore a study performed by Eccles et al. (2012) on the impact of sustainability on the firms processes and performance, found that high sustainability firms enjoy better stock market performance, lower volatility and higher return on assets and return on equity than low sustainability firms. These high sustainability firms are more likely to have an established process regarding stakeholder engagement, are more long-term oriented and show higher measurement and disclosure of non-financial information. They significantly outperform low sustainability firms (Eccles et al, 2012). Sustainability plays an essential role

in providing stakeholders with an integrated report, that merges financial and non-financial information. As mentioned before GRI provides sustainability standards that are acknowledged worldwide and are supportive of IR. Weber and Koellner (2008) conducted research on the relation between GRI indicators and the performance of firms. They found a positive correlation between sustainability activities, the impact on sustainable development with the performance of firms.

Next to all the benefits of sustainable reporting and IR, Visser (2011) states that these types of reports have had little impact on mainstream financial accounting and corporate reporting. Even though there are currently more firms reporting non-financial information, it has had little success in making firms more accountable and responsible. A major weakness of sustainability reporting is that these are often disconnected from the firm's financial performance, also they tend to look backward and do not provide clear association with the strategy the firm has defined (Serafeim, 2004). Also the information seems to be less relevant due to the fact that it is audited on a lower level of assurance, with an unidentified materiality, and the sustainability reports are released separately (in some cases). This decreases the value relevance of the particular data (Serafeim, 2014). Furthermore the presentation of environmental policies, strategies and operations are often seen as cost factors, which are only implemented when accidents occur (Russo and Harrison, 2005) and if pressure is applied by shareholders (Kassinis and Vafeas, 2006). Firms that follow GRI-practices tend to combine the information in the annual (normal) reports, but it is not always the case, which makes it difficult to value the relevance of the different information.

This study will build upon that findings of the research stated in this section based on sustainability reporting and how quality disclosure impacts the firm's performance. Eccles et al. (2012) find that firms that follow an "integrated thinking" model, implement sustainability, focus on stakeholder engagement and on a long-term horizon while communicating with a higher transparency, outperform firms that do not follow similar methods. Serafeim (2014) on the other hand finds that the practice of IR plays an important role in the type of investors firms attract, short term or long term. Weber and Koellner (2008) researched if the application of the GRI-practices improve the quality of sustainability reporting. They find that due to the implementation of GRI-practices firms are limited in their freedom to merely disclose the information which is convenient to the firm. Furthermore GRI applies a comply or explain method, which helps to provide stakeholders with transparent information and increases the quality of the information disclosed. In addition, Van Zyl (2013) encourages IR as it has

improved the quality of sustainability reporting. Van Zyl (2013) additionally emphasizes the importance of the level of integration, as it is still very low. Lastly, in regard to the quality and type of reporting, Healy and Palepu (2001) state that indulging in voluntary disclosure has an impact on the capital market performance of firms (beta).

In summation, due to the fact that there is no particular method in order to measure integrated information and if this provides benefits for stakeholders, this study will focus on the application of GRI-practices and will present additional analysis using the Transparency Benchmark scores. This study will research if the application of GRI has led to an improvement in financial performance in the Netherlands for the listed companies, in accordance with the findings of Plumlee et al. (2010) and van Zyl (2013). This study contributes to the literature by providing a better understanding of the effects of GRI-practices in corporate reporting and how it effects the performance of firms. Furthermore it provides statistical evidence that the practice of GRI, potentially, plays an important role in investment decisions. In the next section I will describe the hypotheses that will be tested in my research.

3. Hypothesis development

My goal is to create a better understanding of what the effects are on financial performance when firms apply GRI-practices. To provide an answer to my research question and work towards my hypotheses I will combine certain aspects of the studies mentioned in the previous section. First of all it is important to understand the concept of IR, it facilitates firms to integrate their information in accordance with the needs of their stakeholders (Serafeim, 2012); social, environmental and financial information. The inclusion of this voluntary relevant information leads to a better qualitative disclosure, which is in accordance with the findings of Healy and Palepu (2001). Also PWC (2014), have conducted a survey on the needs of investors in relation to IR. They find that investors value high quality reporting, which can have a direct impact on the firm's financial performance. Furthermore investment professionals pay significant value to firms that disclose an explanation of their business model. This provides investors with an understanding of how a firm creates cash and value that will create cash in the future. Additionally, the research conducted by PWC, found that the annual report is a valuable document that should contain financial and non-financial information on governance, social and human matters (PWC, 2014). IR is therefore a concept for firms to disclose information on issues that are material for stakeholders, or will be in the future. In order to facilitate integrated thinking firms use GRI-standards. Due to the fact that GRI-standards are globally accepted and external auditors provide assurance on the matter, this research will primarily focus on the

application of these particular practices. Combined, these theoretical arguments lead to the following hypotheses.

