
**Erasmus University Rotterdam**

**Erasmus School of Economics**

Accounting Auditing and Control

# *Integrated Reporting, non-financial information and Financial Performance*

*An empirical analysis of the first pilot companies of the International Integrated Reporting Council*

Master's thesis within Accounting, Auditing and Control

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# Abstract

The focus of annual financial reporting is still what information to include in order to satisfy the stakeholders as well as investors. As time passes the stakeholders demand more than just financial information. Some corporations already include non-financial information in a standalone sustainability- or Corporate Sustainability Report (CSR).

The new reporting system which represents all information, financial and non-financial, combined into one single report, is called an Integrated Report (IR). It can help companies to explain their value creation more effectively to the stakeholders and capital markets. As the Global Reporting Initiative (GRI) guidelines envision that economic, environmental and social performance shall be as widely accepted and standardized as financial reporting (Larsson and Ljungdahl, 2008, p.63). It is crucial to know and understand, especially for those who are interested in adopting the IR, what the effect of the non-financial part will be on the financial performance (FP). Therefore, this study was focused upon whether the publishing of an IR has any effect on the Financial Performance (FP) and if there is any influence of the Environmental, Social Performance (ESP), the so called non-financial information (NFI) on the FP. The empirical results show that the publishing of the Integrated Annual Report (IAR) and the Environmental and Social Performance (ESP) is also negatively related with the Financial Performance (FP) in the accounting-based model. The same results were found when using the market-based model.



**Keywords:** Integrated Annual Report (IAR), Financial Performance (FP), Environmental, Social Performance (ESP), Non-Financial Information (NFI), Corporate Social Report (CSR), Global Reporting Initiative (GRI), International Integrated Reporting Council (IIRC)

# Preface

The main idea of this study was my attempt to finalize my study of Accounting, Auditing and Control (AAC) with my favorite subject “external reporting”. The development of the financial Annual Report (AR) into an Integrated Report (IR) caught my interest. The Integrated Annual Report (IAR) is a report in which non-financial information, such as corporate social information or information regarding environmental issues/sustainability information, and financial information is combined. With this thesis I hope to contribute in the current development regarding integrated reporting and raise the interest among other students, researchers and practitioners to further investigate and develop this topic.

I owe much gratitude to my thesis supervisors for their sound support, valuable feedback and encouragement during the writing process.

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## List of Abbreviations

| | |
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| **AR** | Annual Report |
| **CSR** | Corporate Social Responsibility |
| **EPI** | Environmental Performance Indicator |
| **EPS** | Earning per share |
| **FP** | Financial Performance |
| **GRI** | Global Reporting Initiative |
| **IAR** | Integrated Annual Report |
| **IR** | Integrated Report |
| **IIRC** | International Integrated Reporting Council |
| **NFI** | Non- Financial Information |
| **PAT** | Positive Accounting Theory |
| **ROE** | Return on Equity |
| **ROA** | Return on Assets |
| **SPI** | Social Performance Indicator |
| **SPSS** | Statistical Package for Social Sciences |

# Chapter 1 Introduction

## 1.1 Background and problem

For quite some time pressure and expectations on good corporate governance in the business environment has been/is being raised. These expectations found their cause in the fact of the corporate scandals which trigger especially investors to have more firsthand information on the financial and non-financial obligations of the company. Along with this phenomenon critical questions related to social, human and environmental factors raised in the media and by interested parties. Gradually the reporting requirements began to change and so a new area of corporate reporting was/is introduced: Integrated Reporting (IIRC, 2013).

Integrated Reporting (IR) is still an area of continuous development, where most country's requirements on reporting are regulated or implemented on a voluntary basis. The only exception so far is South Africa, the market leader in integrated reporting; it is the first country implementing obligatory requirements for listed companies. Companies listed on the Johannesburg Stock Exchange must provide an Integrated Annual Report- or explain why they have not- according to the King Ⅲ Code of Governance Principles, performed the 'apply or explain' basis (PWC, 2012).

Despite the increasing attention on and application of integrated reporting, there is up till now no common mandatory reporting standard. This formality is important to investors, especially from different business environments, to have a standardized form of reporting business transactions to ensure a fair and equitable analysis of business, and proper peer-to-peer comparison of business operating in different legal jurisdictions. It is said that integrated reporting should be at the heart of every organization with the intention to create accountability for the future society (KPMG, 2011).

As already mentioned, the production and presentation, usually voluntary, of an integrated report extends the information contained in traditional financial statements which normally only exist of financial information. Its use may be justified by reference to the stakeholder theory, according to which organizations should create wealth for all participants (or stakeholders), in contrast to the traditional financial model based on creating value for the principal agent or shareholder (Gonzalez Esteban, 2007).

As the basic idea of the stakeholder theory is that the firm's survival depends on its successful

management of relationships with stakeholders, so it is almost a requirement that the stakeholders need to be informed of the economic, social and environmental impact of corporate performance especially if they have great input and can punish poor/inadequate performance or stop their support (Hess, 2008). Because information provided in financial statements is usually insufficient, the concept of corporate transparency must be expanded to other areas, such as the social and environmental aspects of corporate behavior (Gray, Owen, & Maunders, 1987) and must be presented in an integrated form (Azcarate et al., Carrasco, & Fernandez, 2011; Frias-Aceituno et al., 2012). This implies that integrated reports are created in order to support the construction, maintenance and legitimation of agreements, institutions and ideologies before a set of stakeholders (Guthrie & Parker, 1990). Bustamante (2011) says that in general, local stakeholders have different expectations of corporate behavior, due to the different cultural conditions affecting them, giving rise to diverse values, norms and practices, all of which gives rise to different business practices on information disclosure.

Derived from latter, it is of great importance to keep the different stakeholders in mind, their difference in information need, and their difference in cultural attitudes. It is because of these differences that standard setters have to give great consideration on which standards to implement to satisfy a bigger group of stakeholders. In the following, despite of the different stakeholder groups some benefits of an integrated report are set out.

Krzus (2011) discusses four critical benefits of integrated reporting:

- Greater clarity
- Better decisions
- Deeper engagement
- Lower reputational risk

At the same time Eccles & Saltzman (2011) identify three classes of benefits of IR:

- Internal benefits: better internal resource allocation decisions, greater engagements with shareholders and other stakeholders, and lower reputational risk
- external market benefits: meeting the needs of common investors who want ESG information, appearing on sustainability indices, and ensuring that data vendors report accurate non-financial information on the company

- Managing regulatory risk: being prepared for a possible rush of global regulation, responding to requests from stock exchanges, and participate as frameworks and standards are developed

Eccles (2011) and Krzus (2011) both describe in their articles that disclosure of an integrated report implies greater transparency for a company's performance.

As mentioned in the beginning of this chapter, for now, reporting is on a voluntary basis and there is no common mandatory reporting standard for the integrated report while different/some writers wrote articles on whether they think the report will be rule- or principle based;

Bray & Chapman (2012, p. 14) state that: "one of the distinguishing features of Integrated Reporting is that in contrast to compliance based reporting, this can be seen as the rule based principle. There can be no model report. Every report must be built around the unique business model of the preparer". According to De Leo & Vollbracht (CSR index 2011., p.85), "The IIRC has taken upon itself the responsibility for producing a draft framework for integrated reporting that will be subject to public exposure and debate". They state that they are optimistic that this process will ultimately yield a principles-based framework that companies, investors and others will find useful. When comparing this saying to the first, Bray & Chapman (2012), it is clear that each country will have its own version of an IR just like the Generally Accepted Accounting Principles (GAAP).

As already mentioned, the IR is the publishing of the financial and non-financial information in one single report. Disclosing financial information is based on rules, policies internationally, i.e. international financial reporting, EU directives, and accounting standards. The production of the non-financial information (NFI) such as social, environmental and sustainable aspects is as an informal process. The disclosures of the NFI are achieved through annual reports (AR), corporate governance or social responsibility reports (Arsoy et al., 2014). There are some guidelines for the production of NFI reports, only the adoption of these guidelines is often optional/voluntary (DG Internal Market, 2011).

The emphasis on CSR activities also increased in the last decade (Dhaliwal et al., 2011) Many companies embraced the implementation of CSR positively and offer their products and services in a responsible way (McWilliams, et al., 2000).

One definition of CSR is: "*the commitment of business to contribute to sustainable*

*economic development – working with employees, their families, the local community and society at large to improve the quality of life in ways that are both good for business and good for development"* (Ward, 2004). Meanwhile CSR is defined by the EU commission as *"a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholder on a voluntary basis."*

CSR disclosures are of great benefit for some firms. Investors use these disclosures for e.g. forecasting purposes because investors are interested in the company's future FP for their investment decisions. Integrated Reporting can be used as a measurement tool for a company's overall performance because its transparent disclosures consists of the ability to reflect the Financial and non-financial performance. In fact, many regulations and laws impose companies to share some of their practices and CSR activities with the public through the publishing of non-financial information (Najah, 2013).

## 1.2 Research Question

Different studies were performed concerning the relation between NFI and FP but only few were done concerning the relation between the IR and FP. McWilliams and Siegel, (2000) found that CSR (in this case as a measure of NFI) has a neutral effect on FP. Orlitzky et al. (2003) found a strong correlation between Corporate FP and corporate social and environmental performance. Nelling and Webb (2009) reported that there is no evidence that CSR affects a company's FP. Najah and Jarboui (2013) found no significant relation between CSR disclosure and financial performance for French companies. Ahamed et al. (2013) reported a positive association between CSR and FP.

The intention for the following research statement/question is to give an answer on whether publishing financial and non-financial information in an integrated manner has any effect on the Financial Performance (FP). Further, if Environmental and Social Performance (ESP), the so known non-financial information (NFI) of a company, has an effect on the FP. The first pilot companies of the International Integrated Reporting Council (IIRC) were chosen for this research. The sample reporting period was 2012 and 2013 because the pilot started in September 2011 and ended in September 2014. The answer will inter alia, be drawn by analyzing reports such as CSR, IR or sustainability reports from these companies.

The following research question is formulated:

**“What is the effect of integrated reporting and reporting of non-financial information on the financial performance of the pilot companies of the IIRC?”**

**Or**

**“What is the effect of integrated reporting, including reporting of non-financial information on the financial performance of the pilot companies of the IIRC?”**

So, to repeat, the purpose of this study is to investigate if including non-financial information (social and environmental) to the traditional financial information (integrated information) will influence or have any effect on the financial performance of the pilot companies of the IIRC. This study will be carried out on the pilot companies of the IIRC that volunteered to report in an integrated way/manner in the period September 2011 until September 2014.

The main research question will be investigated with statistical hypothesis testing and supported by the following sub questions:

- What is the theoretical background of Integrated Reporting?
- What are the benefits of presenting firms financial and non-financial information in an integrated manner?
- What are the benefits of adding /including non-financial information in a traditional financial report?
- Does publishing non-financial information have an effect/impact on firms of the pilot program of the IIRC financial performance?
- What effect does including non-financial information to the traditional financial report has on financial performance of the pilot companies of the IIRC?
- What was/is the focus of prior research regarding this topic?

## 1.3 Methodology

Because this topic is quite new the study was explorative and descriptive to its nature. Literature on integrated reporting was studied and is set out in the first part of this thesis. Quantitative data was collected through content analysis of the annual reports of the companies who had participated in the pilot programme of the IIRC to implement the theoretical part. In September 2011 the IIRC started a pilot program to help to contribute to

the development of the international integrated report framework. Along the way over 100 businesses from around the globe joined this program. The IIRC pilot program came to an end after three successful years in September 2014. The analyzed years for this study were 2012 and 2013. The majority of the pilot companies joined the programme after 2013. So the change to find an integrated annual report (IAR) of 2011 is very small. To measure the FP two methods can be used. First, accounting- based and second market- based measures. Previous studies discuss the proper measure of FP but more will be disclosed in Chapter 3 of this thesis/document. To measure the FP of the companies in this study the accounting-based method and the market-based method were used. Measuring non-financial information, meaning environmental and social aspects, according to Turker (2009), there are four approaches. Reputation indices and databases, single or multiple issue indicators, content analysis of corporate publications and scales measuring CSR performance of individuals. In this research the content analysis technique is used.

## 1.4 Aim of study/Purpose

The first aim/purpose of this thesis is to set a basis for further research on the topic of IR especially for students. Secondly, to investigate if reporting in integrated manner doesn't or does have effect on the firms' FP. In this thesis the FP measurement indicators are the ROA and EPS. The companies initially participated in the IIRC pilot programme in the period dating from 2011 up to 2014 are the sample group for this research. The study will contribute to the existing literature regarding this topic of IR.

## 1.5 Limitations

The thesis empirical findings are limited to comprise companies participated in the IIRC pilot programme. Integrated reports dating from 2012 and 2013 will be used because these annual reports had greater change to be integrated. Not all the companies that participated in the pilot programme were included in this study because a great part joined the program after the introduction period of September 2011. The GRI guidelines were used to measure the NFI, whereas other guidelines could also be used. Because the topic of IR is quit new there was not much research on the effect of IR on FP.

## 1.6 Proceeding outline of the thesis

| | |
|---|---|
| Background information on IR | the second chapter of this thesis contains background information on IR and CSR reporting, as the NFI mentioned in this thesis. It will give a fundamental understanding and answer on the sub questions “what is integrated reporting, what are the benefits and to who is this information relevant?”. Secondly it will also discuss CSR reporting. |
| Theoretical Framework | the third chapter of this thesis discusses the theories that support CSR and voluntary disclosure, one of the pillars of integrated reporting. The stakeholder theory is theoretically linked to CSR regarding to previous research. Other fundamental theories such as the legitimacy theory, institutional theories etc. are also discussed and are of great interest to the content of this thesis. |
| Previous/Prior research | the fourth chapter provides findings of previous literature regarding the impact of CSR disclosures and FP. Further literature on integrated reporting is also discussed. This chapter also introduces the hypotheses, which will be discussed in the following chapter. |
| Hypotheses and method | the fifth chapter presents the hypotheses and presents the research method (s) used for this research. A clarification of the data collected will be presented. |
| Results and Analysis | In chapter six the results and analysis of the empirical findings, in relation to the research question is presented. Thereafter, the results of the hypotheses and the performed calculations will be presented. |
| Conclusions | The seventh chapter will be the last and concluding chapter summarizing the output from the analysis. Based on compiled results, the research question of the study will be answered. |

The limitations and suggestions for further research are also presented in this final chapter.

# Chapter 2 Background information of IR

## 2.1 Introduction

This chapter presents some background information of IR. In this section, insights of what an Integrated Report is, how it has been developed, its benefits and relevance will be explained. The definition of integrated reporting is presented in paragraph 2.2, in paragraph 2.3 the evolution of integrated reporting will be discussed, in sub paragraph 2.3.1 the topic “existing frameworks and the emergence of integrated reporting” will be discussed. Further on sub paragraph 2.3.2 presents the draft framework for integrated reporting in South Africa. Paragraph 2.4 discusses the CSR report. Paragraph 2.5 is about the CSR measurement. In paragraph 2.6 the IIRC Pilot Programme is highlighted. Benefits and relevance of the Integrated Report are discussed in paragraph 2.7. At the end in paragraph 2.8 a summary is presented.

## 2.2 Integrated reporting

Financial information included in a company’s report has always been a value added act. It is one of the building blocks of a company’s reporting. Because of the changing environment, globalization, it has forced businesses to react more aggressive to stakeholders demands. One of the demands was including non-financial information. Non-financial information has gained more importance; leading to that company reports go beyond the financial metrics, submitting a broader perspective (Kosovic & Patel, 2013). The investor’s awareness of non-financial information has increased, mainly due to the growth of social responsible investments (Renneboog et al., 2008). Non-financial information can be seen as an intangible asset, which is not retrospective, but rather focusing on the company’s future, just as the investors like it (Lundgren, 2007; Heal, 2005). The reporting requirements began to change and so a new area of corporate reporting is introduced: integrated reporting, the financial and non-financial information in one report. Integrated reporting will present additional information about a company’s strategy, governance and performance, all transparent disclosures. This is also known as a CSR report.

Inferred from the introduction, integrated reporting is a new term and attempts to be the future in corporate reporting. What is an integrated report and what is the real motivation behind this report? As we know from traditional financial reporting stakeholders have an important role in deciding the presentation and content of the financial report of a company,

this is the principle of stakeholder inclusiveness (Larsson and Ljungdahl, 2006, p 70ff). It has been said many times and there is much written about that stakeholders need to be included when presenting financial reports, for example, early stakeholder theorist at Stanford Research Institute were first to recognize that support from stakeholders, by integration of their interest, could be vital to firm success (Hitt et al., 2001 p.190f). After all, financials reports are presented in the interest of the stakeholders. Freeman, 1984, defined stakeholders as "any group or individual who can affect or is affected by the achievement of the activities of an organization". So it is quit logic that stakeholders decide for great part what's presented in a financial report. Westerforst & Vesterberg, 2011 say; "the principle of stakeholder inclusiveness emphasizes that interest and expectations from company's stakeholders are important to determine the scope and content of a report". That means, having the right information about stakeholders interest and reasonable expectations, e.g. through engaging stakeholders in different activities, can help organizations to report information that is relevant to its stakeholders. So the first motivation of a report in an integrated form is a benefit in the interest of the company's stakeholders. By saying this, the theory of the decision usefulness approach comes to mind. The decision usefulness approach to financial reporting is an approach to the preparation of financial accounting information that emphasis on the theory of investor decision making in order to infer the nature and types of information that investors need ( Decision Usefulness Approach, 2009). It is an approach usually adopted to satisfy the information needs of the primary users of the financial reports of the reporting entities: investors and creditors

As for the question "what is an integrated report", the simplest definition found is that it is a single document that contains a company's financial and non-financial, environmental, social, and governance (ESG)-performance (Eccles & Saltzman, 2011, p.57).

So this document, the integrated report, provides in a composite, organized and cohesive form, information on the company's strategy, corporate governance, performance and prospects. It also reflects the commercial, social and environmental context in which it operates in such a way it considers the need in satisfying stakeholders (IIRC, 2011).

The IIRC defines Integrated Reporting as follow:

"*Integrated Reporting demonstrates the linkages between organization's strategy, governance and financial performance and the social, environmental and economic context within which*

*it operates. By reinforcing these connections, Integrated Reporting can help business to take more sustainable decisions and enable investors and other stakeholders to understand how an organization is really performing" (IIRC, 2011c).*

## 2.3 The evolution of Integrated Reporting

The so known traditional corporate reporting model originates from the industrial society developed in the 1930's. However, according to many, the model provides a backwards-looking review of performance and does not provide enough relevant information for the current decision-making. So the idea to disclose non-financial information, supplementing the financial information, became more interesting at this period of time (Krzus, 2011). The financial information was criticized on not providing a realistic picture and not giving enough information of a company or predicting its future performance, no connection was made between Environmental, Social, and Governance (ESG) issues to business strategy and financial performance. While companies criticized the financial information, the non-financial information was positively beheld, providing insights of the company's future performance and intangible assets. Exactly one of the objectives that the IIRC wishes to clarify through this integrated report. As Krzus discusses an integrated report enables the reader to better understand the cause and effect relation between, for example, financial and sustainability performance. Further he states that such a report also leverages the Internet and Web 2.0 tools and technologies.

