CSR Ratings and Value Creation in Turnarounds

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Abstract

This study investigates whether turnaround success and value creation are influenced by Corporate Social Responsibility (CSR) ratings. A sample of 355 US cross-industry turnaround cases has been identified for the period between the years 2002 and 2013. Turnaround success and performance are measured using the concept of financial value creation, defined as the difference between the Return On Invested Capital (ROIC) and the Weighted Average Cost of Capital (WACC). CSR is measured as relative ranking of environmental, social and governance performance based on Asset4's ratings. Logistic regressions were applied to determine the likelihood of turnaround success and linear regression for change in performance. Contrary to the effects hypothesised and findings of most studies in the field of CSR and financial performance, companies with a lower governance score show superior chances in succeeding in the turnaround as well as in increasing their performance. There is some evidence that a reduced application of environmental best practices can indicate an increased chance of succeeding in a short-term turnaround, however not in the long-run. The social variable has given inconclusive results. Some cost reduction and financial restructuring turnaround strategies have shown significance.

Keywords: turnaround, corporate social responsibility (CSR), environment social governance (ESG), Asset4, value creation

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Introduction

Although in academia a clear-cut common definition of turnaround is still to be found (Pandit, 2000), the majority of the researchers in this field are interested in investigating the reasons of, and the reactions to, a firm's poor performance. The turnaround analysis makes use of identification procedures to establish the operational and financial health of the company, to then investigate possible strategies that could help improving performance and regaining profitability. In this context, the turnaround is considered as a process, which generally takes between two and three years (Hambrick and Schecter, 1983, Chowdhury and Lang, 1996, Pandit, 2000). The way a firm responds to performance decline is called "turnaround strategy", even though researchers rarely investigate if the actions taken in a period of distress are specifically turnaround related. The term "strategy" is often interchanged with the term "response".

The turnaround literature has not yet investigated in depth the effects of Corporate Social Responsibility (CSR) in turnaround situations, even though the academic as well as the business world have increasingly embraced the principles of CSR because of its growing relevance. In today's society, concern about CSR has been rising due to an increased global awareness of the negative effects of global warming (Sarkar, 2008, Eweje, 2011) and the pressure and attention from society, politics, and regulators (Solomon and Lewis, 2002, Vormedal and Ruud, 2009). Companies can use CSR as a market differentiation strategy to serve clients with sustainability expectations (Crifo et al., 2013). A 2013 KPMG survey[1] concludes that corporate social reporting has become a "mainstream business practice worldwide", with almost three quarters of all surveyed companies publishing a CSR report. Even though the effect of sustainable behaviour on financial performance in companies is not yet clear (Orlitzky et al., 2003), sustainable and responsible investment assets[2] in the US have increased from 0.6 trillion dollars in 1995 to 3.7 in 2012, growing by almost one third more than the broader universe of assets under professional management[3].

[1]The KPMG Survey of Corporate Responsibility Reporting, 2013

[2]Assets under management using one or more of the three core socially responsible investing strategies-screening, shareholder advocacy, and community investing.

[3]USSIF 2012 report: Sustainable and Responsible Investing Trends in the United States

Combining turnaround and CSR research, this thesis tries to shed light on the possible effect of CSR practices, proxied by CSR ratings, in the turnaround setting. The thesis investigates the impact of CSR on both the speed at which companies increase their performance throughout the turnaround situation and the likelihood of succeeding in a turnaround.

The authors place financial performance into the context of value creation, proposing a turnaround identification procedure. An investigation of 1,020 US companies resulted in a multiple industry sample of 355 turnaround situations between the years 2002 and 2013. The most common turnaround strategies, categorised into revenue enhancing, operational, asset restructuring, financial and managerial restructuring are included and proxied by accounting measures. The CSR performance is specified along environmental, social and governance practices and quantified by using Asset4's company ratings. The findings of this study add to the existing literature by giving insights into how turnarounds are linked to CSR ratings.

The paper is organised as follows: Section 1 analyses the current literature, looking at the theoretical and empirical findings on the turnaround and the CSR performance topics. Section 2 establishes the approach taken to the turnaround theory, proposing a value creation measure to establish an objective performance threshold for the identification of turnaround situations, and the hypotheses that are going to be tested. Section 3 is concerned with the methodology that is applied to test the hypotheses. In Section 4, the sample this study uses is described. Section 5 presents a critical look at the empirical findings. Section 6 gives the overall conclusion and Section 7 discusses the limitations of this thesis and suggests topics for future research.