Hypothesis 1. *Firms that apply GRI-standards in their annual reports have higher returns in comparison to firms that do not apply the same methods.*

As mentioned before in the previous section and found in prior research, disclosure of additional information in the annual reports leads to a potential increase in stock prices, which are unrelated to current earnings (Healy and Palepu, 2001 and Barry and Brown, 1984-1986). Therefore I hypothesize that firms that apply GRI-practices, and therefore provide additional relevant information to their stakeholders, will have better returns on their stock prices.

Hypothesis 2. *Firms that apply GRI-standards in their annual reports have higher expected future cash flows in comparison to firms that do not apply the same methods.*

Healy and Palepu (2001), Plumlee et al. (2010) and Lev et al. (2008) find a positive relation between disclosure quality and expected cash flow. They suggest that additional disclosure on environmental issues attracts stakeholders, investors and partners who want to work together with firms that are environmentally responsible. This leads to an increase in their business activities. Therefore I hypothesize that firms that apply GRI-practices will have higher expected future cash flow.

Hypothesis 3. *Firms that apply GRI-standards in their annual reports have lower cost of equity in comparison to firms that do not apply the same methods.*

Research performed by Richardson and Welker (2001) suggest a positive association between voluntary (environmental) disclosure and the cost of equity capital. Firms that operate in, for example, “dirty” industries disclose more information in order to legitimize their existence (Aerts and Cormier, 2009). This motive is therefore associated with a higher cost of equity capital. On the other hand Barry and Brown (1984-1986) state that insufficient disclosure bears a risk for investors to forecast their future pay-offs from their investment. Therefore a higher return rate will be demanded, in order to bear the information risk. Therefore, firms with higher levels of disclosure, and a lower information risk, are more likely to have a lower cost of equity capital. In accordance with these findings and statements I hypothesize that firms that apply GRI-practices will have a lower cost of equity capital, due to the fact that they disclose more relevant information which decreases the information risk.

The hypotheses are stated in the alternative form. The corresponding null hypotheses are, that firms that do not engage GRI-practices have lower returns on average, lower expected future cash flows and higher cost of equity. In the next section the research design and sample selection of the study will be discussed.

4. Research design and sample selection

To test the hypotheses described in the previous section, regression models will be used. In order to understand the models, the relation between performance following the implementation of GRI –practices will be documented.

High sustainability firms according to prior literature (Eccles et al. 2012) outperform low sustainability firms. This finding contributes to the hypotheses stated in the previous section. Also, I predict that high sustainability firms are firms with a high level of "integrated" information and therefore provide their stakeholders with more relevant information which leads to a better financial performance (Eccles et al. 2012). Therefore in this study I will measure if the application of GRI-practices contributes to better performance in comparison to firms that do not apply the same methods. So in addition to their sustainability performance, overall and more relevant information in particular should prove to have a significant effect on the performance of firms. Therefore I document the relation between the adoption of GRI and the dependent variables of interest (Y). Simultaneously the association between the components of firm value (stock market performance, expected cash flow and cost of equity capital) and the independent variables will be considered, these provide tests for the hypotheses that are stated in the previous section. The models that are used in this study are similar to the ones used by Plumlee et al. (2010) and Botosan and Plumlee (2002). Plumlee et al. (2010) also measure the returns, expected cash flows and the cost of equity capital of firms that apply sustainability reporting. In order to measure the degree of sustainability reporting, previous literature (Clarkson et al. 2007) uses indexes which provide disclosure scores. In this study, no such index will be used, solely the relation between the application of GRI-practices and the financial performance will be measured.

Dependent variable (Y) – Price (P)

The first model of this research measures the relation between the application of GRI-practices and the stock returns for the firms.

This model is similar to the one used in the research conducted by Plumlee et al. (2010). The model is slightly altered, by adding the GRI-variable, and presented underneath:

$$P = \beta_0 + \beta_1 BkVal_{it} + \beta_2 AbEar_{it} + \beta_3 GRI_{it-1} + \beta_4 LogMktVal_{it} + \varepsilon_{it}$$

In the model mentioned above, P is the stock price of the firms at the publication date. *BkVal* is the book value per share at the beginning of the year. *AbEar* are the abnormal earnings per share at the end of the year. The *AbEar* are calculated by taking the actual earnings per share deducted by the forecasted Thomson Reuters expected earnings. The natural log of market value (*LogMktVal*) is also added as a control variable, in order to isolate the effect. Market value, is the total value of the equity of the firm. GRI is a dummy variable and equals to one if the firm in the previous year provided a GRI based annual report and zero otherwise.