As mentioned already, reporting information to stakeholders on social, environmental and governance was an additional idea invented at this time because the current financial reports fail to make the connection between these concepts, the business strategy and financial performance (www.sustainabilitysa.org). In 1980s, the corporate reporting had developed one-step further; including financial statements, management commentary, governance and remuneration, and environmental reporting. Several years later Elkington (1997) introduced the term triple bottom line. This meant that economic, environmental and social performance was disclosed into the company reports (Eccles & Serafeim, 2011), still this way of reporting did not match the concept idea of an integrated report.

Recent research on the IR; Dragu and Tudor (2013) did an analysis of the evolution of the IR. They say that the history of the IR started before the initiative of the IIRC. It actually started from the moment that companies disclosed sustainability and CSR information. These reports

were presented separate from the annual financial report. They state that the evolution of the IR has three stages, namely: the non-financial reporting initiatives, the sustainability era, and the revolution of the IR. Durak (2013), did an analysis of factors that could affect a company's preference on Integrated Reporting. He specified the factors in two groups; country-specific factors and firm-specific factors. The country-specific factors are according to this study, political system, a country's legal system, the financial system of the country, education and labor system, the cultural system and lastly the economic system. The firm-specific factors affecting the IR preference are ownership structure, corporate governance, firm size, profitability and growth opportunities, and lastly the industry.

### 2.3.1 Existing frameworks and the emergence of Integrated Reporting

As for including non-financial information in a financial report the Global Reporting Initiative (GRI) guidelines, released in the year 2000, have become the most common guidelines used within sustainability reporting (GRI, 2011b). The main goal of the GRI framework was to develop guidelines and indicators for companies to measure and report their economic, environmental, and social performance.

In 2004, the Prince's Accounting for Sustainability Project (A4S) was initiated. The A4S is the main initiator behind the Integrated Reporting Committee (IIRC) that was established in 2010. According to prior research conducted under A4S resulted in the development of a Connected Reporting Framework (CRF). Just as Krzus and Hopwood et al. (2010) concluded, that reported information should show and explain the connection between the organization's strategic objectives and its context, risks and opportunities, key resources and relationships and governance and remuneration structures. The objective of the A4S CRF is that it guides companies to define what and how to report the connection between a company's strategy, financial performance and regard of social and environmental issues (A4S, 2011). Noteworthy was that the CRF was a separate framework, building on the International Financial Reporting Standard (IFRS) and the GRI. It was Hopwood et al (2010) that concluded that there was a need for a new connected and integrated reporting model supported by governments, the finance and accounting community and stakeholder groups.

In the following paragraph can be derived how the development of the first integrated report came about. It started in South Africa.

### 2.3.2 The draft framework for integrated reporting in South Africa

On January 25th 2011 the IIRC of South Africa released a discussion paper on "The Framework for Integrated Reporting and the Integrated Report" (IIRC, 2011b). South Africa is on the frontier of integrated reporting by demanding all listed companies to publish integrated reports for financial years starting on or after the march 1st 2010 (or to explain why their report is not integrated). The framework recommends the use of the GRI guidelines and suggests similar main elements, with the addition of e.g. the identification of risks and opportunities, strategic objectives and performance measured by key performance indicators (KPIs) and key risk indicators (KRIs), remuneration policies and forward looking information (IIRC, 2011a).

In September 2011, the International Integrated Reporting Council (IIRC) launched a discussion paper, *Towards Integrated Reporting-Communicating Value in the 21st Century*, soliciting feedback on a new approach to reporting-Integrated Reporting. The discussion paper considered the rationale behind the move towards Integrated Reporting, offered initial proposals for the development of an International Integrated Reporting Framework and outlined the possible next steps for its creation and adoption. Its purpose was to prompt input from all those with a stake in improved reporting, including producers and users of reports. There was a comment period which ended on 14 December 2011. Specific questions were posed in the discussion paper and Views expressed were mixed as to whether Integrated Reporting should be mandatory or voluntary. Some noted the need for regulatory support of one kind or another, while others supported the flexibility of a voluntary approach and voiced concerns that the IIRC should not advocate embedding Integrated Reporting into legislation. The question related to these results was, "do you support the development of an International Integrated Reporting Framework? Why/why not?"(Towards Integrated Reporting, communicating Value in the 21st Century, 2012).

## 2.4 The CSR report

According to the GRI the definition of a CSR report is "the process of providing information designed to discharge social accountability". Through the publicity of CSR disclosures companies and organizations communicate their performances on economic, environmental and social impacts, caused by its day to day activities, to stakeholders. These CSR disclosures are provided in a non-financial report, a triple bottom line report, a

standalone CSR report or the recent development, the integrated report.

Some benefits of the CSR report according to Douglas et al. (2004) are that CSR reporting can be seen as a way to improve corporate image towards the stakeholders and CSR reporting provides more information about the social performance of an organization towards the stakeholders which also improves the relation between the organization and its stakeholders. Morsing & Schultz (2006) state that through CSR reporting companies can better respond to the needs of stakeholders and by involving the stakeholders the companies can stay in tune with the constantly and concurrently changing stakeholder expectations.

Other benefits are that companies can use CSR reporting as appliance to control for their own legitimacy. This is further discussed in the legitimacy theory. The agency theory, later on in this thesis, deals with the benefit that CSR reporting reduces information asymmetry between de stakeholders and the companies. Douglas et al. (2004) notes that difference in CSR reporting behavior depends on the government policies, differences in culture and the stage/phase of the economic development. Douglas stresses that not quantity of the information of a CSR report is what counts but the quality of the disclosed CSR information (Douglas et al., 2004). Sutantoputra (2009) argues that social performance of organizations is judged on the level of CSR reporting and this based on the GRI framework. Sometimes CSR performance is disclosed in annual reports of organizations, looking more like an integrated report. Jet, most of the CSR disclosures are disclosed in standalone CSR reports (Sutantoputra, 2009). In the next paragraph the CSR measures is discussed.

## 2.5 CSR measurements

The central question regarding CSR research is the methodology to quantify it. Fiori et al., (2007) says that there are some concerns in measuring CSR activities. It is difficult for managers to determine what the key performance indicators are of the social responsibility. According to Fiori, CSR reflects an approach to internal decision making, so its presence or absence may not easily be determined by the external public. CSR indicators aim to provide social investors accurate information that makes transparent the extent to which firms' behavior are socially responsible (Chatterji et al., 2007). There are five approaches to measure social performance: the content of annual reports, pollution indicators of indicators, questionnaire surveys, indicators of reputation and the data produced by specialized agencies such as KLD, Oekom, Triodos, Eiris, Avanzi, BMJ rating, Vigeo, EthiFinance and diversum

SAS (Igales and Gond, 2003). Turker (2009) however, discusses four other approaches to measure the CSR performance: reputation indices and databases, single or multiple issue indicators, content analysis of corporate publications, and scales measuring CSR performance of individuals. The most import tools used by agencies to decide firms' social ranks are their annual reports, sustainability reports, environmental reports, or corporate social responsibility reports in addition to their financial indicators, and via interviews with managers. In this thesis the method of content analysis is used to measure the social and environmental activities.

## 2.6 IIRC's Pilot Programme

In September 2011 the IIRC started a pilot program to help to contribute to the development of the international integrated report framework. In this pilot program different companies from different countries in different sectors have participated. The participants of the Pilot Program consisted of a group of organizations, which had the possibility to conduce with decisions regarding the development and representation of global leadership, in the new and emerging field of corporate reporting (IIRC, 2013).

Both the investors as well as the business environments were responsible to decide throughout the Pilot Program whether the principles, content and the application of integrated reporting are being tested and developed. Their experience proves that integrated reporting is not just about producing reports; it is about integrated thinking and the way an organization creates value over time (IIRC Pilot Program yearbook 2013). The Pilot Program was effective till September 2014, in order for the participants to have time to test the framework during their next reporting cycle. This will facilitate the IIRC to evaluate the eventuation and complete their process regarding integrated reporting. The Pilot Program is amended to guide and help organizations on how to implement integrated reporting, incorporating two approaches, the Business Network and the Investors Network. The first approach, the Business Network; had a quantitative approach of eighty organizations worldwide from multinational corporations to public sectors. The second approach, Investors Network; accounts for over thirty institutional investors internationally (IIRC, 2013).

The IIRC Pilot Program Business Network was founded in 2011 and since then eighty businesses have committed to the program worldwide. The companies and other members are fully dedicated and engaged in the process of IIRC, for instance through the Pilot Program

community website, regional and sector networks. This engagement provides them with the possibility to discuss and challenge developing technical material, share their experiences and its applicability. In their integrated reporting journey, the businesses in the IIRC Pilot Program are tackling key interconnected areas of Integrated Reporting; the use of capitals, the creation of value and the definition of the organization's business model. Therefore the main purpose of the Pilot Program Business Network was to; present IIRC with responses on its key building block in the framework, development and practical appliance in order to fortitude businesses towards the effectuation of integrated reporting. North America, South America and Asia were the central areas they focused upon (IIRC, 2013).

The Investor Network was founded one year later, in 2012. The IIRC cooperates with Principles for Responsible Investment (PRI) in order to supplant the Pilot Program Investor Network, overseen by Colin Melvin the CEO of Hermes Equity Ownership Services (EOS). The objective of the Investor Network was to provide investor's insights on deficits of existing corporate reporting, present positive challenges and feedback on emerging reporting from Pilot Program reporting organizations and to ensure the development of the International Integrated Reporting Framework. Furthermore, the objective is to maintain the relationship with the investor's community on integrated reporting (IIRC, 2013).

## 2.7 Benefits and relevance of IR

This paragraph discusses the benefits and the relevance of the Integrated Report. Krzus (2011) discusses four critical benefits of integrated reporting:

- Greater clarity, Krzus means that as a company achieves a better understanding about the relation between financial and non-financial performance, monitoring and review controls will be improved and systems and business processes will likely see increased efficiencies and effectiveness. This will have an impact on the way users of an integrated report will better understand the relation between financial and non-financial performance of the company.
- Better decisions, just as Kaplan and Norton's body of work on a Balanced Scorecard[1] provides rich evidence and thoughtful arguments demonstrating how better

[1] The balanced scorecard is a method by which one will measure and update the most important parts of a business in a structured way. Most companies look at easily measurable Key Performance Indicators (KPIs) such as revenue and margin in the field of personnel management, for example, absenteeism. With the balance scorecard one also tries to measure the

information and measurement leads to better decisions. Better-informed decisions about the relation between financial and non-financial performance will improve the efficient and effective use of capital and other resources

- Deeper engagement, by not only presenting the integrated report in paper form but by also making use of the internet central to this process. The internet, in addition, social media platforms, discussion forums, blogs, and podcasts are likely to lead to richer stakeholder engagement. Stakeholders have more excess to detailed information regarding financial and non-financial outcomes and the relation between them. So a company's website should be simple and easy to navigate and permit visitors to perform their own analysis of information provided by the company
- Lower reputational risk, with the emergence of the integrated report it can push a company towards more integrated risk management processes. What integrated reporting does is drive a chain of events that can help companies more effectively focus on risk

At the same time Eccles & Saltzman (2011) identify three classes of benefits of IR:

- Internal benefits: better internal resource allocation decisions, greater engagements with shareholders and other stakeholders, and lower reputational risk
- External market benefits: meeting the needs of mainstream investors who want ESG information, appearing on sustainability indices, and ensuring that data vendors report accurate non-financial information on the company
- Managing regulatory risk: being prepared for a likely wave of global regulation, responding to requests from stock exchanges, and having a seat at the table as frameworks and standards are developed

Noteworthy is that both writers mention the importance of greater engagement, lower reputational risk and the need to meet the needs of investors.

The discussion paper from the Integrated Reporting Committee of South Africa, 2011, listed a couple of benefits of an integrated report to an organization. In brief the benefits address the following;

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less quantifiable aspects, for example, customer satisfaction, customer loyalty and satisfaction of the company's employees (http://balancedscorecard.org/Resources/About-the-Balanced-Scorecard).

- The process of producing an integrated report is an excellent means for the leadership of the organization to gain an in-depth understanding of the organization's strategy and how it affects and is affected by environmental, social, financial and economic issues. The process also helps to improve the internal awareness of these issues and the impact they have on the organization
- The leadership can demonstrate to a wide range of stakeholders that it fully understands the business and the challenges facing the business, and that is being effective in steering the organization towards a long-term sustainable future
- The report provides a holistic view of the organization and is useful to any stakeholder who has a longer term interest in the organization enabling them to make an informed assessment of its ability to create and sustain value
- Because the integrated report promotes transparency with both positive and negative issues and challenges, the impact would be greater trust and confidence in the organization and an enhanced reputation among stakeholders
- By considering risks from an integrated perspective, risk management can be enhanced
- The leadership's ability to demonstrate its effectiveness, coupled with the increase in transparency, could result in a lower cost of capital to the organization
- As organizations look for the efficiencies required to address the challenges of resource constrains, they frequently realize cost savings in their business processes and discover ways to improve their products and services
- This process of integration encourages the development of a culture of innovation in the organization
- Organizations that understand and admit having external challenges are likely to be more competitive in the market place, and enjoy enhanced brand value and improved customer support
- Organizations that are aware of their external threats, are better able to discover new business opportunities

After analyzing the above mentioned benefits from the discussion paper, it is clear that three main groups, the leaders, the stakeholders and the organization itself get the most benefit from the integrated report. Luckily though, otherwise this report would be of no use if others except for these groups would benefit from it.

### 2.8 summary

This chapter presented the evolution, emergence, benefits and relevance of the IR. IR is a new term and attempts to be the future in corporate reporting. The simplest definition found is that it is a single document that contains a company's financial, non-financial, environmental, social, and governance (ESG)-performance (Eccles & Saltzman, 2011, p.57). In the following chapter the theoretical framework is discussed presenting the theories that support the idea of including non-financial information to the financial information.

## Chapter 3 Theoretical framework

### 3.1 Introduction

Urquiza et al. (2010) says that theories are developed to explain the reason behind disclosing information. In this chapter a broader understanding of underlying theories regarding integrated reporting will be presented. The theoretical framework is intended to

explain fundamental theories such as the stakeholder theory, the agency theory, and legitimacy theory etcetera, to give the reader a comprehensive understanding of the empirical results as well as the concluding results in the following chapters. These theories were used because they relate to voluntary disclosure; they are usually used through the literature to explain voluntary disclosure. Paragraph 3.2 discusses voluntary disclosure. Paragraph 3.3 discusses the political economy theory. Paragraph 3.4 discusses the stakeholder theory, paragraph 3.5 the legitimacy theory and paragraph 3.6 the institutional theory. The positive accounting theory is discussed in paragraph 3.7. Paragraph 3.8 is about the agency theory while paragraph 3.9 discusses the signalling theory. Finally, a summary paragraph is provided at the end of this chapter. Companies have different reasons to voluntarily disclose information and most of the time companies voluntarily disclose information about their social and environmental performance.

## 3.2 Voluntary disclosure

Corporate disclosure falls into two broad categories: mandatory and voluntary. Mandatory disclosure consists of information disclosed in order to comply with requirements of laws and regulations. This paragraph discusses voluntary disclosure and explains why companies/managers consider using voluntary disclosure. One reason is because of dissatisfaction with mandatory financial reporting; it has led investors, financial markets and other key stakeholders to demand that companies voluntarily provide more comprehensive information about their long-term strategies and performance. The demand for enhanced disclosures has been further triggered by the increasing popularity of the stakeholder approach that has resulted in a realization that the interactions of a company are not limited to just shareholders. There are other stakeholder groups as well, who also have a right to be provided with information about how the activities of the company impact them. Healy and Palepu, 2001 wrote that under voluntary disclosure companies reveal the amount of information that is demanded by the investors, in order to reach the efficient level of disclosure. The FASB has encouraged companies to make such disclosures in the Management Discussion and Analysis (MD&A) section of the annual reports (www.fasb.org).

Meek et al. (1995) explains voluntary disclosure as extra information that is provided by companies on a voluntary basis to satisfy the information needs of users for decision-making.

The Financial Accounting Standard Board (FASB, 2000) describes “voluntary disclosures” as “information primarily outside of the financial statements that are not explicitly required by accounting rules or standards”. On the other hand, voluntary disclosure is any information disclosed in addition to mandatory disclosure (Shehata, 2014). Lindblom says that much of the demand for Corporate Social Disclosure (CSD) can be seen as the requirement of the public for information to determine that corporations are “appropriate” or “right and proper”, i.e. to evaluate corporate legitimacy. The voluntary disclosure can be seen as the effort to be legitimate or have a status of legitimacy (Lindblom, 1984).

Most of the corporations voluntarily disclose ‘social’ information. Meek et al., 1995, explains that voluntary disclosure can be divided in three groups. The nonfinancial information such as CSR reports is relevant for a broader group of stakeholders while investors are more interested in the strategic and financial information. CSR information is interesting to disclose because of the social and environmental issues that companies unsolicited disclose (Hoff et al., 2008). Gray, 2001 argues that voluntarily CSD are a case of information inductance. Swift (2001) is in favor of that companies/ managers should account for their operations through CSR disclosure to stakeholders and society. Voluntary disclosures are aimed at reducing the information asymmetry among managers and investors, and provide clarifications about long-term business sustainability that concerns various stakeholder groups. Grossman (1981) and Milgrom (1981), expose that companies should voluntarily publish all information accessible, since if investors believe that the company withhold information; they will assume the information to be negative, leading to a decline in the company’s market value. Analyzing the above it is clear that voluntary disclosure is to attract investors.

Dragu and Tiron-Tudor (2013b) investigated whether there is a correlation between the voluntary adoption of integrated reporting and political, cultural and economic factors. The method and findings were not disclosed. The study was based on the reports of 58 companies who participated in the IIRC pilot project for 2010 to 2012. The results show that political and economic factors are positively correlated with the voluntary adoption of IR. The social responsibility indices were negatively correlated. According to Dragu and Tiron- Tudor (2014) there are mainly three theories about integrated reporting practices: the stakeholder theory versus the shareholder theory, new institutional and legitimacy theory and lastly the innovation diffusion theory. The latter originated from the institutional theory.

According to Shehata (2014), theories related to, and forming the basis for voluntary disclosure are agency theory, signaling theory, capital need theory, and legitimacy theory. Other theories such as the stakeholder theory, the Positive Accounting Theory and the institutional theory also give an understanding of the association of voluntary disclosure and CSR reporting. In the following paragraphs the theories are further explained.

## 3.3 Political economy theory

Theories derived from the political theory are the Legitimacy theory, stakeholder theory and the institutional theory. According to Gray et al., 1996, political economy theory is 'the social, political and economic framework within which life takes place'. As Deegan and Unerman, 2006 say 'it is not easy to investigate economic issues without the political, social, and institutional theory. According to the political economy theory, managers gain legitimacy by reporting CSR information. Management perceives the social information of society and discloses the information strategically, considering that that information is aligned with the desired perception of society (Dowling and Pfeffer, 1975). This view is embraced by the legitimacy theory. In the next subsections the stakeholder theory, legitimacy theory and the institutional theory derived from the political economy theory are further discussed. Other theories such as the positive accounting theory, the agency theory and signaling theory are also relevant to understand voluntary disclosure.