Dependent variable (Y) – Expected Future Cash Flow (EFCF)

The second model will measure the relation between the expected future cash flow and the application of GRI-practices. The regression model is presented underneath and is similar to the one used in the Plumlee et al. (2010) study.

$$EFCF = \beta_0 + \beta_1 CFps_{it} + \beta_2 LogSales_{it} + \beta_3 GRI_{it-1} + \varepsilon_{it}$$

In accordance with Plumlee et al. (2010), the forecasted current period cash flow per share (*CFps*) and the natural log of total sales (*LogSales*) are included as control variables, in order to isolate the effect of GRI-application. Consistent with the previous model, the disclosure variable is added, in order to measure the effect of the primary variable of interest (GRI), if in the previous year a firm applied GRI-practices in their annual report. The expected cash flow are forecasted by Thomson Reuters and are collected from the Dutch stock market's website. Also the cash flow per share is hand collected from the same website over the sample period at end of every year.

Dependent variable (Y) – Cost of equity capital (CofEC)

The final model of this study focusses on the relation between the application of GRI-practices and the cost of equity capital. The model is similar to the one used by Botosan and Plumlee (2002) and is presented underneath. Some particular variables are added in order to control for the effect of the primary variable, these are similar to the ones used by Plumlee et al. (2010).

$$CofEC = \beta_0 + \beta_1 BETA_{it} + \beta_2 LogMktVal_{it} + \beta_3 GRI_{it-1} + \varepsilon_{it}$$

The third hypothesis, in accordance with Botosan and Plumlee (2002), is tested by regressing the expected cost of equity capital (*CofEC*) on market beta (BETA) and the natural log of market value (LogMktVal). BETA is included in the model in order to control for systematic risk. The variable is estimated by the market model, 36 monthly return observations over the three-year period (2013-2015) are used. The data is collected from publications on the Dutch stock market's website (the Financial Times), the data is from Thomson Reuters. LogMktVal is added due to the fact that prior research has shown a significant association between market value with both the expected cost of equity capital and disclosure level (Botosan and Plumlee, 2002). The variable presents the natural log of the market value of the outstanding equity from Thomson Reuters. The data is collected for the sample period, 2013-2015.

The cost of equity capital is estimated for each firm-year by using the short term horizon of the classic dividend discount model in accordance with Botosan and Plumlee (2002). By taking the forecasted dividends for each year of their sample and the current stock price Botosan and Plumlee (2002) estimate the cost of equity capital. The dividend discount model I use in this study is presented slightly different, nevertheless the main variables remain the same. This is a simpler version of the model which is used from the literature on Corporate Finance (Berk and DeMarzo, 2013). The model is used in order to estimate the cost of equity capital for each sample year and is presented underneath.

$$r_E = \frac{Div_1}{P_0} + g$$

The forecasted dividends (Div_t) used in this study for the fiscal years 2013, 2014 and 2015 are published by Thomson Reuters. In accordance with Botosan and Plumlee (2002) I use the stock price (P_t) at the publication date or the closest date thereafter within three days of publication. Additionally the expected growth rate (g) for dividends is added to the model. The estimation is made by taking the actual dividend payment for the current year and the expected payment for the upcoming year.

Sample selection

The sample for this study includes listed companies from the Dutch stock exchange (AEX) over the years 2015, 2014 and 2013. The sample consists of the main (big) companies, mid-cap and small-cap. Unlike other studies (such as, Clarkson et al. 2008, 2010), this study includes firms that are both environmentally sensitive and non-sensitive. The study will not focus primarily on differences between industries, but mainly on the implementation of GRI-practices in

comparison to 'plain' annual reports. The essence of this study therefore is to capture the financial effects due the implementation of GRI-practices.

I identify firms within these three categories (big, mid-cap and small-cap) for which information is available for the proxies that are used in this study, stock prices, expected future cash flow and the cost of equity capital. In order to gather the information for the variables used in my study I have used the GRI-database in order to confirm if each individual firm used GRI-practices during my research sample. Then I have hand collected all the dates on which the annual reports were published. Afterwards I have used the database of the Financial Times in order to hand collect the stock prices at the date of publication. Also I have hand collected the book value of each individual firm at the beginning of each year. The abnormal earnings per share, are calculated by taking the difference between the earnings expectations per share, forecasted by Thomson Reuters and the actual earnings per share. The difference between these two variables, are the abnormal earnings I have used in my models. The market value of each firm during the sample period is hand collected from the Financial Times' database. For the forecasted cash flow per share I have used the ones forecasted by Thomson Reuters. The Sales of each individual firm I have hand collected from the Financial Times' database. The BETA is calculated by taking 36 monthly returns for each individual firm. And lastly, the cost of equity capital is estimated by taking the expected dividend for each year (Thomson Reuters) and dividing it by the stock price at the publication date (t-1) added by the growth rate for each year during the sample.

The set of the sample is limited for the firms I was not able to collect data for (not published and/or available). The final data sample includes **222** firm-years (Panel A). Table 1 summarizes the sample selection procedure and shows the distribution of the 222 firm-year observation across the different industries (panel B) and years. Even though this study does not focus primarily on industries, it is still interesting to see which industries the sample consists of. Panel C shows the distribution of the firms over the years that do and do not apply GRI-practices. The sample is fairly evenly distributed across the three years. The sample consists of **74** individual firms in each year, and every year there are slightly more firms that apply GRI -practices. Nevertheless the groups are approximately even.

Table 1

Sample Selection

Panel A: Sample selection process

	#	%
Total firm-years by the Dutch stock market	**225**	**100,0**
Total firm-years with insufficient data	**3**	**1,3**
Total firm-year observations	***222***	***98,7***

Panel B: Sample breakdown by industry

		Observations industry	
	Years in sample	#	%
Basic Resources	13-15	3	1,4
Chemicals	13-15	12	5,1
Construction & Materials	13-15	6	2,8
Consumer Goods	13-15	12	5,6
Financial Services	13-15	27	11,6
Food and Beverages	13-15	18	7,9
Health Care	13-15	12	4,6
Industrial Goods and Services	13-15	18	8,3
Media	13-15	12	5,6
Oil & Gas	13-15	9	4,2
Professional Services	13-15	21	9,7
Real Estate	13-15	21	9,7
Retail	13-15	6	2,8
Technology	13-15	36	16,7
Telecommunications	13-15	6	2,8
Travel and Leisure	13-15	3	1,4
Total firm-year observations		**222**	**100**

Panel C: Sample breakdown by year and GRI application

	Observation History	
	#	%
2013	**74**	**33,3**
GRI-application firms	35	15,7
Non-GRI firms	39	17,6
2014	**74**	**33,3**
GRI-application firms	41	18,5
Non-GRI firms	33	14,9
2015	**74**	**33,3**
GRI-application firms	44	19,8
Non-GRI firms	30	13,5
Total firm-year observations	**222**	**100**

The table shows the determination of the sample and the distribution of firm-year observations by industry membership, year and frequency. The industry names and the allocation of firm-year observations across industries are taken from the Dutch market's website (financial times).

5. Emperical Results

In this section the results in regard to my research are presented. First the descriptive statistics and the Pearson correlations of the variables used will be presented. Then I will discuss the results in regard to the hypotheses I have stated in section 3.

Table 2 provides a detailed overview of the descriptive statistics for the variables that are used in my study. Panel A of Table 2 provides a pooled sample across years for book value, abnormal earnings, the natural log of market value, expected cash flow per share, the natural log of total sales, beta and the estimated cost of equity capital.

Table 2

Descriptive statistics during the period 2013 - 2015 for both pooled sample and year-by-year

Panel A: Pooled sample

Variable	BkVal	AbEar	LogMktVal	CFps	LogSales	BETA	CofEC
n	222	172	206	219	217	200	123
Mean	15,80	0,074	21,08	2,39	20,93	0,013	0,198
Std. Dev.	22,93	0,441	4,59	3,59	4,57	0,026	0,273

Panel B: Year-by-year results

Year	BkVal	AbEar	LogMktVal	CFps	LogSales	BETA	CofEC
2015	16,48	0,04	21,17	2,66	21,01	0,013	0,232
	24,36	0,327	4,60	4,35	4,58	0,034	0,249
	74	61	74	72	72	72	47
2014	16,13	0,12	21,05	2,20	20,97	0,007	0,186
	22,90	0,403	4,59	2,91	4,58	0,022	0,279
	74	58	68	74	72	66	42
2013	14,78	0,07	21,00	2,31	20,80	0,019	0,167
	21,40	0,571	4,58	3,40	4,56	0,017	0,290
	74	53	64	72	73	62	34

The table provides descriptive statistics for the sample pooled across the sample period 2013-2015 on an annual basis. The data set consists of 222 total firm years, but not all variables can be estimated with the available data. Therefore there is a difference between the n of the different variables. BV is the book value of the shares on 31st of December of the year prior to the publication of the annual report. AE are the abnormal earnings estimated for each year, and are calculated by taking the difference between the expected earnings and the actual earnings. LogMktVal is the natural log of the market value of common equity on the 31st of December of the prior year to the publication of the annual report. CFps are the expected cash flow per share for each individual year, these are forecasts from Thomson Reuters. LogSales is the natural log of the total sales for each individual year during the sample period. BETA is estimated by taking the market model using 36 monthly returns over the sample period. CofEC is the estimated cost of equity capital derived from the dividend discount model.