## 3.4 Stakeholder theory

The stakeholder theory is also one of the motives to voluntary disclose CSR information. To Freeman a stakeholder is an individual or group that can affect the achievements of the organization's objectives or is or are affected by these objectives (Freeman, 1984). To Clarkson, 1995, stakeholders are persons or groups that have, or claim ownership, rights, or interest in a company and its activities. The legitimacy theory focuses on society in general whereas the stakeholder focuses on particular stakeholder groups. Some stakeholder groups are: suppliers, customers, society, governments and NGO's. "Stakeholder theory attempts to articulate a fundamental question in a systematic way: which groups are stakeholders deserving or requiring management attention, and which are not?"(Mitchell et al., 1997). This theory acknowledges the dynamic and complex relationships between organizations and their stakeholders and that these relationships involve responsibility and accountability (Gray et al., 1996).

The stakeholder theory has an ethical and managerial part (Deegan and Unerman 2006). The ethical part states that all stakeholder groups should be treated equal. The managerial part describes that the more powerful stakeholders are of greater interest to companies. The companies will satisfy the demands of the powerful stakeholders because they are essential for the company's survival. The managerial branch of the stakeholder theory provides a framework in which to analyze CSD in an organization centered way. The successful outcome of this method is some form of organizational legitimacy. However, the stakeholder management approach to CSD will only gain, maintain or restore organizational legitimacy for those stakeholders whose needs have been addressed.

## 3.5 Legitimacy theory

This theory assumes that a company has no right to exist unless its values are being perceived as matching, are congruence, with that of the society at large where it operates (Dowling and Peffer, 1975; Lindblom, 1994). Organizations are expected to be in interaction with society, this to influence society and vice-versa (Deegan and Unerman, 2006). Like PAT and the Agency theory, this theory also explains the incentive for a company/ manager to voluntarily disclose CSR information. The Legitimacy theory gives understanding that there is a social contract among a company and the community. Companies should stick to this contract otherwise they may damage their own legitimacy and loose believe of society (Dai, 2010). And here is where the companies come in with their voluntary disclosure. According to Cho et al., 2007, companies can use the information in these sorts of disclosures to maintain their legitimacy and be on one level with society.

The factors that affect the provision of and need for voluntary disclosure have been clearly assembled by Healy and Palepu (2001) and Graham et al. (2005). The motivations include capital markets transactions/ information asymmetry, corporate control contest, stock compensation, increased analyst coverage, management talent signaling, and limitations of mandatory disclosure.

European research centers such as the Organization for Economic Co-operation and Development (OECD, 2001), the Association of Chartered Certified Accountants (ACCA, 1999) and the Institute for Social and Ethical Accounting (ISEA, 1999) have each attempted to develop voluntary disclosure frameworks as they relate to corporate governance structure, social accounting and stakeholder reporting. Much research has been done on voluntary

disclosure itself and in relation with e.g. sustainable development, stock prices, stakeholder groups other than shareholders, across different national contexts and so on. Because the issue of voluntary disclosure is of significance to the global community, one needs to be careful and sensitive about differences in voluntary disclosure practices that could be driven by actions of the government, regulators and other stakeholders due to differences in country contexts.

## 3.6 The Institutional theory

As the stakeholder theory and the legitimacy theory, the institutional theory provides information covering the actions of organizations regarding the expectations of society environmentally, social and institutional pressures (Deegan and Unerman, 2006). Traditionally, institutional theory has examined how firms conform to isomorphism pressures in order to gain legitimacy and enhance their chances at survival (Suchman, 1995). Another definition is that 'the institutional theory examines the role of social pressures in shaping firm behavior' (Oliver, 1997). The theory argues that firms will adopt specific behavior to obtain the access to resources and the support from key stakeholders (DiMaggio and Powell, 1983). According to the definition of Scott, the institutional theory adopts a sociological perspective to explain organizational structures and behavior. It draws attention to the social and cultural factors that influence organizational decision-making (Scott 2001).

The institutional theory discusses two aspects, 'isomorphism' and 'decoupling'. The latter refers to the detachment between actual organizational practices and publicly announced practices, for example a company's disclosure on recycled water and the actual performance. Isomorphism refers to the process where institutional practices, example CSR change and adapt. In other words, when a company uses a certain method to report a specific aspect of CSR it is dependent on other companies reporting strategy and industry (Dillard et.al, 2004). Isomorphism can be further divided in coercive-, mimetic- and normative isomorphism. Coercive isomorphism is a result of stakeholders' pressure. Mimetic isomorphism is imitation of other companies' behavior, copying other firm disclosure strategies. It is said that this behavior is a result of uncertainty, or when a clear course of action is unavailable (Mizruchi and Fein, 1999). Lastly, normative isomorphism, in this case company adapts their disclosure strategy as a response to group norms in the same industry.

## 3.7 The Positive Accounting Theory

Following on from the definition of the voluntary theory of Meek et al (1999:555) a link can be drawn to the positive accounting theory. This theory explains the choice of accounting practices that are used by managers. Central in this theory is "the assumption that all individuals' actions are driven by self-interest and those individuals will always act in an opportunistic manner to the extent that the actions will increase their wealth" (Deegan, 2009, p.258). The positive accounting theory is structured around three important hypothesis, these were also described by Watts and Zimmerman (1990): the bonus plan hypothesis, the debt covenant hypothesis, and the political cost hypothesis.

- The bonus plan hypothesis or the management compensation hypothesis predicts that managers who are compensated by means of a bonus plan dependent on reported net income will be likely to maximize current reported profits by choosing accounting policies that shift reported profits from future to current periods. Sometimes managers will use methods that have the opposite effect, minimize current reported profits. Because of the basic assumption of the positive accounting theory, managers will always choose accounting methods that will help them attain the bonus. Logically can be stated that managers are in favor to voluntarily disclose CSR information. This affect will increase the FP of the company which will affect the bonus of the manager.
- The debt covenant hypothesis predicts that the closer a firm is to violating debt covenants based on accounting variables, the more likely is the firm manager to choose accounting policies that shift reported profits from future to current periods. In other words managers' use accounting methods that increase income depended on the height of the firm's debt equity ratio. So, if CSR is positively related to the companies FP there is a bigger change that managers voluntarily disclose CSR information in order to relax the debt constraints (Scott, 2014).
- The political cost hypothesis predicts that the greater the political costs faced by a firm, the more likely is the firm manager to choose accounting policies that shift reported profits from current to future periods. Also according to this hypothesis, the larger the company, the more suitable it is for the manager to use accounting procedures that cancel current reported earnings to future periods (Scott, 2014).

Following is the managers will not disclose CSR information; it can increase their income and affects their political supervision.

According to the PAT CSR disclosures are triggered by self-interest motives of company managers. They can embrace the first or second hypothesis to meet CSR information, or they can use the third hypothesis and choose not to disclose CSR information.

In the extension of the positive accounting theory, economic consequences need to be considered. Economic consequences are defined as changes in accounting policies, including changes resulting from new accounting standards that matter to firms and their managers, even if those accounting policy changes have no differential cash flow effects (http://www.cga-education.org/2008-09/PAP/modsums/AT1/AT1.module06.htm). So, accounting policy choices matter to managers and investors, since accounting policies can affect manager actions, hence firm value.

How does positive accounting theory contribute to economic consequences? As can be derived from the above, positive accounting theory shows how accounting can have economic consequences; even without cash flow effects, accounting policies matter because they affect the provisions of contracts based on financial statement variables and can affect the firm's political environment. Thus, accounting policies matter to managers- they have economic consequences. (http://www.cgaeducation.org/200809/PAP/modsums/AT1/AT1.module06.htm)

## 3.8 Agency theory

Companies as well as managers, want to voluntary disclose information to mitigate the agency problem and so the agency costs derived from this problem. Jensen and Meckling (1976: 308) define the agency relationship as "a contract under which one or more persons (the principles) engage another person (the agent) to perform some service on behalf which involves delegating some decision-making authority to the agent." Agents correspond to managers, whereas principles correspond to shareholders from companies' perspective.
According to this theory both parties are basing their decisions in their own interest. Shareholders expect that managers will maximize their wealth, only this could not be in the manager's personal interests. The managers work for their own interests/benefit, because they have more or better information of the company then the shareholders. Just as the PAT the Agency theory is based on the belief that all parties are driven by self-interest. So there is a conflict in "importance of information" or better said information-asymmetry.

Grossman et al, (2002) state that the conflict is known as the principal-agent problem, so following up that information-asymmetry is the outcome of the agency problem. The information-asymmetry leads to the problem of agency costs.

Agency costs stem from the assumption that the two parties, agents and principles have different interest. Deegan et al, (2006) said that the Agency theory suspects that transactions costs and information costs do exist and these costs are known as agency costs (Deegan et al., 2006, p. 213). These costs are made by the principals to influence the agents to perform in their (principals) interests. These costs could be for example bonus compensation in order to increase the company profits (Brealey et al., 2009). The Agency theory tries to clarify that CSR disclosures are used to decrease the agency costs and reduce information asymmetries. CSR disclosures are used by the agents as evidence to the principals that they are not working in their own interest. In the next paragraph the signaling theory is discussed.

## 3.9 Signalling theory

This theory was originally developed to clarify the information asymmetry in the labor market (Spence, 1973). It has also been used to explain voluntary disclosure in corporate reporting (Ross, 1977). As a result of the information asymmetry problem, companies signal certain information to investors to show that they are better than other companies in the market for the purpose of attracting investments and enhancing a favorable reputation (Verrecchia, 1983). Voluntary disclosure is one of the signaling means, where companies would disclose more information than the mandatory ones required by laws and regulations in order to signal that they are better (Campbell et al., 2001). This theory can be seen as the result of the agency theory.

## 3.10 summary

The theories used in this chapter are more or less related to voluntary disclosure. The chapter starts with an understanding of voluntary disclosure, as why companies or managers choose to voluntarily disclose information, especially CSR information. Theories such as the stakeholder theory, the legitimacy theory and the institutional theory are derived from the political economy theory. The political economy theory discusses that manager's gain legitimacy by reporting CSR information. The stakeholder theory focuses on the different stakeholder groups, which stakeholders deserve or require management attention, and which

not?” As for the legitimacy theory, this theory explains that organizations are continually seeking to ensure that they operate within the bounds and norms of society. The PAT on the other hand, explains the link of the self-interest motives of the company managers and the voluntary CSR disclosures. Managers can choose not to disclose CSR information through the political cost hypotheses or use the bonus plan- or debt covenant hypotheses to disclose CSR information. The agency theory explains that CSR information is used by the agent to make clear to the principal that he, the agent, is not working in his own interest. It is a way of reducing the information asymmetry that exists between the agent and principle.

# Chapter 4 Literature review

## 4.1 Introduction

In this chapter the findings and evaluation of different researchers regarding financial performance, integrated reporting and non-financial information (CSR) are viewed. Based on the findings of the previous research a connection will be made with the research question of this thesis whether NFI (CSR information) and IR influence the FP. A comparison and analysis will be made to draw a conclusion on the hypotheses that are discussed in the following chapter. The paragraph 4.2 reviewed previous research on the study of Margolis and Walsh (2001), Orlitzky et al. (2003), Nelling and Web (2009), Karagiorgos (2010), Thao Trang and Yekini (2010). They conducted the study of CSR and FP. In paragraph 4.3 reviews of IR and FP are discussed. At the end of this chapter a critical analysis of the studies presented is set out. In appendix 3 a summarizing table of the main findings is presented.

## 4.2 Non-financial information and Financial Performance

This paragraph reviews studies concerning the association between non-financial information and FP. Most studies used the CSR report as the variable for NFI. Worth mentioning in this research is the analysis that was made by Margolis and Walsh (2001) regarding this topic. They notice that Corporate Social performance (CSP) has been treated as an independent variable, predicting financial performance (FP) in 109 of the 127 studies. 54 of the 109 found a positive relation between CSP and FP, 7 found a negative relation, while 20 reported mixed findings. In another case CSP has been treated as a dependent variable, predicted by FP, in 22 of the 127 studies. The results in this case show that 16 studies pointed to a positive relation. Four studies investigated the relation in both directions, explaining why there are more results than studies. They conclude that there are more positive associations, and little evidence of a negative association between a company's social performance and its FP. The study regarding the meta-analysis of 52 CSP-CFP studies reached the same substantive conclusion (Orlitzky, Schmidt, and Rynes, 2003). Orlitzky et al. (2003) used a meta-analysis of 52 studies and found a positive correlation between Corporate Social Performance (CSP) and Corporate Financial Performance (CFP). They used two different conceptualizations of CSP, one using a narrow definition of social performance (excluded measures of environmental performance) and secondly corporate environmental performance which shows that corporate environmental performance has

a smaller relation with CFP. They also concluded that the association is stronger due to the accounting-based measure for CFP than the market-based measure. A study by Nelling and Webb (2009) show the causal relation between CSR and FP and ended up with the remark that there is no association between CSR and FP. They used accounting-and market-based measurements for FP. Firm size and leverage were the control variables. Surprisingly they found no evidence that CSR influences a company's FP. Another researcher, Karagiorgos (2010) also investigated the association between CSR and FP. This study was carried out for the Greece listed companies on the Athens Stock Exchange. He found a positive association between CSR and FP, and concluded that there is a positive and significant association between CSR and stock returns. The study by Thao Trang and Yekini (2010) found through the regression analyses a significant and positive association between CSR and FP. In addition they also found that the age of long term assets is highly correlated with CSR. The study was conducted in the Vietnamese listed companies. The difference between the studies is that different methods to investigate the relation between CSR and FP were used. Karagiorgos (2010) used the market-based measurement tool to measure FP. Another study is one of Ahamed et al. (2013) who did research on the association between CSR and CFP. They completed their study in Malaysia and noted a positive association between CSR and CFP. They used two control variables company size and company revenue for this research. The method of Nelling and Webb (2009) was the Granger causality and Tobit to control for firm fixed-effects over time and CSR causality for that part of the data that is known. One similarity is that most studies used the regression analysis. In this study companies CSR or sustainability reports based on the GRI guidelines are used to measure environmental and social disclosures, with the help of a Disclosure Index, and for FP the accounting-based and market-based measurement method is used. Hence, the regression analysis used by these studies is relevant for this thesis.

## 4.3 Integrated Reporting and Financial Performance

This paragraph discusses research on IR and FP. Because IR is a relatively new management practice and only a few companies have been practicing it for a few years, much research on this topic was hard to find. Dragu and Tiron-Tudor (2013a) examined the financial and non-financial disclosure in IR. The sample, 16 Asian-Pacific companies that participated in the IIRC pilot program. The study found a direct correlation between financial (ROE and ROA)

and non-financial (NFI) disclosure indices. They also conclude that it appears that there is either an indirect or no correlation between the metrics. Unfortunately no further findings were provided. In a study by Churet et al. research was performed in order to give answer if integrated reporting leads to better financial performance, partly through better ESC management, or vice versa. The return on invested capital (ROIC) was used as the measure of financial performance. The 10-year average ROIC was used. Sample: the sample IR companies were statistically indistinguishable from the broad sample. No evidence was found that IR practices correlated with companies achieving a higher ROIC. The sample was derived from the RobecoSAM[2] Corporate Sustainability Assessment (CSA) analyses which contained 2000 companies from all over the world. The analyses implied a systematic search for a number of specific indicators of IR in the 2011 and 2012 annual reports from publicly traded companies. The method; first, RobecoSAM looked for examples of environmental or social initiatives that led to either cost savings or new revenue streams. The following proxy for IR was used: management decisions to include, *in the main section of the AR,* specific examples of sustainability initiatives and how they impact financial performance. Second, the assessment was strictly confined to the main section of the AR, in most cases the Management Discussion Section (Churet et al., 2014). The analysis was repeated with using a five-year ROIC and a two-year ROIC average. Still, no evidence of a correlation was found. When the results were analyzed by sector, a positive relation was found between IR and FP for the healthcare and Information technology sector. According to Eccles et al., 2011, the explanation for a weak relation between the IR and FP is time lag. There is a significant time lag before better ESG performance result in superior FP since the benefits are not immediate. Secondly there is also a time lag between implementing IR and getting the benefit from it.

## 4.4 Critical analyses

In this paragraph a comparison of the differences, approaches, similarities and explanations of prior research discussed in previous paragraphs are made. In this part a critical analysis of NFI, in the form of CSR information, was easier to do. No critical analysis on information of IR was conducted.

[2] RobecoSAM is an investment specialist that focuses on sustainability investing. It offers a set of services including sustainability assessments and benchmarking services. Together with S&P Dow Jones Indices, RobecoSAM publishes the globally recognized Dow Jones Sustainability Indices (DJSI).

Nelling and Webb (2009) found no evidence that there is a relation between CSR and FP. They used three methods to come to this conclusion. Granger causality and the Tobit were used to control for firm fixed-effects over time and CSR causality for the part of the data that was known. Meanwhile the study of Karagiorgos (2010) found a positive and significant relation between CSR and FP. The companies CSR reports were measured according to the GRI guidelines. The FP was measured through the market-based method. Like Nelling and Webb, this study also used the regression analysis. Thao Trang and Yenkini (2010) also used the content analysis method to find the nexus between CSR and CFP. The control variables were size and risk. The findings: a modest relation between CSR and CFP among companies in Vietnam. The study also found relationship between the level of debt and CSR.

## 4.6 Summary

In this chapter previous studies were reviewed. Based on these studies the hypotheses of this thesis are formulated. Orlitzky et al. (2003), used a meta-analysis of 52 studies and found a positive correlation between CSP and CFP. Karagiorgos (2010) investigated the association between CSR and FP executed in Greece, he documented that there is positive association between CSR and FP, and also concluded that there is a positive and significant association between CSR and stock returns. A study by Nelling and Webb (2009) show the causal relation between CSR and FP and concluded that there is no association between CSR and FP. However, Thao Trang and Yekini (2010) found through the regression analyses a significant and positive association between CSR and FP. Dragu and Tudor (2013) and Churet et al (2014) gave a little contribution on the literature regarding IR. Dragu and Tiron-Tudor (2013a) examined the financial and non-financial disclosure in IR. The sample, 16 Asian-Pacific companies that participated in the IIRC pilot program. Results, a direct correlation between financial (EPS and ROA) and non-financial (NFI) disclosure indices was found. Churet et al (2014) gave mixed results.

# Chapter 5 Hypotheses development and Research design

## 5.1 Introduction

This chapter presents the hypotheses of this research. The hypotheses are formulated based on previous studies reviewed in the preceding chapter. This chapter also provides the methodology used. The second paragraph discusses the variables of interest and the control variables used in this research. In paragraph three the sample selection procedure and the sample period are presented. Paragraph four presents the hypotheses as well as the formulated regression models to test the hypotheses. The Libby boxes are presented after the hypotheses and the last paragraph closes the chapter with a summary.

## 5.2 Variables of interest and control variables

In this paragraph the variables of interest are discussed. The variables of interest are the financial performance (FP) of a company namely the ratios of return on asset (ROA) and the earnings per share (EPS), these represent the financial information in the study. Secondly the non-financial information (NFI) presented by the social and environmental performance, and lastly integrated annual reports (IAR). The IR will be measured as a dummy variable, taking the value of 1 if the company has an IAR and 0 if other. The content analysis technique will be used to measure environmental and social performance, and thereafter SPSS data processing.

### Dependent variable

As in some previous studies, the dependent variable is financial performance. FP is measured through the ROA of the company (accounting-based measurement) and the EPS (market-based measurement). In this thesis the initial companies that participated in the IIRC pilot program as the “first” adopters of an integrated report, were sampled.

### Independent variables

The first independent variable is IR, a dummy variable, meaning 1 if the company integrates his financial and non-financial information and 0 if not. The second independent variable is non-financial information (measureable data), sustainability reports or CSR reports in accordance with the Global Reporting Initiative guidelines, GRI G3.1 and G4 were used. The Environmental and Social performance of the reporting companies were measured.

## Control variables

In this research control variables were used in order to avoid biased results, as these variables may have effect on the variables of interest in this research. The most used control variables in prior research regarding FP and NFI are firm size, risk and industry. Studies regarding sustainability and CSR frequently use industry type as a control variable. Each organization has its own core and each attract more or less attention from their stakeholders. Therefore some pay more attention to CSR activities than others from other organizational types. Size is defined by Waddock and Graves (1997) as *a variable of great importance since the socially responsible behavior that is being disclosed by the larger firms tend to be more than those disclosed by smaller the firms"*. Smaller companies are less likely to use CSR reports or implement CSR activities. It is easier for larger companies to implement CSR strategies faster because of their financial baggage and the increasing interest from stakeholders. Previous research (Waddock & Graves 1997; Aras et al. 2010) used different measurements for firm size. Risk is also one of the most used control variables in the previous research (McGuire et al. 1988; Waddock & Graves 1997; Aras et al. 2010).

- **Company size**; termed respectively Size (logarithm of total assets). With respect to company size, larger firms use other corporate characteristics that differentiate them from smaller ones, for example, a more diverse range of products, more complex distribution networks and a more extensive use of capital markets for financing and higher visibility. These aspects are import for the quantity and quality of information disclosed for the purposes of interaction with different stakeholders. Company size is analyzed as an influential factor on integrated reporting preferences of companies. It is generally supported in the studies that as the company size increases; tendency to disclose information also increases (Gul and Leung, 2004). Total asset is used as a proxy for firm size.
- **Risk;** risk is like size one of the most used control variables in scientific research (McGuire et al. 1988; Waddock & Graves 1997; Aras et al. 2010). To control for the financial risk of the pilot companies used in this study, total debt divided by total assets will be used as a proxy to measure risk.
- **Growth opportunities;** Mtb (ratio of market to book value of equity). It is to be expected that companies with higher Mtb values will disclose greater volumes of

information in order to reduce problems of information asymmetry (Prado-Lorenzo and Garcia-Sanchez, 2010)

## 5.3 Sample selection and sample period

The initial sample consists of the 44 companies which/who (October 2011) participated in the IIRC pilot program. The first 44 companies that enrolled for the program are chosen as the sample. The pilot program started September 2011 and came to an end in September 2014. After September 2011 more companies joined the program. To avoid the change that companies that enrolled after 2011 did not have an integrated report ready by 2012, these companies were not taken in the sample of this research. Annual reports from 2012 and 2013 of the companies were chosen for the analysis of this research. This period and these report years were chosen because there was a bigger change of finding an Integrated Report which contains environmental and social disclosures compliant to the GRI guidelines needed for the analysis of this research. The following table (table 1) represents the final sample of pilot companies that started at 25 October 2011

Table 1 Final Sample

| | **Firms** |
|---|---|
| **Initial sample** | **44** |
| **Less:** | |
| **No data/ company code found** | 12 |
| **No World scope data available** | 9 |
| **No GRI data found of 2011 or 2013** | 6 |
| **Final sample** | **17 (34 observation Years)** |

## Data collection

This thesis takes a qualitative and quantitative approach relying on measureable data from Annual reports, which will be the basis for statistical analysis. The main source for gathering quantitative information is through annual reports from the companies' webpages. The interpretation of what information companies disclose, regarding integrated reporting, was received through constructed index of the GRI G3 and G4. The index describes an explicit description and definition of how the term integrated reporting is defined. The index is built on categorical data, which has been transformed into numerical data. The analysis of the data was supported with the excel program.

The selected index (GRI G3 & G4) and indicators give great possibility of disclosure. The selected items of environmental and social correlate with this thesis' chosen sample. King III refers to the guidelines of GRI when conducting an annual integrated report (King III, 2009), which is why the index of this thesis is derived from the GRI's G3.1 and G4 principles.

The disclosure of the information regarding integrated reporting differ between the companies, since the placement of information are not uniform. The information within the integrated annual reports has been found in the section regarding sustainability.

## 5.4 Hypotheses

The hypotheses of this research are presented in this paragraph, as are the regression model used to test the hypotheses. In the previous chapter it became clear that it not clear according to previous research what the precise relation between NFI and FP is. Some studies found a positive association (McGuire, et al. 1988; Orlitzky et al. 2003; Waddock et al. 1997; Ahamed et al. 2013) while others found a negative relation between NFI and FP (Moore, 2001). In other cases a neutral relation between was found (McWilliams and Siegel, 2000; Nelling and Webb 2009). In this study a positive relation between NFI and FP is expected. While for the relation between IR and FP no relation is expected. Based on the results of previous studies the following hypotheses for his study are formulated:

*Hypothesis*

**$H_0$: "**Integrated Reporting and non-financial information have a positive effect on Financial Performance for the initial pilot companies of the IIRC".

**$H_1$: "**Integrated Reporting and non-financial information have no positive effect on Financial Performance for the initial pilot companies of the IIRC".

**Main regression model**

$$FP_{it} = \alpha_0 + \alpha_1 IR_{it} + \alpha_2 NFI_{it} + \alpha_3 Size_{it} + \alpha_5 RISK_{it} + \alpha_4 Mtb_{it} + \varepsilon_{it}$$

**Accounting-based method:** $$ROA_{it} = \alpha_0 + \alpha_1 IR_{it} + \alpha_2 NFI_{it} + \alpha_3 Size_{it} + \alpha_5 RISK_{it} + \alpha_5 Mtb_{it} + \varepsilon_{it}$$

**Market-based method:** $$EPS_{it} = \alpha_0 + \alpha_1 IR_{it} + \alpha_2 NFI_{it} + \alpha_3 Size_{it} + \alpha_5 RISK_{it} + \alpha_5 Mtb_{it} + \varepsilon_{it}$$

Where: $FP_{it}$= Financial Performance measured by the ROA and EPS of a company i in year t; $IR_{it}$= integrated report of country i in year t as a dummy variable, taking the value 1 if the company has a IR and 0 if other; NFI= representing the non-financial information, measured

by the Environmental- and Social Disclosure Index defined by the GRI G3&4 guidelines, using the following equation: **$DI_{IR}$= Σ($d_i$ effectively disclosed)/ Σ($d_i$ all possible cases of disclosure)**; $SIZE_{it}$ = firm size, proxied by log of total assets of company i at time t; $RISK_{it}$= Total debt divided by total assets; $Mtb_{it}$= comparing the book value (historical cost) of company i with its market value (stock market) at time t; $\varepsilon_{it}$= residual term

### Disclosure Index NFI

The King III refers to the guidelines of the GRI when conducting an integrated report (King III, 2009), explaining why the index for the NFI of this thesis is derived from the GRI's G3, G4 principles. The index was assembled from the G4 and GRI G3.1 "Update-comparison sheet", where the items under environmental and social aspects have been covered, so for this thesis the environmental and social aspects cover the non-financial information.

In order to test the compliance with GRI G3.1, the social and environmental performance indicators disclosed in the CSR, sustainability or IR reports were identified and analyzed. The following codifications were used for disclosures on the environmental and social aspects in these reports: "0.5" for partial reporting and "1" for full disclosure and "0" for no disclosure. Thereafter the disclosure index for the social and environmental data has been computed according to the formula stated below:

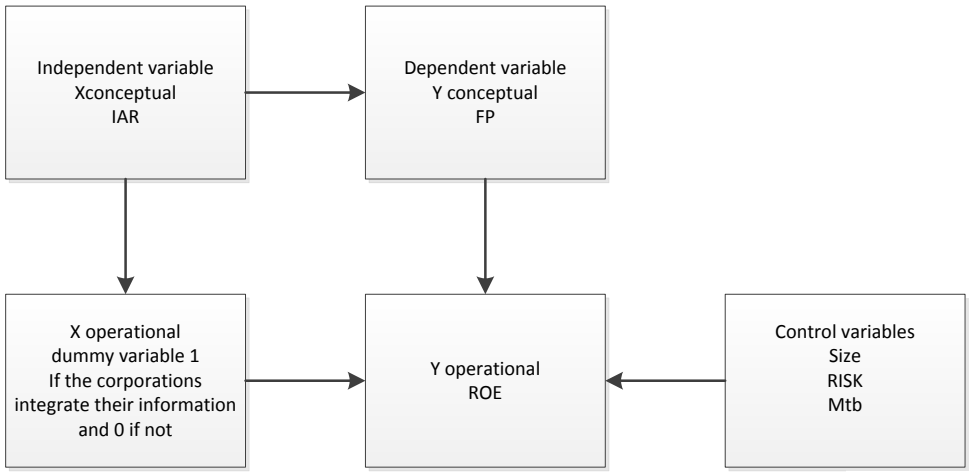
**$DI_{IR}$= Σ($d_i$ effectively disclosed)/ Σ($d_i$ all possible cases of disclosure)**

### Libby boxes

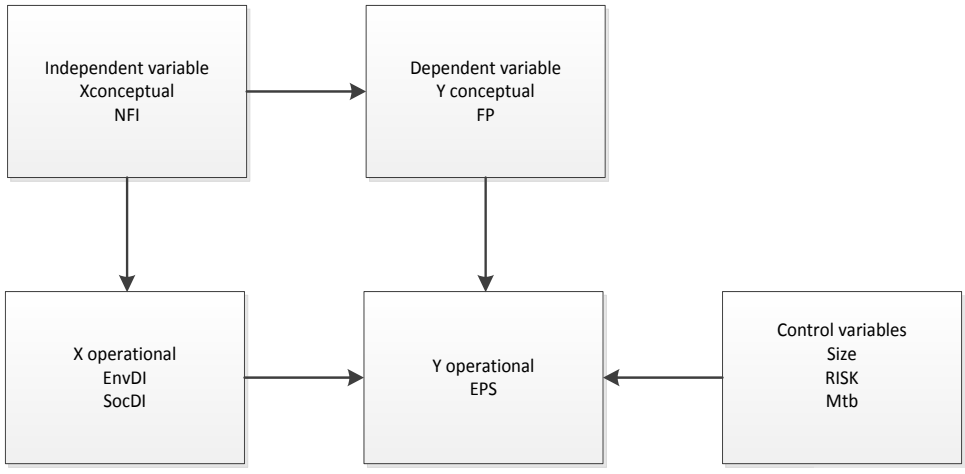
This is also known as the predictive validity framework, Libby (1981). This framework captures the researcher's concept and illustrates the research process. The link between the variables are being made and the construct is being clarified, the internal and external validity between these variables (Maas, 2011). For the first and second libby box, the first arrow gives an reflection of the theoretical support for the forecasted effect of IAR and NFI on FP. The second and third arrow gives a reflection of the measurements of IAR, NFI and FP and gives the construct validity. IAR is operationalized by the dummy variable, taking the value 1 if the corporations integrate their financial and non-financial information and 0 if not. The non-financial information is measured by the disclosure index score of environmental and social disclosures. The FP is operationalized by the ROA, as an accounting-based measurement method and the EPS as a market-based measurement

method. The last arrow coming from the last box with the arrow in opposite direction reflects the effect of other factors (control variables) on the outcome of FP. These control variables can increase the internal validity of this study. This is possible; because higher internal validity results in a better association between the independent variables and FP.

### Libby box for hypothesis 1:




### Libby box for hypothesis 2:




### Validity

According to Smith, 2003, "validity measures the degree to which our research achieves what it sets out to do." The information regarding the data collection must be made accurately in

order to answer the research question. The variables in the regression models are depicted in the Libby boxes above. The accountability regarding the financial information and non-financial variables are ensured, since they were derived directly from the companies' reports.

Validity can be distinguished as three types, internal-, external- and construct validity. The internal validity is a little bit harder to define. The internal validity refers to how well the study captures a causal effect between the operationalized dependent variable and independent variable (Maas, 2011). The internal validity of this study is high because the use of the three control variables increases the internal validity. The external validity of this study is low, because this study focuses consequently on the IIRC pilot companies. The results cannot be generalized to other population outside the pilot. The external validity is to generalize the results of the sample population; it refers to the extent that the results, based on the sample can be generalized to the general population. The general population in this case are the total of companies participated in the IIRC pilot project. The construct validity refers to the extent to which a measurement captures the construct that it supposes to measure. A high construct validity means that the abstract idea was better measured (Maas, 2011). The primary characteristics of this research have inter alia been to determine if IR and non-financial information influence the FP. The sample of this research is low, which implies that the result has to be valid and reliable. Finally, the construct validity is high in this study according to the used operationalized measurements for the dependent variable and independent variable. The ROA and EPS capture the FP of the pilot companies. The environmental- and social disclosure score captures the NFI performance of the pilot companies.

## 5.5 Summary

In this chapter the variables of interest, the control variables, sample selection, hypotheses development, the regression model and libby boxes used in this research were discussed. The variables of interest and the control variables used in this research were discussed in the second paragraph. The variables of interest are FP, IAR, and NFI. Firm Size, RISK, firm growth (Mtb) were added as control variables, as they may have an effect on FP, namely EPS and ROA. Paragraph three discusses the sample procedure used in this research. The sample consists of the 44 initial companies that have participated in the IIRC pilot programme. After elimination of some companies because the lack of data, 17 companies remained. The IIRC

initial sample period was from September 2011 until September 2014 (3 years). The sample period for this research was 2012 and 2013. The next chapter provides the results of the study.

# Chapter 6 Results and Analyses

## 6.1 Introduction

This chapter provides the results and analyses of the hypotheses tested. The regression results, namely the descriptive statistics are presented in paragraph 6.2, where sub paragraph 6.3 discusses the Pearson correlation and the multivariate regression is presented in paragraph 6.4. The results are further analyzed in the paragraph 6.5. Paragraph 6.6 closes with a summary regarding the overall conclusions of the results.

## 6.2 Results descriptive statistics

Table 2 and 3 represent the descriptive statistics of this research. The tables provide a statistical overview of the dependent, independent, and control variables used in this research. The sample size for the main test is 34 firm-year observations. The mean of ROA is 3.90. The EPS as in table 3 has a mean of 21.29. The IAR has a mean of 0.059 . The NFI has a mean of 0.57. Further firm size has a mean of 7.94, RISK shows a result of 0.253, and Mtb has a mean of 2.70. Furthermore, the output presents standard deviations regarding all variables.

Table 2 descriptive statistics ROA before winsorizing

| Descriptive Statistics | | | | | |
|---|---|---|---|---|---|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| ROA | 34 | -10.31 | 21.21 | 3.9021 | 5.62537 |
| IAR | 34 | .0 | 1.0 | .059 | .2388 |
| NFI | 34 | .18 | .95 | .5726 | .18019 |
| SIZE | 34 | 6.14510 | 9.59721 | 7.94436 | .95263 |
| RISK | 34 | .0 | .5 | .253 | .1354 |
| Mtb | 34 | .31000 | 22.07000 | 2.70029 | 4.15997 |
| Valid N | 34 | | | | |

Table 3 descriptive statistic EPS before winsorizing

| Descriptive Statistics | | | | | |
|---|---|---|---|---|---|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| EPS | 34 | .00 | 303.17 | 21.2982 | 56.07696 |
| IAR | 34 | .0 | 1.0 | .059 | .2388 |
| NFI | 34 | .18 | .95 | .5726 | .18019 |
| SIZE | 34 | 6.14510 | 9.59721 | 7.94436 | .952631 |
| RISK | 34 | .0 | .5 | .253 | .1354 |
| Mtb | 34 | .31000 | 22.07000 | 2.70029 | 4.15997 |
| Valid N | 34 | | | | |

**Test of normality**

The normality of the distributions of ROA and EPS was also checked. Two histograms representing both, ROA and EPS, show an non-normal distribution and also reveal the outliers for the ROA and EPS. The outputs of the Kolmogorov-Smirnov and the Shapiro-Wilk tests in appendix 4 and 5, present a significance level of respectively 0.013 and 0.000. These are lower than 0.05 and thus indicate a non-normal distribution of the sample. The two box plots for both ratios are also in the appendices 4 and 5 and give a better picture of the outliers. An outlier is defined as an observation that is very different from most of the other observations (Field, 2009). To solve the problem of outliers, the outliers are winsorized by using the mean of 3.90 for ROA and 21.29 for EPS. The winsorized ROA and winsorized EPS are approximately normal distributed. The winsorized ROA and winsorized EPS are used for further analysis in this study. The following paragraph discusses the correlation test and presents other SPSS output.

## 6.3 Correlation

In this paragraph the correlation of the variables is presented and analyzed. The correlation is nothing else but the strength of the relation between one variable on the other. Table 4 and 5 present the Bivariate Pearson correlations between the variables of the regression model. The correlation values in the table are significant at the 1% and 5% level. In table 4 we can notice that the Pearson correlation between the ROA and IAR of the pilot companies is negatively correlated (-0.278) and is not significant (p-value= 0.112). The correlation between ROA and NFI is positive 0.218 and also not significant (p-value= 0.215). The control variable Size is negatively (-0.419) correlated with the ROA but significant (p-value= 0.014), whereas RISK and Mtb are positively correlated, 0.175 and 0.687 and the p-value for RISK is not significant (p-value= 0.322) and for the Mtb is very significant (p-value= 0.000). For the second correlation using EPS as dependent variable the EPS is negatively correlated (-0.090) to IAR and also not significant. The same goes for the relation between EPS, NFI, RISK and Mtb. These results are respectively -0.486, -0.212 and -0.096. The correlation between the EPS and Size is positive 0.417 and significant (p-value= 0.014). Noteworthy is also that the p-value of the NFI is 0.004, meaning significant.