The mean book value of shares included in the sample is **€15,80** respectively. Furthermore the mean of the natural log of the market value and total sales is over **21,08** and **20,93**. The standard deviation of the variables is relatively high, which is due to the inclusion of big, medium and small cap firms in the sample. The data therefore is more spread apart and has a higher deviation. Panel B provides similar information in comparison to panel A, but on a year-to-year basis. The mean of all variables increase slightly every year. Furthermore the sample size has also increased year-by-year. It seems that during this period, firms provided more (financial) information each year.

Table 3 presents the Pearson correlations of the variables included in this study. As stated in the research question, I want to find results to defend the statement that firms that apply GRI-practices for the preparation of their annual reports enjoy better financial performances. Table 3 presents the average correlation coefficients among all the variables used in this study (including Transparency Benchmark, which will be discussed in further detail in section 7). In regard to the purpose of the study there is a significant positive correlation between the application of GRI-practices and AbEar, BETA and CofEC, but not with P and EFCF. The significant positive correlation between the application of GRI-practices and CofEC is **0,016** respectively. This would indicate a higher cost of equity capital when firms apply GRI-practices and therefore is not consistent with the hypothesis (3) stated in section 3. Furthermore there is a significant positive correlation between AbEar and GRI, of **0,010** respectively. This indicates higher abnormal earnings when GRI-practices are applied. The significant correlation between GRI-application and BETA is **0,015** respectively, which indicates higher market index returns when GRI-practices are applied. Also there does not seem to be a significant correlation between BETA and CofEC, which is inconsistent with findings of prior research conducted by Botosan and Plumlee (2002).

Table 4-6 provide the results for this study, in a "price" model (table 4), "expected cash flow model" model (table 5) and a "cost of equity" model (table 6). The specification of the models provide test results for H1, H2 and H3 stated in section 3 of this study. The focus of this study is to measure if after applying GRI-practices there is a significant increase in the financial performance of firms; if there is a significant association between GRI and the stock price at the publication date, the expected cash flow and the cost of equity capital. Furthermore the coefficients obtained from estimating the regressions for the sample period alongside the adjusted R-squared are presented in each model.

Table 3

Pearson Correlation Coefficients:

	P	BkVal	AbEar	GRI	TB	EFCF	CFps	CofEC	BETA	LogMktVal	LogSales
P	-										
BV	0,853	-									
AE	**-0,016****	**-0,004*****	-								
GRI	0,103	0,156	**-0,010****	-							
TB	**0,081***	**0,098***	**0,031****	0,645	-						
EFCF	**0,010****	**0,002*****	**-0,015****	0,180	0,243	-					
LCF	0,626	0,606	**-0,003****	0,177	0,164	0,524	-				
CCEC	**0,058***	0,693	0,142	**0,016****	**0,010****	**-0,041****	**0,075***	-			
BETA	**-0,030****	**-0,018***	**0,009*****	**0,015****	**-0,094***	-0,138	**-0,098***	0,423	-		
LMVAL	0,347	0,246	**-0,046****	0,430	0,489	0,389	0,273	**-0,073***	-0,119	-	
LSAELS	0,100	**0,033****	**0,018****	0,521	0,628	0,400	0,187	**-0,073***	**-0,088***	0,835	-

Correlation Coefficients between Price, Book Value, Abnormal Earnings, GRI, Transparency Benchmark score, Forecasted Cash Flows, Cash Flow per share, Cost of Equity Capital, Beta, the natural Log of Market Value and Total Sales.

,,*** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.*

Price model – H1

The results for the "price" model are presented in table 4, where the stock price of firms at the publication date are regressed with the application of GRI-practices (t-1). Also, the control variables are included in the model. I find that the Book Value and the natural Log of Market Value have a positive and significant impact on the stock price of the firms at the publication date. On the other hand I do not find a significant association between GRI-application and the stock price. These findings are inconsistent with Healy and Palepu (2001) and Barry and Brown (1984-1986). I do find that the adjusted R-squared for the model is **76,3%**, which is not relatively high, therefore no robust conclusions can be made. The results for this model do not show that the application of GRI leads to a better stock market performance, therefore these results do not support hypothesis 1.