Table 4 Pearson correlation for ROA

| Correlations | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | ROA | IAR | NFI | SIZE | RISK | Mtb |
| ROA | Pearson Correlation | 1 | -.278 | .218 | -.419* | .175 | .687** |
| | Sig. (2-tailed) | | .112 | .215 | .014 | .322 | .000 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| IAR | Pearson Correlation | -.278 | 1 | -.004 | -.197 | -.025 | -.061 |
| | Sig. (2-tailed) | .112 | | .983 | .264 | .887 | .732 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| NFI | Pearson Correlation | .218 | -.004 | 1 | -.140 | .509** | .361* |
| | Sig. (2-tailed) | .215 | .983 | | .430 | .002 | .036 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| SIZE | Pearson Correlation | -.419* | -.197 | -.140 | 1 | .010 | -.493** |
| | Sig. (2-tailed) | .014 | .264 | .430 | | .956 | .003 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| RISK | Pearson Correlation | .175 | -.025 | .509** | .010 | 1 | .253 |
| | Sig. (2-tailed) | .322 | .887 | .002 | .956 | | .149 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| Mtb | Pearson Correlation | .687** | -.061 | .361* | -.493** | .253 | 1 |
| | Sig. (2-tailed) | .000 | .732 | .036 | .003 | .149 | |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5 Pearson correlation for EPS

| Correlations | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | EPS | IAR | NFI | SIZE | RISK | Mtb |
| EPS | Pearson Correlation | 1 | -.090 | -.486** | .417* | -.212 | -.096 |
| | Sig. (2-tailed) | | .613 | .004 | .014 | .230 | .591 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| IAR | Pearson Correlation | -.090 | 1 | -.004 | -.197 | -.025 | -.061 |
| | Sig. (2-tailed) | .613 | | .983 | .264 | .887 | .732 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| NFI | Pearson Correlation | -.486** | -.004 | 1 | -.140 | .509** | .361* |
| | Sig. (2-tailed) | .004 | .983 | | .430 | .002 | .036 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| SIZE | Pearson Correlation | .417* | -.197 | -.140 | 1 | .010 | -.493** |
| | Sig. (2-tailed) | .014 | .264 | .430 | | .956 | .003 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| RISK | Pearson Correlation | -.212 | -.025 | .509** | .010 | 1 | .253 |
| | Sig. (2-tailed) | .230 | .887 | .002 | .956 | | .149 |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |
| Mtb | Pearson Correlation | -.096 | -.061 | .361* | -.493** | .253 | 1 |
| | Sig. (2-tailed) | .591 | .732 | .036 | .003 | .149 | |
| | N | 34 | 34 | 34 | 34 | 34 | 34 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

## 6.4 Multivariate regression ROA and EPS results

The multivariate equations will be regressed in order to test the developed hypothesis. The regression equation has two independent variables, IAR and NFI, further it has the three control variables, Size, RISK and Mtb. The dependent variable for the first regression is ROA. The value of R (0.570) shows the multiple correlation between the predictor and the outcome. The $R^2$ shows that 32.5% of the ROA is explained by the independent variables. The ANOVA table shows that the F-ratio is 2.409. This model is not significant, because p>0.05, it is 0.065>0.05. The intercept $B_0$ for this model is 8.733. The regression first coefficient, IAR, is positive 1.511 and the second regression coefficient is negative, -1.140. The control variable RISK and Mtb have a positive association with the ROA. Size has a negative association with ROA. Further we see that none of the associations are significant the p-values are all > than 0.05.

**Table 6**

| Variables Entered/Removed[a] | | | |
|---|---|---|---|
| Model | Variables Entered | Variables Removed | Method |
| 1 | Mtb, IAR, NFI, RISK, SIZE[b] | . | Enter |

a. Dependent Variable: ROA
b. All requested variables entered.

**Table 7**

| Model Summary[b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .570[a] | .325 | .190 | 3.21674 | .325 | 2.409 | 5 | 25 | .065 |

a. Predictors: (Constant), Mtb, IAR, NFI, RISK, SIZE
b. Dependent Variable: ROA

**Table 8**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 124.648 | 5 | 24.930 | 2.409 | .065[b] |
| | Residual | 258.686 | 25 | 10.347 | | |
| | Total | 383.334 | 30 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Mtb, IAR, NFI, RISK, SIZE

**Table 9**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 8.733 | 7.770 | | 1.124 | .272 |
| | IAR | 1.511 | 3.334 | .076 | .453 | .654 |
| | NFI | -1.140 | 3.833 | -.054 | -.297 | .769 |
| | SIZE | -.801 | .823 | -.210 | -.972 | .340 |
| | RISK | .435 | 5.113 | .016 | .085 | .933 |
| | Mtb | .876 | .482 | .399 | 1.818 | .081 |

a. Dependent Variable: ROA

The same equitation is used for the second regression but now with a different dependent variable, EPS, the two independent variables, IAR and NFI and three control variables, Size, RISK and Mtb. The value of R 0.578 shows the multiple correlations between the predictors and the outcome. The value of $R^2$ , 0.335 shows that 33.5% of the EPS is explained by the independent variables. The table of ANOVA shows that for the model the F-ratio is 2.212. This model is like the first not significant because p>0.05. The intercept $B_0$ is 16.237 and the regression coefficient for IAR is -3.665 meaning that the direction of the association is negative and for NFI it is -15.804 negative. The control variables RISK and Mtb are positively correlated with the EPS. Unfortunately they are not significant in the model because their p-value>0.05. Size is positive correlated and not significant. The NFI is significant in this model showing a p-value of 0.011.

**Table 10**

| Variables Entered/Removed[a] | | | |
|---|---|---|---|
| Model | Variables Entered | Variables Removed | Method |
| 1 | Mtb, IAR, RISK, NFI, SIZE[b] | . | Enter |

a. Dependent Variable: EPS
b. All requested variables entered.

Table 11

| Model Summary[b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .578[a] | .335 | .183 | 3.83787 | .335 | 2.212 | 5 | 22 | .090 |

a. Predictors: (Constant), Mtb, IAR, RISK, NFI, SIZE
b. Dependent Variable: EPS

Table 12

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 162.875 | 5 | 32.575 | 2.212 | .090[b] |
| | Residual | 324.044 | 22 | 14.729 | | |
| | Total | 486.919 | 27 | | | |

a. Dependent Variable: EPS
b. Predictors: (Constant), Mtb, IAR, RISK, NFI, SIZE

Table 13

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 16.237 | 10.061 | | 1.614 | .121 |
| | IAR | -3.665 | 2.999 | -.226 | -1.222 | .235 |
| | NFI | -15.804 | 5.700 | -.603 | -2.773 | .011 |
| | SIZE | -.590 | 1.393 | -.115 | -.423 | .676 |
| | RISK | 7.677 | 6.530 | .253 | 1.176 | .252 |
| | Mtb | .146 | .255 | .156 | .572 | .573 |

a. Dependent Variable: EPS

In the next paragraph a robustness check will be done.

## 6.5 Robustness check for ROA and EPS

Because two methods were used a robustness check must be done in order to know which model is better. When conducting a robustness check, the variables that are not significant are removed from the regression. In this case all the variables are not significant except for the NFI, one of the main independent variables. Noteworthy to mention is that most variables were significant before winsorizing. So the variables removed for the robustness check were not significant at all or not even close. Again an SPSS output is generated. In the appendixes 7 the results for the first method, the accounting-based method using ROA as dependent variable, is visually presented. As we can see, the value of R is 0.727, the value of the $R^2$ is now 0.528. In the ANOVA table the value of the F-ratio is 11.180. In the appendixes 8 the results for the second method, using EPS as the dependent variable show the following results: for the value of R was found 0.667, $R^2$ 0.445 and the F-ratio is 5.822. All results increased regarding this check. In both cases the F-ratio increased. After the robustness check both models became significant, p-values>0.05.

## The Analyses

In this part the findings of previous paragraphs will be analyzed. The results with the developed hypothesis will be analyzed. Further on the analysis in relation with prior researches will be presented. Finally, a summary paragraph is included.

According to the multiple regression results in paragraph 6.4 the outcome of the model presents that the direction of the association between the FP, IAR, NFI and control variables. The developed hypotheses for the analysis are presented once again:

***$H_0$: "****Integrated Reporting and non-financial information have an positive effect on Financial Performance for the initial pilot companies of the IIRC".*

***$H_1$: "****Integrated Reporting and non-financial information have no positive effect on Financial Performance for the initial pilot companies of the IIRC".*

Hypotheses $H_0$ is concerned about a positive association between the disclosure of an IAR, and NFI on FP using the accounting- and market-based method.

$$\mathbf{FP_{it} = \alpha_0 + \alpha_1 IR_{it} + \alpha_2 NFI_{it} + \alpha_3 Size_{it} + \alpha_5 RISK_{it} + \alpha_4 Mtb_{it} + \varepsilon_{it}}$$

Acc.-based -> $ROA_{it} = 8.733 + 1.511IR_{it} - 1.140NFI_{it} - 0.801Size_{it} + 0.435RISK_{it} + 0.876Mtb_{it}$

Market-based -> $EPS_{it} = 16.237 - 3.665IR_{it} - 15.804NFI_{it} - 0.590Size_{it} + 7.677RISK_{it} + 0.146Mtb_{it}$

The independent variable IAR reports a non-significant positive relation (1.511) with ROA. The second independent variable NFI reports a non-significant negative relation (-1.140) with ROA. Both p-values are >0.05

For the first control variable SIZE a negative relation (-0.801) between the firm size and ROA is found, suggesting that the smaller the firm, the higher the ROA ratio of the firm will be. RISK has a positive relation (0.435) between the firms' risk and ROA ratio. This indicates hat the higher the RISK ratio, the higher the ROA ratio will be. The control variable Mtb, indicating firm growth, reports a positive relation (0.876) between the firm growth and ROA, implying the higher the firm growth, the higher the ROA ratio. Al p-values for the control variables are >0.05.

Analyzing the market-based method the following results were found;

The independent variable IAR reports a negative and non-significant relation with the dependent variable, EPS. While for the second independent variable NFI the relation is negative but significant. The control variables RISK and Mtb have a positive relation with EPS, while SIZE found a negative relation. For all control variables the p-value is > 0.05.

For the first method the adjusted $R^2$ is 0.190, meaning that 19% of the independent variable explain the dependent variable ROA. The value of the adjusted $R^2$ must be between 0 and 1.

If too close to 0 the explanatory power is to low and too close to 1 means that the explanatory power is high. The F-value is 2.409 and a significance level of 0.065 For the second method the adjusted $R^2$ is 0.183, meaning that the EPS is being explained by 18.3% of the independent variables. The F-value is 2.212 and the significance level is 0.090.

So, for the first method the results are mixed, in this case only IAR has a positive effect on the FP using the accounting-based method. $H_1$ will be accepted. In the case of the market-based method both, IAR and NFI have a negative effect. The $H_1$ will be accepted for the market-based method.

| **Hypothesis** | **Accounting-based** | **Market-based** | **Accept/Reject** |
|---|---|---|---|
| **$H_0$: "**Integrated Reporting and non-financial information have a positive effect on Financial Performance for the initial pilot companies of the IIRC". | X | X | Reject<br>Reject |
| **$H_1$: "**Integrated Reporting and non-financial information have a negative effect on Financial Performance for the initial pilot companies of the IIRC". | X | X | Accept<br>Accept |

This means that for the initial corporations of the IIRC participating in the pilot there is a overall negative association between IAR, NFI and FP.

From the robustness check the conclusion can be drawn that the accounting-based method is better to use. The $R^2$ is 52.8%, while the $R^2$ in the market-based model is 44.5%. this value indicates that the model better predicts the association between the dependent and independent variable. Both models are significant, p-value <0.05. The F-ratio of the first method is also higher than of the second. The answer to the research question is that the

effect of the relation between IAR, NFI and FP is negative. In the accounting-based method the IAR has a positive effect.

### The contribution

This research provides evidence regarding the association between FP, IAR, NFI and corporations that participated in IIRC pilot program and contributes to the literature regarding this topic. This study may trigger further research on this topic. No further results where disclosed by the IIRC regarding the pilot group. The outcome regarding the association between FP, IAR, NFI of this research can be added to the group of previous studies. A study by McGuire et al. (1988) shows that the accounting-based method, using ROA, can predict CSR better than the market-based method. Waddock and Graves (1997) found a positive association between CSR and FP using the Accounting-based method with ROA as measurement. The study of Aras et al. 2010 reported no association between CSR and FP using the accounting-based method.

## 6.6 Summary

This chapter describes the findings of this research and answered sub question five. First, the descriptive statistics are introduced including the total observations, mean, median, and standard deviation. Further, the bivariate correlation between the variables is determined by the Pearson correlation. Next, the results of the multivariate regression are showed. All these tests are performed using SPSS. Further the analysis of the results is presented. The null hypotheses for both models are rejected.

# Chapter 7 Conclusions

## 7.1 Introduction

This research focuses on the relation between FP, IAR and NFI of the first companies participated in the IIRC pilot program. In the previous chapter the results and analyses of the hypotheses were presented. This chapter provides the conclusions to this research, limitations and suggestions for further research. Paragraph 7.2 discusses the conclusions of this research. The limitations and suggestions are summed up in paragraph 7.3.

## 7.2 Conclusions

The purpose of this study was to investigate if there is an effect of IAR and NFI on the FP for the first companies participated in the IIRC pilot program. The research question of this thesis is stated once again:

**"What is the effect of integrated reporting when including non-financial information to traditional information on the financial performance of the first pilot companies of the IIRC?"**

In order to answer this question, six sub questions were formulated. The answer to the effect between FP, IAR and NFI of the first pilot companies of the IIRC is provided based on the results of the hypotheses formulated in previous chapter. Recall the hypotheses:

***$H_0$:*** *"Integrated Reporting and non-financial information have a positive effect on Financial Performance for the initial pilot companies of the IIRC".*

***$H_1$:*** *"Integrated Reporting and non-financial information have no positive effect on Financial Performance for the initial pilot companies of the IIRC".*

The sub questions: The first sub question tries to find the background information of Integrated Reporting. It describes the definitions of IR, how, why and where it all started. The second sub question gives answer on the importance of IR, what are the benefits to present financial and non-financial information in an integrated manner. Disclosing non-financial and financial information of a company in an integrated manner can reduce the information-asymmetry that exists between managers and stakeholders. Providing more information to investors, cost of capital can be lowered, which will benefit the company. These are just two of the many benefits of integrating financial and non-financial information. The fourth sub question wonders if publishing non-financial information have

an impact on firm's financial performance. The answer is a simple yes. The last sub question is about the focus of prior research regarding the topic. There was more prior research available on NFI (CSR information) on FP than information available of IR on FP. The topic on IR is new so it wasn't easy to find prior research regarding the relation of IR on FP.

The results of the hypotheses tested were discussed in the previous chapter. Regarding the hypothesis, the results indicate that there is a negative non-significant relation of IAR, NFI on the FP when using the accounting based method. The null hypotheses ($H_o$) is being rejected and the alternative hypotheses for the accounting-based method is accepted.
As for the market-based method, the regression result do not indicate a significant relation between the IAR, NFI and FP. Noteworthy is that for the second method, the second independent variable, NFI is significant but not positively related. The p-value is 0.011 ($p<0.05$).
Recall, the sample contains the first companies who participated in the IIRC pilot program. The total of 44 companies came down to a total of 17 companies in the sample. The sample period was 2012 and 2013. Further, the outcome is regressed by the multivariate regression. The findings provide any evidence on the effect on IR, NFI and FP therefore suggest that for the pilot companies participating in the IIRC pilot program, there is a no positive relation between FP, NFI and IAR. Further the findings also suggest that there is a negative relation between NFI and FP and that this relation is significant.

## 7.3 Research limitations

This study has some limitations. The first limitation of this study is the sample size of the pilot companies. As mentioned through this document, the first group of companies who had voluntary participated for this pilot where chosen. The initial group consisted of 44 companies. Between the pilot years, 2011-2014, and after this period much more companies voluntarily joined the idea to report in an integrated manner. After elimination of some companies, because no data was available, the sample was decreased to only 17 companies. The second limitation could be the measurement method used for the variables. As mentioned in chapter 4, to measure FP the ROA as an accounting-based method was used and the EPS was used as a market-based method. For the NFI the GRI reports of the pilot companies were used. The environmental and social aspects of the GRI G3 and G4 were analyzed. A formula, $DI_{IR}= \Sigma(d_i$ effectively

disclosed)/ $\Sigma(d_i$ all possible cases of disclosure) was used to quantify the qualitative data. Other measurement indicators could result in different results for the impact of IR, NFI and FP. Not all measurement models as mentioned by previous researchers are included in the measurement model. The final limitation is that the results of this research cannot be generalized to the population of interest. The external validity is low.

## 7.4 Suggestions for further research

This paragraph describes the suggestions for further research. Many suggestions for future research on this topic can be summed. To start, the first one would be to use a larger sample of the IIRC pilot companies or use other companies, not specifically the IIRC pilot companies, as the sample. Secondly by using other measurement methods for the variables used; for example another measurement method to measure NFI. Another suggestion for future research is to have more information channels. Because this subject is new it was difficult to write much about, but still interesting. Future research must also consider the different types of variables and the independence of the data values to generalize the conclusions based on the sample to a wider population of interest.

# References


- Azcarate, F., Carrasco, F., & Fernandez, M. (2011). The role of integrated indicators in exhibiting business contribution to sustainable development: A survey of sustainability reporting initiatives.
- Berg, N. and Jensen, C.J., 2012. Determinants of Traditional Sustainability Reporting Versus Integrated Reporting. An Institutionalist Approach, Business Strategy and the Environment 21, pp.299-316
- Bustamente, S. (2011). Localization vs. Standardization: Global approaches to CSR management in multinational companies.
- de Leo, F. & Vollbracht, M. CSR Index 2011.
- Deegan, C. & Unerman, J. (2006). Financial Accounting Theory, European edition.
- Deegan, C., & Unerman, J. (2008). Financial Accounting Theory, McGraw-Hill Education.
- Deegan, C. (2009). *Financial Accounting Theory.* Australia: Paula Harris.
- Doupnik, T.S., & Salter, S.B. (1995). External environment, culture, and accounting practice: A preliminary test of a general model of international accounting development. The International Journal of Accounting, 30 (3), 189-202.
- Eccles, R. & Kruz, M.P. (2010). One report- Integrated Reporting for a sustainable society.
- Eccles, R. & Saltzman, D., 2011. "Achieving Sustainability Through Integrated Reporting", Stanford Social Innovation Review
- Eccles, R. & Serafeim, G., 2014. "Corporate and Integrated Reporting: A functional perspective".
- Elkington, J. (1994). "Towards the suitable corporation: win-win-win business strategies for sustainable development," California Management Review, Vol. 36, No.2, pp. 90-100.
- Frias-Aceituno, J.V., Rodriquez-Ariza, LL., & Garcia-Sanchez, I. M. (2012). The role of the board in the dissemination of integrated corporate social reporting.
- Gonzales Estaban, E. (2007). La Teoria de los stakeholders.
- Gray, R., Owen, D., & Adams, C. (1996). Accounting & accountability: changes and challenges in corporate social and environmental reporting. London: Prentice-Hall.