Table 4

The Price Model (H1)

	P	
Variable	Coefficient	P-value
Intercept	-49.102	0.000
GRI	-2,604	0,261
BkVal	1,034	**0,000*** **
AbEar	-3,860	0,133
LogMktVal	2,860	**0,000*** **
Adjusted./Pseudo R^2	0,763	
Observations	199	

OLS Regression is performed for the Stock Price at the Publication Date of the Annual Report (P) as the dependent variable. The Book Value, Abnormal Earnings and the Log of Market Value are included as the control variables. GRI (t-1) is included as the explanatory variable.

,,*** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.*

Expected Cash Flow – H2

The results for the "expected cash flow" model are presented in table 5, where the expected cash flow of firms are regressed with the application of GRI-practices (t-1). The control variables are also added in the model. I find that Cash Flow per share and the Natural Log of Total Sales have a significant association with the expected cash flows. These variables tend to have a bigger impact on the expected cash flow of firms. On the other hand I do not find a significant association between the application of GRI-practices and the expected cash flow.

These findings are inconsistent with the findings presented by Healy and Palepu (2001), Plumlee et al. (2010) and Lev et al. (2008). I was not able to find that firms that behave environmentally responsible and present these results in their annual reports by applying GRI-practices, attract investors which leads to an increase in their business. Lastly the adjusted R-squared I find is relatively low in comparison to other studies, at **28,9%** respectively, which indicates that the variables in the model do not affect the dependent variable. Therefore no robust conclusions regarding this model can be made. Also, I conclude that there is no significant impact on the expected cash flow if firms apply GRI-practices, these results do not support hypothesis 2.

Table 5

Expected Cash Flow Model (H2)

	EFCF	
Variable	Coefficient	P-value
Intercept	-1,61E+10	0,000
GRI	-4,46E+08	0,427
CFps	3,78E+08	**0,000*** **
LogSales	7,88E+08	**0,000*** **
Adjusted./Pseudo R^2	0,289	
Observations	217	

OLS Regression is performed for the Expected Cash Flow of the firms (EFCF) as the dependent variable. The Cash Flow Per Share and the natural Log of Total Sales are included as the control variables. GRI (t-1) is included as the explanatory variable.

,,*** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.*

Cost of Equity Capital – H3

Table 6 presents the results in regard to the final hypothesis. The model captures the relation between the cost of equity capital and the application of GRI-practices (t-1). I find a positive significant relation between BETA and the Natural Log of Market Value with the cost of equity capital. I do not find a significant association between the application of GRI-practices and the cost of equity capital. These findings are inconsistent with Richardson and Welker (2001) and Barry and Brown (1984-1986), who find a significant relation between voluntary disclosure and the cost of equity capital. Furthermore the adjusted R-squared is very small at **20,9%,** which indicates that the explanation degree of the variables on the cost of equity capital is low.

Therefore no robust conclusions regarding this model can be made. Also, I conclude that there is no significant impact on the cost of equity capital if firms apply GRI-practices, these results do not support hypothesis 3.

Table 6

Cost Of Equity Capital Model (H3)

	EFCF	
Variable	Coefficient	P-value
Intercept	0,869	0,001
GRI	0,002	0,964
BETA	4,859	**0,000*** **
LogMktVal	-0,034	**0,005** **
Adjusted./Pseudo R^2	0,209	
Observations	120	

OLS Regression is performed for Cost of Equity Capital of the firms (CofEC) as the dependent variable. The BETA and the natural Log of the Market Value are included as the control variables. GRI (t-1) is included as the explanatory variable.

,,*** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.*

The hypotheses stated in section 3 of this study cannot be supported with the obtained results after measuring the models. Even though research and publications state that GRI-practices improve the quality of reporting (Serafeim, 2014) and eventually lead to better financial performance for firms, I was not able to find such results.

This study has focused on finding a relation between the application of GRI-practices and the financial performance of firms. Due to the fact that the degree of GRI-application is not measured, but used as a dummy variable, no robust conclusion can be made if a certain level improves the financial performance of firms. GRI facilitates firms to increase the quality of reporting and the degree of integration between financial and non-financial information. Therefore in order to find a relation between the quality of reporting and the financial performance of firms, I will conduct additional analyses in the next section.

6. Additional Analysis

The overall purpose of this study is to research if the application of GRI-practices improves the financial performance of firms. In the previous sections I have used the application of GRI as a

dummy variable in the models. In order to understand the degree and the quality of reporting I will provide some additional research using the Transparency Benchmark.

In 2004 the Dutch Ministry of Economic Affairs organized an annual Transparency Benchmark in order to assess the extent to which firms account for their activities regarding Corporate Social Responsibility (CSR) in their annual report. The benchmark encourages firms to be transparent about their policies and results in regard to CSR. Furthermore it facilitates stakeholder dialogue and increases the overall focus on CSR policies and therefore improves firm's performance in this particular area. The criteria of the Transparency Benchmark has adopted GRI and IIRC guidelines in 2014. These new criteria encourages firms to integrate their financial and non-financial information. All firms participate through a self-assessment, they make sure that all appropriate and relevant information is included. The responses of the self-assessments are analyzed by EY and afterwards the results are presented in the annual Transparency Benchmark publication reports.

Due to the fact that the Transparency Benchmark uses GRI and IIRC standards in their questionnaire it is interesting for this study to include the results in the models. As mentioned before the GRI variable is used in the previous sections as a dummy variable. The benchmark score provides more insights in the degree of the quality of reporting. Therefore in this additional analysis the GRI-variable is replaced in order to see if the models provide different results with the addition of these scores. The additional analyses will take place by altering (and explaining) the hypotheses, sample and the regression models presented in section 3, 4 and 5 respectively. The results of the altered models will also be presented in this section.

Hypotheses

The altered hypotheses are presented underneath, in their essence they remain the same.

Hypothesis I. *Firms with higher Transparency Benchmark scores for their annual reports have higher returns in comparison to firms that have lower scores.*

Hypothesis II. *Firms with higher Transparency Benchmark scores for their annual reports have higher expected future cash flow in comparison to firms that have lower scores.*

Hypothesis III. *Firms with higher Transparency Benchmark scores for their annual reports have lower cost of equity in comparison to firms that have lower scores.*

The hypotheses are stated in the alternative form. The corresponding null hypotheses are, that firms with lower Transparency scores have lower returns on average, lower expected future cash flows and higher cost of equity capital.

Sample

The sample for the additional analyses will not be adjusted in order to correspond with the Transparency Benchmark. In order to have sufficient data to calculate the models, only the Transparency scores for the Dutch listed companies are included for the years prior to the financial results of the current year (t-1, 2012, 2013 and 2014), all other companies are excluded. The sample period remains the same (2013, 2014 and 2015, Ministry of Economic Affairs), **222** firm-years.

Research design and regression models

The research design for the additional analyses will remain the same. Only the GRI-variable will be replaced with the Transparency Benchmark variable (TB). The altered models are presented underneath.

$$P = \beta_0 + \beta_1 BkVal_{it} + \beta_2 AbEar_{it} + \boldsymbol{\beta_3 TB_{it-1}} + \beta_4 LogMktVal_{it} + \varepsilon_{it}$$

$$EFCF = \beta_0 + \beta_1 CFps_{it} + \beta_2 LogSales_{it} + \boldsymbol{\beta_3 TB_{it-1}} + \varepsilon_{it}$$

$$CofEC = \beta_0 + \beta_1 BETA_{it} + \beta_2 LogMktVal_{it} + \beta_3 \boldsymbol{TB_{it-1}} + \varepsilon_{it}$$

The Transparency Benchmark score is calculated by taking a percentage of the total score that can be obtained, and is added to the model, therefore the highest score will be 1.

Emperical results – H I, II and III

Table 7 provides a detailed overview of the descriptive statistics for the used variable in this additional analyses. Panel A of Table 7 provides an overview of the TB variable. The mean Transparency Benchmark score for the annual reports is **0,509**. Furthermore the standard deviation of the score is **0,372**, which is slightly high and indicates more spread among the obtained scores for the benchmark.

Panel B provides similar information in comparison to panel A, but on a year-to-year basis. The mean of the variable increases slightly every year, the standard deviation on the other hand remains on the same level. This indicates that firms are obtaining higher scores for their annual reports, but there is still a large difference between the best and worst in class.

Table 7

Panel A: Transparency Benchmark sample

Variable	**TB**
n	222
Mean	0,509
Std. Dev.	0,372

Panel B: Year-by-year results

Year	**TB**
2015	0,543
	0,356
	74
2014	0,507
	0,366
	74
2013	0,478
	0,391
	74

Descriptive statistics during the period 2013 - 2015 for the sample and year-by-year.

The table shows the determination of the sample and the distribution of firm-year observations.