- Gray, S. J. (1998). Towards a theory of cultural influence on the development of accounting systems internationally.
- Guthrie, J., & Parker, L. D. (1990). Corporate social disclosure practice: A comparative international analysis. Advances in public interest accounting 3, 159-175.
- Heal, G. (2005). Corporate social responsibility: an economic and financial framework.
- Healy, P.M., Palepu, K.G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature, *Journal of Accounting and Economics,* Vol. 31 (1-3), pp. 405 – 440.
- Hess, D. (2008). The three pillars of corporate social reporting as new governance regulation: Disclosure, dialogue and development.
- Hofstede, G. H. (1983). The cultural relativity of organizational practices and theories
- Hofstede, G. H. (2001). Culture's consequences, comparing values, behaviors, institutions, and organizations across nations.
- Hopwood, A., Unerman, J., Fries, J. (2010). Accounting for sustainability: practical insights.
- IIRC.(2011).Towards Integrated Reporting. Communicating Value in the 21st Century
- Karagiorgos, T. (2010). Corporate Social Responsibility and Financial Performance: An Empirical Analysis on Greek Companies. *European Research Studies*, Volume XIII, Issue (4), 2010.
- Kolk A. & Perego P. (2010). Determinants of the adoption of sustainability assurance statements: an international investigation. Business strategy and the environment 19, 182-198.
- Kosovic, K. & Patel, P. (2013). Integrated Reporting- Is it value relevant? A quantitative study on Johannesburg Stock Exchange.
- KPMG. (2011). "Integrated Reporting Performance: insight through Better Business Reporting, Issue".
- Lundgren, T. (2007). On the economics of corporate social responsibility. Working paper.

- Meek, G.K., Roberts, C.B., and Gray, S.J. (1995). Factors Influencing Voluntary Annual Report Disclosures by U.S., U.K. and Continental European Multinational Corporations, *Journal of International Business Studies,* Vol. 26 (3), pp. 555 – 572.
- Morsing, M., Schultz, M. (2006). Corporate social responsibility communication: stakeholder information, response and involvement strategies.
- Nelling E. & Webb E. (2008). Corporate social responsibility and financial performance: "virtuous circle" revisited. Review of Quantitative Finance Accounting (2009) 32:197-209.
- Oluku, M.D., & Ojeka, S. (2011). The challenge of culture to international financial reporting standards convergence.
- Orlitzky M., Schmidt F. L., Rynes S. L. 2003. Corporate Social and Financial Performance: A Meta-analysis. *Organization Studies* 24(3): 403–441 2003.
- PwC. (2013). *Corporate Governance- King III report- introduction and overview*
- Renneboog, L., Horst, J. T., & Zhang, C. (2008). Socially responsible investments: institutional aspects, performance, and investor behavior. *Journal of banking and finance, 32, 1723-1742.*
- Shehata, F. (2014). Theories and Determinants of Voluntary Disclosure. *Faculty of commerce, Cairo University, Giza, Egypt.*
- Sutantoputra, A.W., (2009) Social Disclosures Rating System for assessing firms',CSR Reports, Corporate Communications: An International Journal 14(1): 34-48.
- The IIRC: Integrated Reporting. (2013, February 26). *Pilot programme*.
- Turker, D. (2009). Measuring Corporate Social Responsibility: A Scale Development Study. Journal of Business Ethics (2009) 85:411–427 DOI 10.1007/s10551-008-9780-6.
- Watts, R.L. & Zimmerman, J. (1978). "Towards a positive theory of the determination of accounting standards'', *Accounting Review*, 53 (1), pp. 112-34.
- Watts, R., & Zimmerman, J. (1990). Positive Accounting Theory: a ten-year perspective. *The Accounting Review, 65*, 131-156.
- http://www.eni.com/en_IT/sustainability/reporting-system/table-gri/table-gri-2013.shtml#a_aspetti-ambientali-2011

- http://theiirc.org/wp-content/uploads/2011/09/IR-Discussion-paper-2011_spreads.pdf.
- http://www.theiirc.org/companies-and-investors/
- http://www.pwc.co.za/en/king3/index.jhtm

# Appendices

## Appendix 1: Environmental and Social Index according to the GRI G3 (1)

The disclosure index with corresponding code number from "GRI G3 and G3.1 Update-Comparison sheet". EN: Environmental, HR: Human rights, LA: Labor Practices and Decent work, SO: Society, PR: Product Responsibility

| Items (total=83) | Code |
|---|---|
| **Environmental** | |
| Materials | **EN1** Materials used by weight or volume<br>**EN2** Recycled materials |
| Energy | **EN3** Direct energy consumption<br>**EN4** Indirect energy consumption by primary source<br>**EN5** Energy efficiency<br>**EN6** Reduction of energy consumption<br>**EN7** Initiatives to reduce indirect energy consumption and reductions achieved<br>**EN8** Total water usage<br>**EN9** Water sources significantly affected by withdrawal of water<br>**EN10** Water re-cycled and re-used |
| Biodiversity | **EN11** Location of land owned, leased, managed<br>**EN12** Description of significant impacts of activities, products and services on biodiversity in protected areas<br>**EN13** Habitats protected or restored<br>**EN14** Future plans for managing impacts on biodiversity<br>**EN15** Number of IUCN Red List species and national conservation list species with habitats in areas affected by the operation |
| Emissions, Effluents & Waste | **EN16** Greenhouse gas emissions by weight<br>**EN17** Other relevant indirect greenhouse gas by weight<br>**EN18** Initiatives to reduce greenhouse gas emissions and reductions achieved<br>**EN19** Emissions of ozone-depleting substances by weight<br>**EN20** NO, SO, and other significant air emissions by type and weight<br>**EN21** Total water discharge by quality and destination<br>**EN22** Waste<br>**EN23** Total number and volume of significant spills<br>**EN24** Weight of transported, imported, exported, or treated waste deemed hazardous (under the terms of the Basel Convention Annex I, II, III, and VIII)<br>**EN25** Habitats significantly affected by the reporting organization's discharges of water and runoff |
| | |
| Products & Services | **EN26** Initiatives to mitigate environmental impacts of products and services<br>**EN27** Percentage of products sold and their packing materials that are reclaimed by category |
| Compliance | **EN28** Compliance with environmental laws and regulations |
| Transport | **EN29** Transport of products/goods |
| Overall | **EN30** Environmental protection and environmental investments |
| **Social** | |
| Investment & Procurement practices | **HR1** Investment agreements and contracts that includes human right concerns<br>**HR2** Business partners that have undergone human rights screening |

| | |
|---|---|
| | **HR3** Total hours of employee training on policies and procedures concerning aspects of human rights |
| Non-discrimination | **HR4** Action taken against discrimination |
| Freedom of association & Collective Bargaining | **HR5** Freedom of association and collective bargaining |
| Child labor | **HR6** Action taken against child labor |
| Forced & Compulsory labor | **HR7** Working hours |
| Security practices | **HR8** Security personnel trained in the organization's policies or procedures concerning aspects of human rights |
| Indigenous rights | **HR9** Protection of rights concerning indigenous people |
| Assessment | **HR10** Action taken concerning human right |
| Remediation | **HR11** Work related to human rights filed |
| Employment | **LA1** Total workforce by:<br>Employment type<br>Employment contract<br>Employment region<br>Employment gender<br>**LA2** Total number of new employees<br>**LA3** Benefits provided to full-time employees<br>**LA15** Return to work and retention rates after parental leave, by gender |
| Labor/management relations | **LA4** Percentage of employees covered by collective bargaining agreements<br>**LA5** Minimum notice period(s) regarding operational changes |
| Occupational health & Safety | **LA6** Safety programs<br>**LA7** Rates of injury<br>Occupational diseases<br>Lost days<br>Absenteeism<br>**LA8** Education<br>Training<br>Risk-control programs<br>**LA9** Health and safety topics covered in formal agreements with trade unions |
| Training & Education | **LA10** Average hours of training per year per employee<br>**LA11** Programs for skills management and lifelong learning for employees<br>**LA12** Percentage of employees receiving regular performance and career development reviews |
| Diversity & Equal opportunity | **LA13** Composition of governance bodies and breakdown of employees by gender and age group |
| Equal remuneration for women & Men | **LA14** Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation |
| Local community | **SO1** Community engagement<br>**SO9** Operations with significant potential or actual negative/positive impacts on local communities<br>**SO10** Prevention implemented in operations with significant potential or actual negative impacts on local communities |
| Corruption | **SO2** Anti-corruption<br>**SO3** Percentage of employees trained in organization's anti-corruption policies and procedures<br>**SO4** Actions taken concerning corruption |
| Public policy | **SO5** Participation in public policy development and lobbying<br>**SO6** total value of financial and in-kind contributions to political parties, politicians, and related institutions by country |
| Competitive behavior | **SO7** Actions taken to remain competitive |
| Compliance | **SO8** Compliance with laws and regulations |
| Customer health & Safety | **PR1** Life cycle stages of products and services |

| | |
|---|---|
| | **PR2** Regulations and voluntary codes concerning health and safety impacts of products |
| Product & Service labeling | **PR3** Product and service labeling<br>**PR4** Regulations and voluntary codes concerning product and service information and labeling<br>**PR5** Practices related to customer satisfaction |
| Marketing communications | **PR6** Marketing communications<br>**PR7** Regulations and voluntary codes concerning marketing communications |
| Customer privacy | **PR8** Customer privacy |
| Compliance | **PR9** Compliance with laws and regulations concerning use of products/services |

## Appendix 2: Environmental and Social Index according to the GRI G4

| **Items** | **Code (GRI G4)** |
|---|---|
| **Environmental** | |
| Material | **EN1** Materials used by weight or volume |
| | **EN2** Percentage of materials used that are recycled input materials |
| Energy | **EN3** Energy consumption within the organization |
| | **EN4** Energy consumption outside of the organization |
| | **EN5** Energy intensity |
| | **EN6** Reduction of energy consumption |
| | **EN7** Reductions in energy requirements of products and services |
| Water | **EN8** Total water withdrawal by source |
| | **EN9** Water sources significantly affected by withdrawal of water |
| | **EN10** Percentage and total volume of water recycled and reused |
| Biodiversity | **EN11** Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas |
| | **EN12** Description of significant impacts of activities, products and services on biodiversity in protected areas |
| | **EN13** Habitats protected or restored |
| | **EN14** Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk |
| Emissions | **EN15** Direct greenhouse gas (GHG) emissions (scope1) |
| | **EN16** Energy indirect greenhouse gas (GHG) emissions (scope2) |
| | **EN17** Other indirect greenhouse gas (GHG) emissions (scope3) |
| | **EN18** Greenhouse gas (GHG) emissions intensity |
| | **EN19** Reduction of greenhouse gas (GHG) emissions |
| | **EN20** Emissions of OZONE-Depleting substances (ODS) |
| | **EN21** NO, SO, and other significant air emissions |
| Effluents and Waste | **EN22** Total water discharge by quality and destination |
| | **EN23** Total weight of waste by type and disposal method |
| | **EN24** Total number and volume of significant spills |

| | |
|---|---|
| | **EN25** Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel convention annex I, II, III, and VIII, and percentage of transported waste shipped internationally |
| | |
| | **EN26** Identity, size, protected status, and biodiversity value of water bodies and related habitants significantly affected by the organization's discharges of water and runoff |
| Products and Services | **EN27** Extent of impact mitigation of environmental impacts of products and services |
| | **EN28** Percentage of products sold and their packing materials that are reclaimed by category |
| Compliance | **EN29** Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations |
| Transport | **EN30** Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce |
| Overall | **EN31** Total environmental protection expenditures and investments by type |
| Supplier environmental Assessment | **EN32** Percentage of new suppliers that were screened using environmental criteria |
| | **EN33** Significant actual and potential negative environmental impacts in the supply chain and actions taken |
| Environmental grievances mechanisms | **EN34** number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms |
| **Social** | |
| Investment | **HR1** Total numbers and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening |
| | **HR2** Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained |
| non-discrimination | **HR3** Total number of incidents of discrimination and corrective actions taken |
| Freedom of association and collective bargaining | **HR4** Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights |
| Child labor | **HR5** Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor |
| Forced or compulsory labor | **HR6** Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor |
| Security practices | **HR7** Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations |
| Indigenous rights | **HR8** Total number of incidents of violations involving rights of indigenous peoples and actions taken |
| Assessment | **HR9** Total number and percentage of operations that have been subject to human rights reviews or impact assessments |
| Supplier human rights assessment | **HR10** Percentage of new suppliers that were screened using human rights criteria |

| | |
|---|---|
| | **HR11** Significant actual and potential negative human rights impacts in the supply chain and actions taken |
| Human rights grievance mechanisms | **HR12** Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms |
| Employment | **LA1** Total Number and rates of new employee hires and employee turnover by age group, gender and region |
| | **LA2** Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation |
| | **LA3** Return to work and retention rates after parental leave, by gender |
| Labor management relations | **LA4** Minimum notice periods regarding operational changes, including whether these are specified in collective agreements |
| Occupational health and safety | **LA5** Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs |
| | **LA6** Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender |
| | **LA7** Workers with high incidence or high risk of diseases related to their occupation |
| | **LA8** Health and safety topics covered in formal agreements with trade unions |
| Training and education | **LA9** Average hours of training per year per employees by gender, and by employee category |
| | **LA10** Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings |
| | **LA11** Percentage of employees receiving regular performance and career development reviews, by gender and by employee category |
| Diversity and equal opportunity | **LA12** Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity |
| Equal remuneration for women and men | **LA13** Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation |
| Supplier assessment for labor practices | **LA14** Percentage of new suppliers that were screened using labor practices criteria |
| | **LA15** Significant actual and potential negative impacts for labor practices in the supply chain and actions taken |
| Labor practices grievance mechanisms | **LA16** Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms |
| | |
| Local communities | **SO1** Percentage of operations with implemented local community engagement, impact assessments, and development programs |
| | **SO2** Operations with significant actual and potential negative impacts on local communities |
| Anti-corruption | **SO3** Total number and percentage of operations assessed for risks related to corruption and the significant risks identified |
| | **SO4** Communication and training on anti-corruption policies and procedures |

| | |
|---|---|
| | **SO5** Confirmed incidents of corruption and actions taken |
| Public policy | **SO6** Total value of political contributions by country and recipient/beneficiary |
| Anti-competitive behavior | **SO7** Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes |
| Compliance | **SO8** Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations |
| Supplier assessment for impacts on society | **SO9** Percentage of new suppliers that were screened using criteria for impacts on society |
| | **SO10** Significant actual and potential negative impacts on society in the supply chain and actions taken |
| Grievance mechanisms for impacts on society | **SO11** Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms |
| Customer health and safety | **PR1** Percentage of significant product and service categories for which health and safety impacts are assessed for improvement |
| | **PR2** Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes |
| Product and service labeling | **PR3** Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements |
| | **PR4** Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes |
| | **PR5** Results of surveys measuring customer satisfaction |
| Marketing communications | **PR6** Sale of banned or disputed products |
| | **PR7** Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, bt type of outcomes |
| Customer privacy | **PR8** Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data |
| Compliance | **PR9** Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use products and services |

## Appendix 3: The summarizing table of previous studies

| **McGuire (1988)** | | | |
|---|---|---|---|
| **Study** | **Sample** | **Methodology** | **Finding** |
| The relationship between perceptions of firms' CSR and measures of their financial performance | Largest firms in 20-25 industry groups. N= 131 | Correlation and regression analyses were done. Accounting –and stock market based measures were used to measure the FP. The fortune magazine ratings were used to measure CSR. | The accounting-based method is better than the stock market-based method in the case of measuring CSR |
| **Pava & Krausz (1996)** | | | |
| **Study** | **Sample** | **Methodology** | **Finding** |
| The association between CSR and traditional FP | 53 firms identified by the council of economic priorities | Via descriptive statistics. Accounting- and market-based method was used to measure the FP. The CSP was measured through CEP reports | A small percentage of evidence relates a positive correlation between CSR and traditional FP. |
| **Orlitzky (2003)** | | | |
| Study | **Sample** | **Methodology** | **Finding** |
| Corporate Social and Financial Performance: a Meta-analysis | Content analysis of 52 previous studies | Meta-analysis of 52 studies, the vote-counting method | There is a positive relation between corporate social performance (CSP) and corporate financial performance (CFP) |
| **Nelling and Webb (2009)** | | | |
| **Study** | **Sample** | **Methodology** | **Findings** |
| The causal relation between CSR and FP | | Regression analysis, time series fixed effects approach | There was no direct evidence found that CSR affects a firms FP |
| **Karagiorgos (2010)** | | | |
| **Study** | **Sample** | **Methodology** | **Findings** |
| The relationship between CSR and companies FP in Creece | Creek companies | Content analysis and the market-based measurement model for FP. | There is a positive and significant correlation between stock returns and CSR |
| **Thao Trang and Yekini (2010)** | | | |
| **Study** | **Sample** | **Methodology** | **Findings** |
| Investigating the link between CSR and Financial performance- evidence from Vietnamese listed companies | 20 Vietnamese companies | Content analysis | ▪ A modest relation between CSR and CFP .<br>▪ Reation between the level of debt and CSR |
| **Dragu and Tiron-Tudor (2013a)** | | | |

| Study | Sample | Methodology | Findings |
|---|---|---|---|
| GRI compliance and prerequisites of integrated reporting for Asian-Pacific companies | 16 Asian-Pacific companies participating in the IIRC pilot project | Content analysis. Self conducted disclosure index | Direct correlation between ROA/ROE and the non-financial indices |
| **Churet et al (2014)** | | | |
| **Study** | **Sample** | **Methodology** | **Findings** |
| Integrated reporting, quality of management, and financial performance | The 2500 largest publicly traded companies | Via RobecoSAM a Corporate Sustainability Assessment is conducted. The RobecoSAM propriety database was used to examine trends in IR during 2011 and 2012 to look for evidence of a relation between IR and both quality of management and financial performance | A statistically significant relation was found between the practice of IR and quality of ESG management. Further no statistically significant relation between IR and FP was found |

## Appendix 4: Initial companies participating in the IIRC pilot programme

| # | Pilot company | Country | Sector |
|---|---|---|---|
| 1 | AB Volvo- Volvo Group | Sweden | Automobiles |
| 2 | Association of Chartered Certified Accountants | United Kingdom | Accounting |
| 3 | Aegon Group | Netherlands | Financial Services |
| 4 | Akzo Nobel N.V. | Netherlands | Chemicals |
| 5 | ARM Holding plc. | United Kingdom | Technology Hardware & Equipment |
| 6 | Atlanta S.p.A. | Italy | Industrial Goods & Services |
| 7 | BBVA | Spain | Banks |
| 8 | BWise b.v. | Netherlands | Industrial Goods & Services |
| 9 | Chartered Institute of Building, The | United Kingdom | Professional Organization |
| 10 | Cliffs Natural Resources | United States of America | Basic Resources |
| 11 | CLP Holdings Limited | China | Utilities |
| 12 | CNDCEC | Italy | Accounting |
| 13 | DANONE | France | Food & Beverage |
| 14 | Deloitte LLP | United Kingdom | Accounting |
| 15 | Delotte Netherlands | Netherlands | Accounting |
| 16 | Diesel & Motor Engineering PLC | Sri Lanka | Industrial Goods & Services |
| 17 | Edelman | United States of America | Media |

| | | | |
|---|---|---|---|
| **18** | EnBW Energie BadenWurttemberg AG | Germany | Utilities |
| **19** | Enel | Italy | Electricity |
| **20** | eni S.p.A. | Italy | Oil & Gas |
| **21** | Eskom Holding SOC Limited | South Africa | Utilities |
| **22** | Flughafen Munchen GmbH | Germany | Industrial Goods & Services |
| **23** | Gold Fields | The Republic of South Africa | Basic Resources |
| **24** | HSBC Holding plc | United Kingdom | Banks |
| **25** | KPMG International | Switzerland | Accounting |
| **26** | LeasePlan Corporation N.V. | Netherlands | Financial Services |
| **27** | Marks and Spencer Group plc | United Kingdom | Retail |
| **28** | mecu Limited | Australia | Banks |
| **29** | Microsoft Corporation | United States of America | Technology |
| **30** | N.V. Luchthaven Schipol | Netherlands | Industrial Goods & Services |
| **31** | National Australia Bank Limited | Australia | Banks |
| **32** | Natura Cosmeticos | Brazil | Personal & Household Goods |
| **33** | Novo Nordisk | Denmark | Health care |
| **34** | PriceWaterhouseCoopers N.V. | Netherlands | Accounting |
| **35** | Prudential Financial, Inc. | United States of America | Financial Services |
| **36** | Randstad Holding N.V. | Netherlands | Industrial Goods & Services |
| **37** | Showa Denki | Japan | Households Goods & Home Construction |
| **38** | State Nuclear Energy Corporation ROSATOM | Russian Federation | Utilities |
| **39** | Stockland | Australia | Real Estate |
| **40** | Takeda Pharmaceutical Company Limited | Japan | Health care |
| **41** | The Coca-Cola Company | United States of America | Food & Beverage |
| **42** | Vancity | Canada | Banks |
| **43** | Vestas Wind System | Denmark | Oil & Gas |
| **44** | Via Gutenberg | Brazil | Industrial Goods & Sevices |

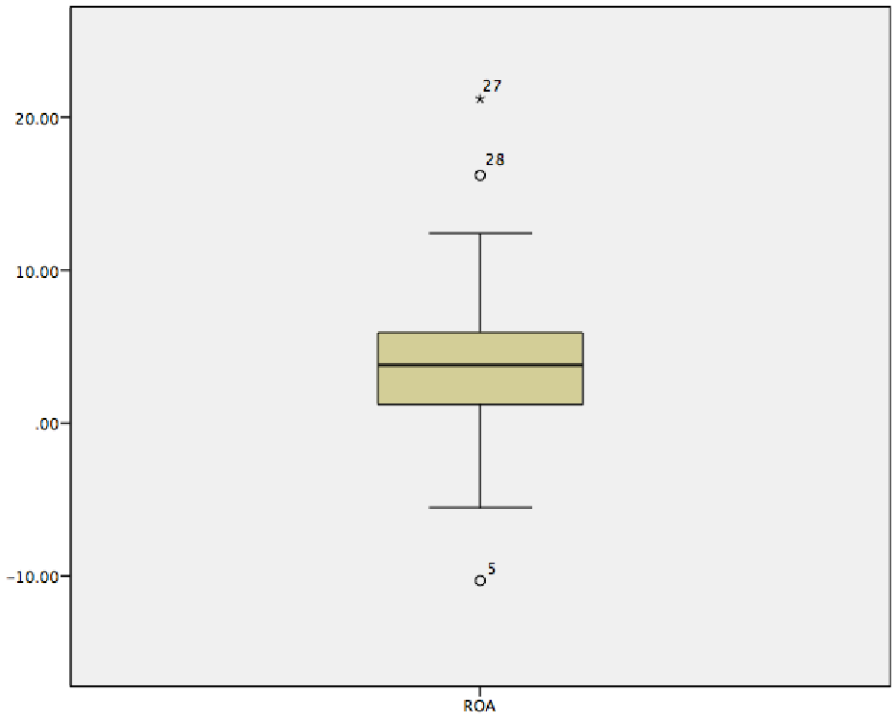
## Appendix 5: Test of normal distribution ROA and descriptives

| Descriptives | | | | |
|---|---|---|---|---|
| | | | Statistic | Std. Error |
| ROA | Mean | | 3.9021 | .96474 |
| | 95% Confidence Interval for Mean | Lower Bound | 1.9393 | |
| | | Upper Bound | 5.8648 | |
| | 5% Trimmed Mean | | 3.7353 | |
| | Median | | 3.7900 | |
| | Variance | | 31.645 | |
| | Std. Deviation | | 5.62537 | |
| | Minimum | | -10.31 | |
| | Maximum | | 21.21 | |
| | Range | | 31.52 | |
| | Interquartile Range | | 4.86 | |
| | Skewness | | .647 | .403 |
| | Kurtosis | | 2.938 | .788 |

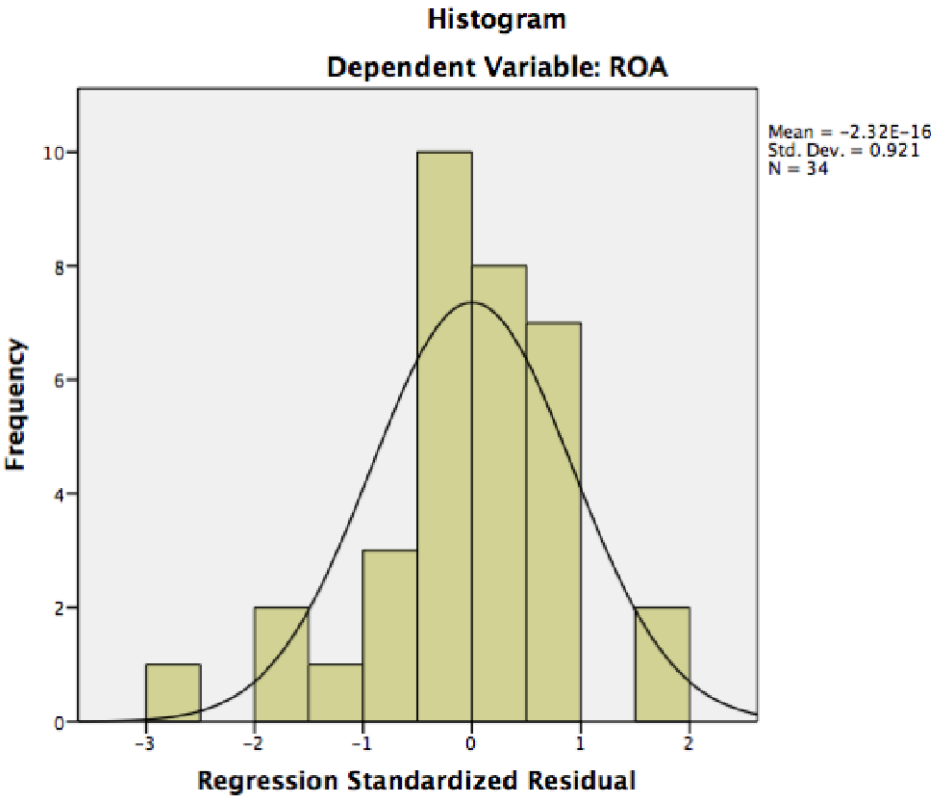
| Tests of Normality | | | | | | |
|---|---|---|---|---|---|---|
| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
| | Statistic | df | Sig. | Statistic | df | Sig. |
| ROA | .156 | 34 | .036 | .917 | 34 | .013 |

a. Lilliefors Significance Correction

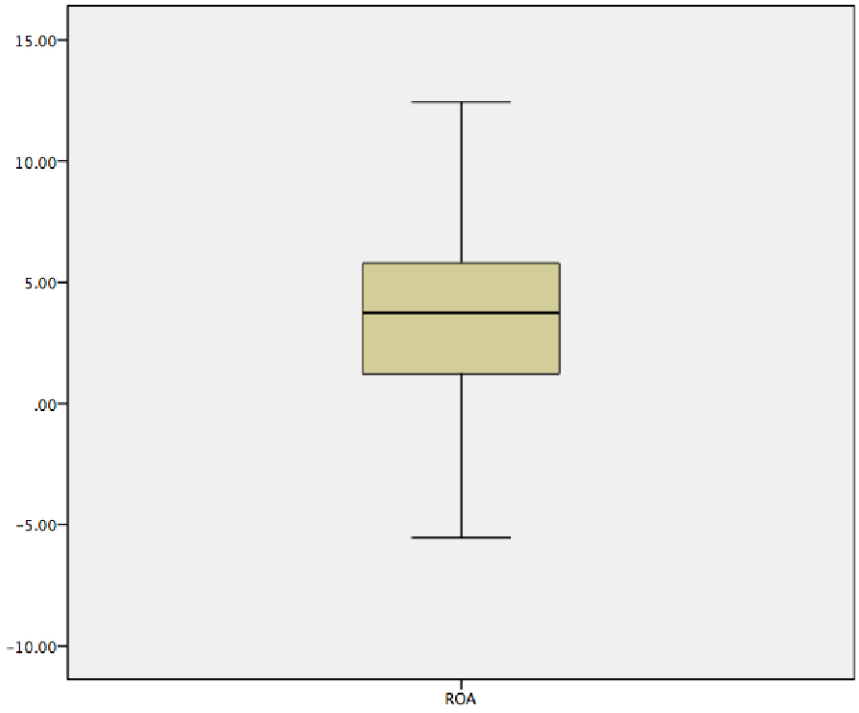
Boxplot ROA before winsorizing



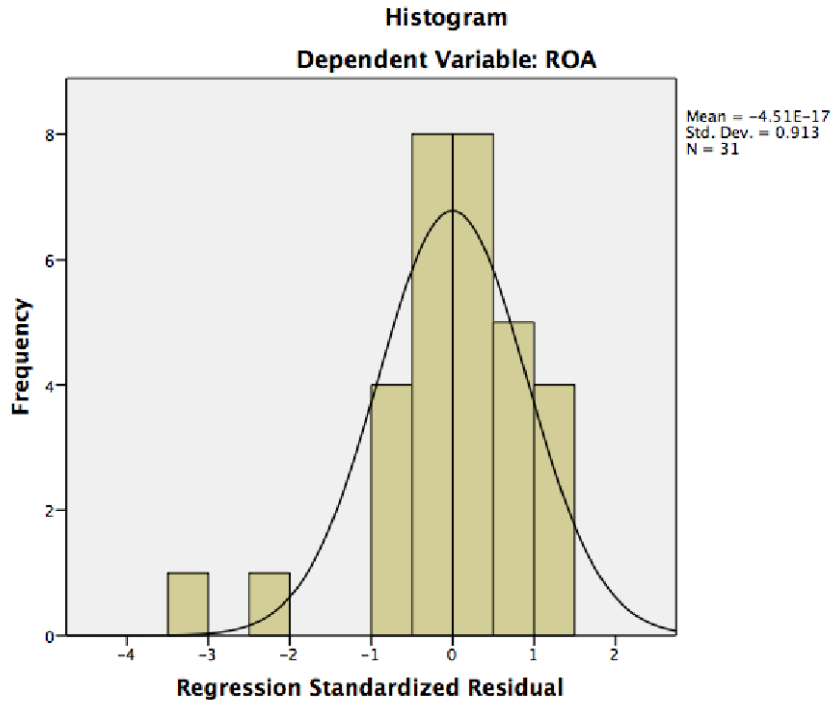
Histogram before winsorizing




Boxplot ROA after winsorizing



Histogram ROA after winsorizing



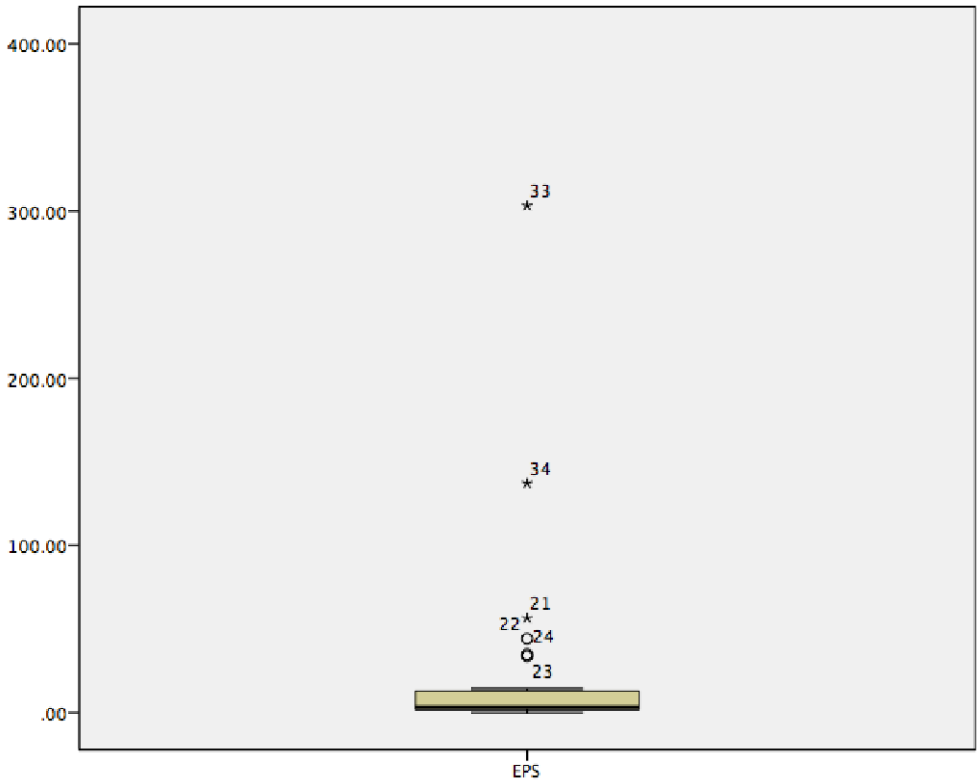

## Appendix 6: Test of normal distribution EPS and descriptives

| Descriptives | | | | |
|---|---|---|---|---|
| | | | Statistic | Std. Error |
| EPS | Mean | | 21.2982 | 9.61712 |
| | 95% Confidence Interval for Mean | Lower Bound | 1.7321 | |
| | | Upper Bound | 40.8644 | |
| | 5% Trimmed Mean | | 10.6179 | |
| | Median | | 3.2850 | |
| | Variance | | 3144.626 | |
| | Std. Deviation | | 56.07696 | |
| | Minimum | | .00 | |
| | Maximum | | 303.17 | |
| | Range | | 303.17 | |
| | Interquartile Range | | 11.46 | |
| | Skewness | | 4.354 | .403 |
| | Kurtosis | | 20.594 | .788 |

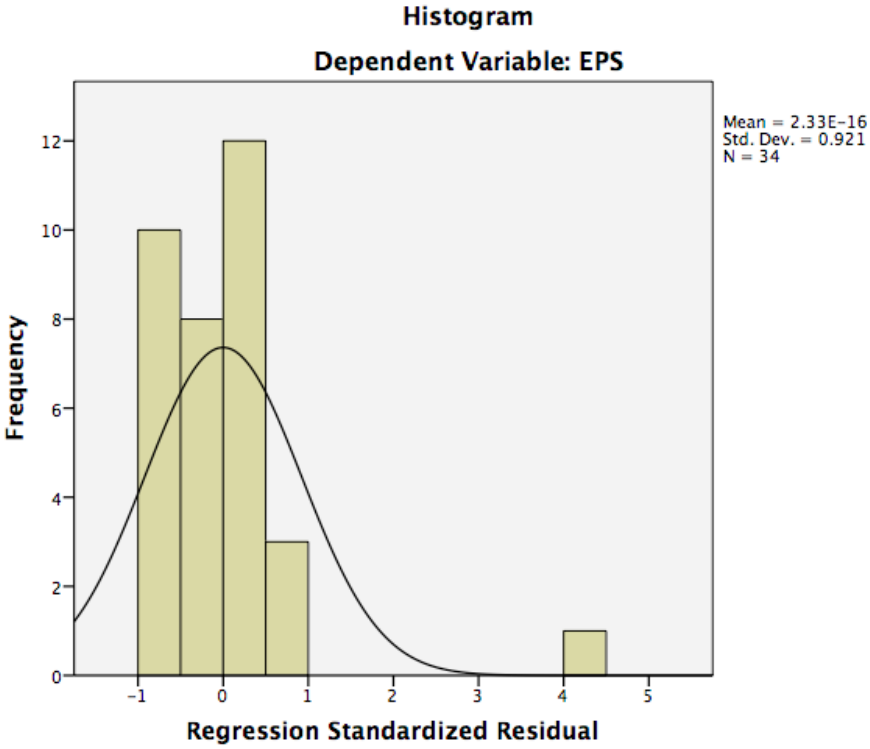
| Tests of Normality | | | | | | |
|---|---|---|---|---|---|---|
| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
| | Statistic | df | Sig. | Statistic | df | Sig. |
| EPS | .373 | 34 | .000 | .401 | 34 | .000 |

a. Lilliefors Significance Correction

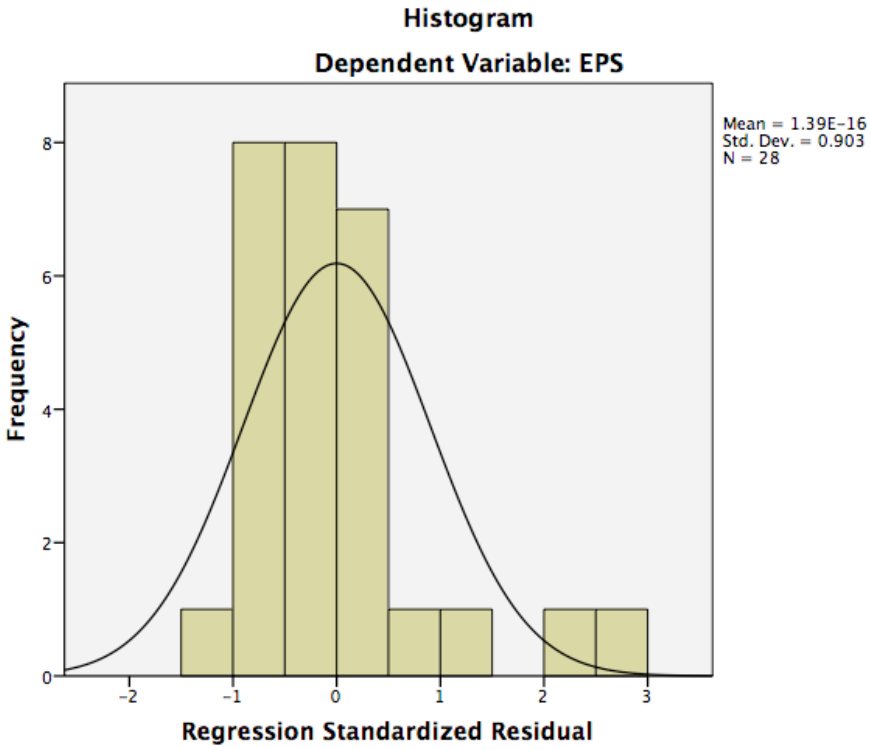
Boxplot EPS before winsorizing



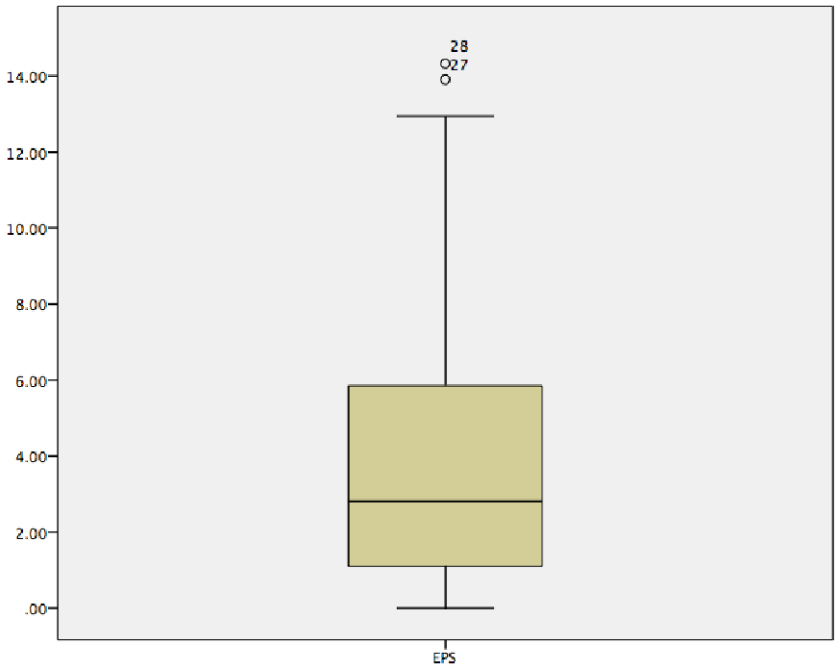

Histogram EPS before winsorizing




Histogram EPS after winsorizing




Boxplot EPS after winsorizing




## Appendix 7: Robustness check ROA

| Variables Entered/Removed[a] | | | |
|---|---|---|---|
| Model | Variables Entered | Variables Removed | Method |
| 1 | Mtb, IAR, NFI[b] | . | Enter |

a. Dependent Variable: ROA
b. All requested variables entered.