Table 8 presents the results for the three models measured with the Transparency Benchmark scores instead of the GRI-variable. In all models I do not find a significant relation between the TB scores and the dependent variables: stock price at the publication date, expected cash flow and the cost of equity capital. Therefore I conclude that there is no relation between higher TB scores in the previous year which leads to a better financial performance in the following year. I find no supporting evidence for hypothesis I, II and III.

Even though I hypothesized that higher quality reporting due to the application of GRI-practices leads to better financial performance, the results have shown otherwise. The market value and the book value of firms do show a significant relation with the movement of the price at the publication date of the annual report. Additionally I find an adjusted R-squared, which is not relatively high for the price model (in comparison to the other models it is higher). Furthermore the predictability of cash flow is significantly related to cash flow per share and the total sales of firms.

Table 8

Panel A: *The Price Model (H I)*

	P	
Variable	Coefficient	P-value
Intercept	-53,340	0.000
TB	-5,227	0,117
BkVal	1,027	**0,000*** **
AbEar	-4,067	0,111
LogMktVal	3,127	**0,000*** **
Adjusted./Pseudo R^2	0,764	
Observations	199	

Panel B: *Expected Cash Flow Model (H II)*

	EFCF	
Variable	Coefficient	P-value
Intercept	-1,57E+10	0,000
TB	-2,52E+08	0,754
CFps	3,74E+08	**0,000*** **
LogSales	7,64E08	**0,000*** **
Adjusted./Pseudo R^2	0,287	
Observations	217	

Panel C: *Cost of Equity Capital Model (H III)*

	CCEC	
Variable	Coefficient	P-value
Intercept	0,845	0,005
TB	-0,012	0,892
BETA	4,884	**0,000*** **
LogMktVal	-0,327	**0,030** **
Adjusted./Pseudo R^2	0,209	
Observations	120	

OLS Regression is performed for the three different models, Stock Price at the Publication Date of the Annual Report (P), the Expected Cash Flow (EFCF) and the Cost of Equity Capital (CofEC) as the dependent variable. The control variables used for the different models are included as well. TB (t-1) is included as the explanatory variable.

,,*** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.*

Lastly the movement in cost of equity capital is significantly related to BETA and the market value. Quality of reporting due to the application of GRI-practices may be of influence, but I was not able to find results supporting my hypotheses. In the next section I will provide a conclusion in regard to the overall study and the possibility for future research.

7. Conclusion

In this study I have examined the relation between GRI-application and the quality of reporting, using the Transparency Benchmark scores, with the financial performance of firms. I have aimed to find an association between certain aspects; stock price at the publication date, the expected cash flow and the cost of equity capital. This study is built upon prior and concurrent research which did not provide results on this particular matter, but more on the impact of sustainability on financial performance (Botosan and Plumlee, 2002, Plumlee et al., 2010 and Clarkson et al., 2010). Nevertheless I was not able to provide findings in consistence with prior literature. I argue that these differences are due to the exclusion of the environmental performance of firms (TRI and KLD) and the measurement of (the type of) disclosure in my study. I aimed to capture these effect by using the GRI-variable. Furthermore the sample size (and period) used in my analysis is smaller.

The Global Reporting Initiative claims to improve the quality of overall reporting, the International Integrated Reporting Council claims the same (IIRC, 2015). Therefore, with this research, I have contributed to the literature by trying to find a relation between the application of GRI-practices and the potential impact it has on the financial performance of firms. Unfortunately the results did not support the hypotheses I have stated in my research. Nevertheless, I do recommend future research. Measuring the degree of GRI-application and integration will potentially lead to a better understanding of the extent to which firms “go the extra mile” in order to share voluntary relevant information with their stakeholders and the impact it has on performance. Together with the level of assurance provided by an accounting firm this will potentially be a promising combination in order to find a relation with the financial performance of firms following the application of GRI-practices and the relevance it creates for stakeholders.

My findings did not support the hypotheses I have stated, but my findings do contribute to the discussion on the matter. Does GRI improve the quality of reporting and will the integration of relevant information improve the decision making ability of stakeholders? On the topic of voluntary and qualitative disclosure Healy and Palepu (2001) and Barry and Brown (1984-

1986) seem to agree, higher quality reporting leads to better firm performance. On the matter if sustainability reporting has an impact on financial performance, Healy and Palepu (2001), Plumlee et al. (2010) and Lev et al. (2008) find supporting evidence. Nevertheless In my study I was not able to capture this particular effect. The effects of GRI-practices (and Integrated Reporting) and the value it creates for firms and stakeholders therefore remains unclear.

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