| Model Summary[b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .727[a] | .528 | .481 | 4.05405 | .528 | 11.180 | 3 | 30 | .000 |

a. Predictors: (Constant), Mtb, IAR, NFI
b. Dependent Variable: ROA

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 551.217 | 3 | 183.739 | 11.180 | .000[b] |
| | Residual | 493.060 | 30 | 16.435 | | |
| | Total | 1044.277 | 33 | | | |

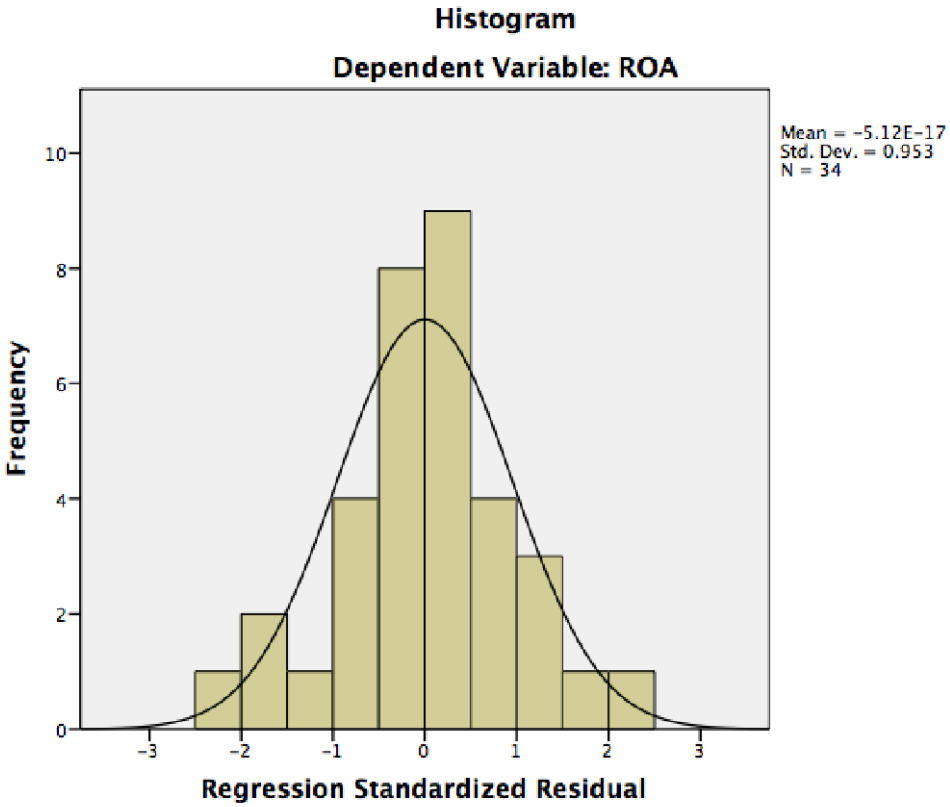
a. Dependent Variable: ROA
b. Predictors: (Constant), Mtb, IAR, NFI

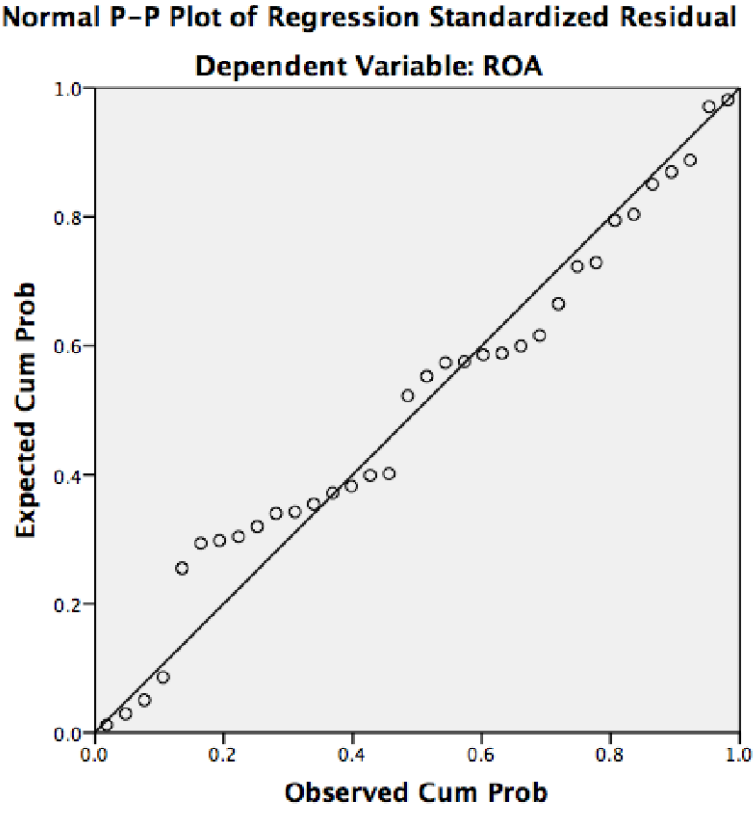
| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.247 | 2.383 | | .943 | .353 |
| | IAR | -5.558 | 2.961 | -.236 | -1.877 | .070 |
| | NFI | -.891 | 4.200 | -.029 | -.212 | .833 |
| | Mtb | .923 | .182 | .682 | 5.064 | .000 |

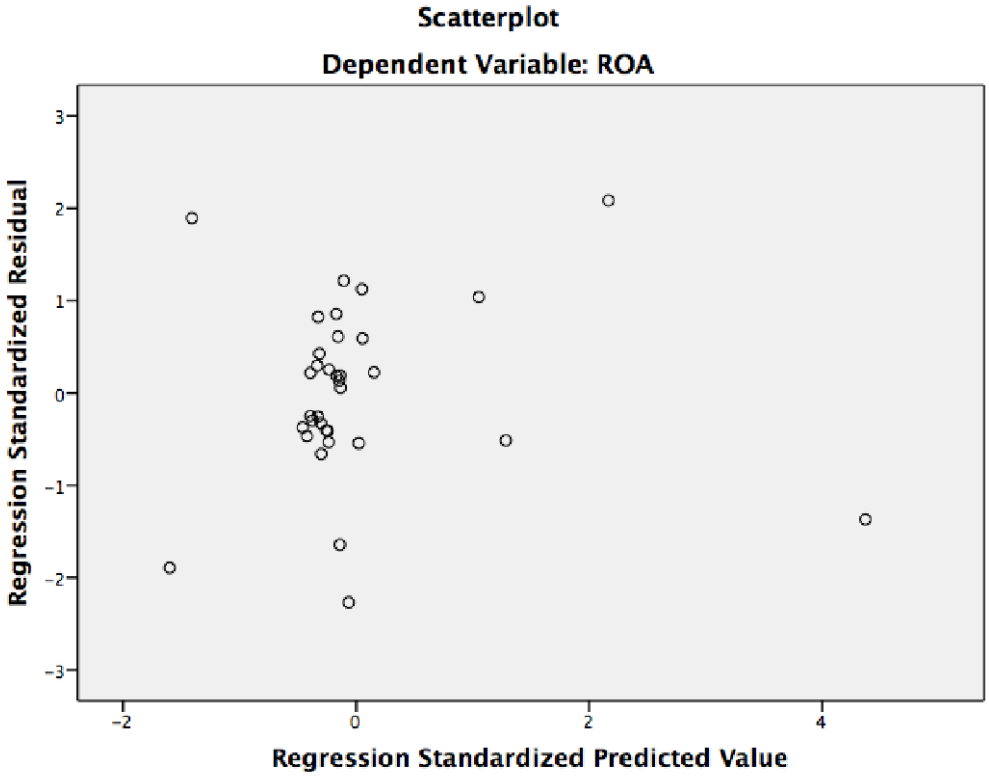
a. Dependent Variable: ROA

| Residuals Statistics[a] | | | | | |
|---|---|---|---|---|---|
| | Minimum | Maximum | Mean | Std. Deviation | N |
| Predicted Value | -2.6376 | 21.7691 | 3.9021 | 4.08700 | 34 |
| Residual | -9.19491 | 8.45258 | .00000 | 3.86538 | 34 |
| Std. Predicted Value | -1.600 | 4.372 | .000 | 1.000 | 34 |
| Std. Residual | -2.268 | 2.085 | .000 | .953 | 34 |

a. Dependent Variable: ROA


Histogram
Dependent Variable: ROA
Mean = -5.12E-17
Std. Dev. = 0.953
N = 34
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ROA
Expected Cum Prob
Observed Cum Prob




## Appendix 8: Robustness check EPS

| Variables Entered/Removed[a] | | | |
|---|---|---|---|
| Model | Variables Entered | Variables Removed | Method |
| 1 | Mtb, IAR, NFI, SIZE[b] | . | Enter |

a. Dependent Variable: EPS
b. All requested variables entered.

| Model Summary[b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .667[a] | .445 | .369 | 44.54886 | .445 | 5.822 | 4 | 29 | .001 |

a. Predictors: (Constant), Mtb, IAR, NFI, SIZE
b. Dependent Variable: EPS

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 46219.221 | 4 | 11554.805 | 5.822 | .001[b] |
| | Residual | 57553.432 | 29 | 1984.601 | | |
| | Total | 103772.653 | 33 | | | |

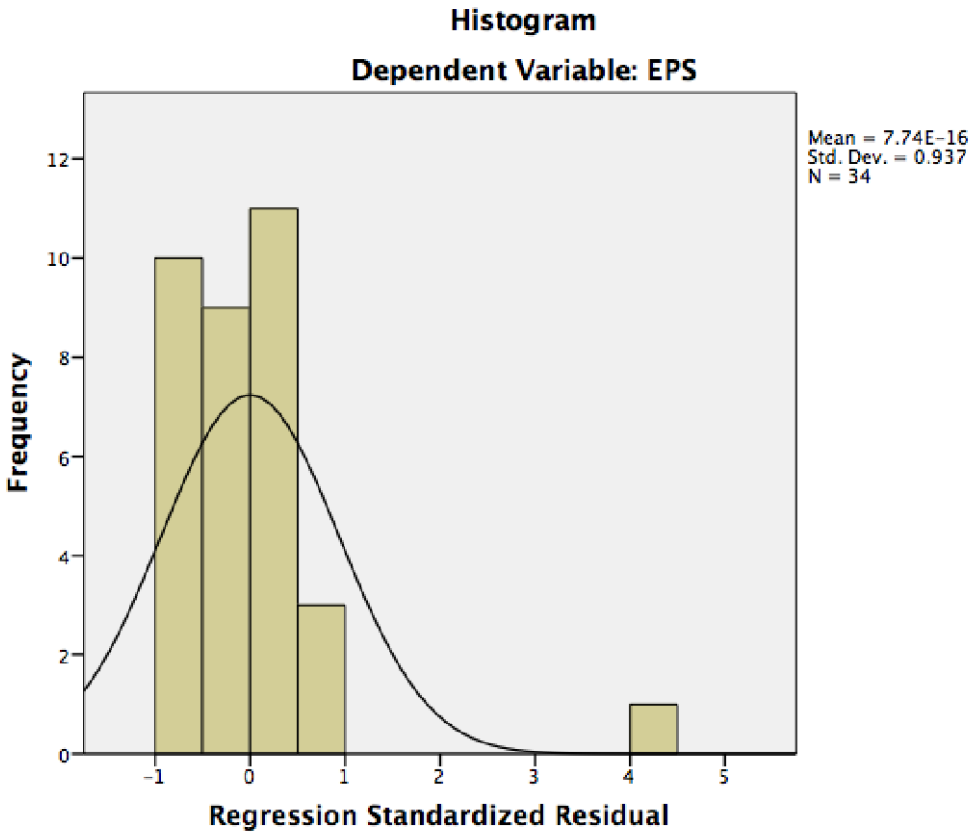
a. Dependent Variable: EPS
b. Predictors: (Constant), Mtb, IAR, NFI, SIZE

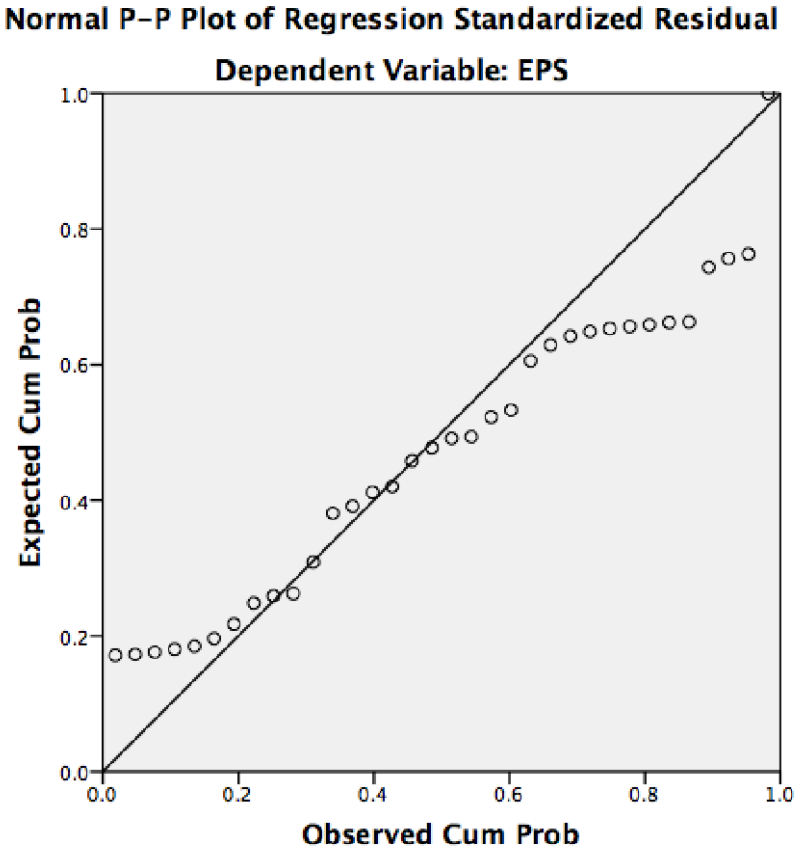
| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -141.251 | 83.562 | | -1.690 | .102 |
| | IAR | 7.854 | 33.721 | .033 | .233 | .817 |
| | NFI | -168.915 | 46.217 | -.543 | -3.655 | .001 |
| | SIZE | 30.925 | 9.705 | .525 | 3.186 | .003 |
| | Mtb | 4.867 | 2.317 | .361 | 2.101 | .044 |

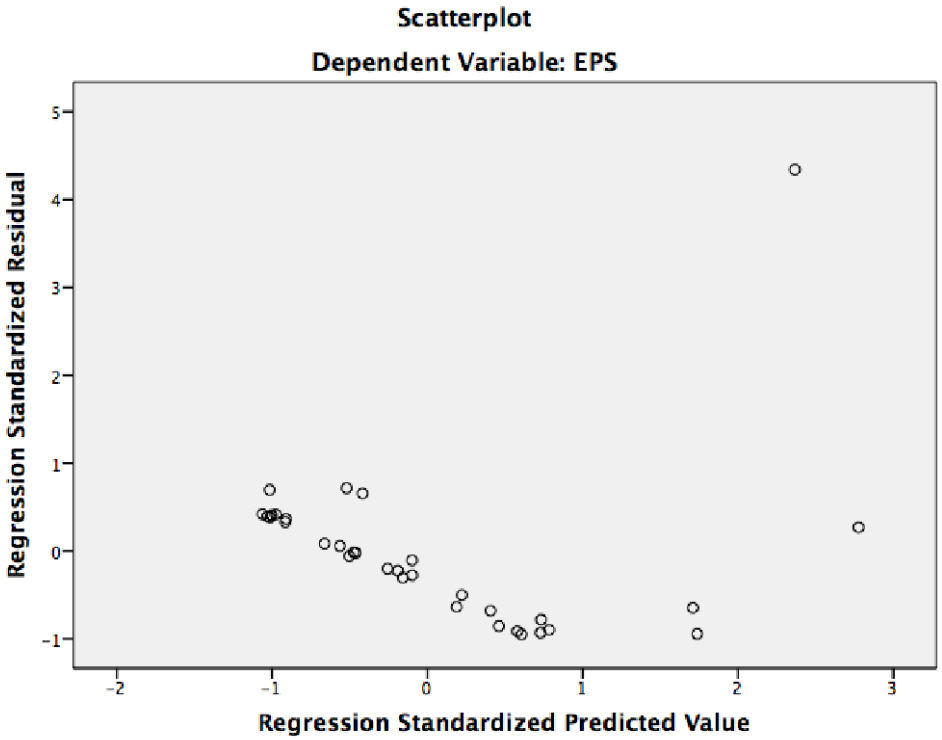
a. Dependent Variable: EPS

| Residuals Statistics[a] | | | | | |
|---|---|---|---|---|---|
| | Minimum | Maximum | Mean | Std. Deviation | N |
| Predicted Value | -18.4168 | 125.2380 | 21.2982 | 37.42436 | 34 |
| Residual | -42.30614 | 193.26180 | .00000 | 41.76175 | 34 |
| Std. Predicted Value | -1.061 | 2.777 | .000 | 1.000 | 34 |
| Std. Residual | -.950 | 4.338 | .000 | .937 | 34 |

a. Dependent Variable: EPS


Histogram
Dependent Variable: EPS
Mean = 7.74E-16
Std. Dev. = 0.937
N = 34
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: EPS
Expected Cum Prob
Observed Cum Prob


Scatterplot
Dependent Variable: EPS
Regression Standardized Residual
Regression Standardized Predicted Value
5
4
3
2
1
0
-1
-2
-1
0
1
2
3