1 Previous research

In this chapter the research on the topics of turnarounds and CSR is presented separately, then is discussed what has been written about the relationship between CSR and turnarounds.

1.1 Previous research on turnarounds

1.1.1 Definition of turnaround and turnaround-needing companies

According to Schmuck (2013) a turnaround is the process by which a company can overcome a distress situation, a process usually taking between two and three years (Hambrick and Schecter, 1983, Chowdhury and Lang, 1996, Pandit, 2000). Turnaround research tries to identify if and why a restructuring might be needed in a company. Once a company is identified as turnaround candidate, the main research focus is on the reasons that led to poor performance and the subsequent corporate responses. The term "turnaround" can be misleading, as it could be understood to imply that only successful situations are considered. However, in the turnaround literature, the term turnaround applies to all situations where performance is insufficient. Whether performance increases or decreases in a later stage is subject of investigation. Therefore, turning around is seen as a process and not as a result.

Sometimes the need for a turnaround is associated with financial distress that potentially leads to an extreme situation such as insolvency or bankruptcy, in other cases it is defined as a temporary loss of competitiveness, measured with a series of financial performance measures. John et al. (1992) analyse "the routine functioning of the internal corporate governance system in initiating restructurings to cope with performance shocks" in contrast to "lessons drawn from restructurings caused by takeovers or bankruptcy, which are extreme events in the life of the corporation". Ofek (1992) focuses the attention on short-term financial distress. These heterogeneous definitions of what a turnaround is also result in different choices on how to determine if a company needs a turnaround and which performance indicator should be used. The comparative study done by Pandit (2000) highlights the lack of common definition among researchers on how to determine if a company is in need of a turnaround.

1.1.2 Performance measures

Among the literature reviewed, the Return On Investment (ROI) is the ratio most commonly used to measure the firm's performance. Hambrick and Schecter (1983), Robbins and Pearce II (1992), Chakraborty and Dixit (1992), Chowdhury and Lang (1996) and Morrow jr. et al. (2004) use either the ROI or a combination of ROI and other measures. In Hambrick and Schecter (1983) the ROI used is the one provided by the PIMS database, and corresponds to the Return On Invested Capital (ROIC), whereas Chowdhury and Lang (1996) use a simple ROI, provided by Dialog Information Services' Disclosure.

The Return On Assets (ROA) is also present, but in different formulations (Pant, 1991, Kang and Shivdasani, 1997, Denis and Kruse, 2000, Yawson, 2009). It shows the relation between the assets of the company and the profit generated by those assets. It gives a perspective on the return of the whole asset base.

Altman's Z-score (Altman, 1968), a measure of financial distress and bankruptcy likelihood calculated from the income statement and balance sheet values, is also increasingly used as performance measure in the turnaround literature (Sudarsanam and Lai, 2001). However, its validity as performance measure is unclear, especially considering the deceiving explanatory power it has shown in the Sudarsanam and Lai (2001) study. In order for it to be computed, it requires the presence of a working capital, which does not exist for all industries, such as the banking sector, making the Altman's Z-score a less useful measure for a multiple industry analysis.

The Return On Equity (ROE) used in some studies as performance measure (Pearce II and Doh, 2002, Atiase et al., 2004), focuses on the shareholders' perspective. It is possible to find the Return On Sales (ROS) in Robbins and Pearce II (1992), the net earnings margin in John et al. (1992), share price in Ofek (1992) and Lai and Sudarsanam (1997). Schmuck (2013) subtracts capital expenditures and interest expenses from the Earnings Before Interest Taxes Depreciation and Amortisation (EBITDA) to obtain the performance measure. Tobin's Q, as the "sum of the market value of equity, the book value of debt, and deferred taxes divided by the book value of total assets minus intangible assets" (Morrow jr. et al., 2004) is used as a proxy for market performance.

1.1.3 Turnaround strategies and performance

To understand the reason for the implementation of a specific set of turnaround strategies, it is important to know the causes of decline. These are generally classified by research into two main categories: external and internal causes. External causes of decline are usually ascribed to economic problems and competitive, technological, or social change (Robbins and Pearce II, 1992, Pearce II and Doh, 2002, Ashta and Tolle, 2004, Filatotchev and Toms, 2006, Schmuck, 2013). Internal causes of decline are defined as firm-specific, and therefore, not easy to generalise (Sudarsanam and Lai, 2001, Pearce II and Doh, 2002) but can include categories such as lack of operating controls, overexpansion, excessive leverage, and top management mistakes (Robbins and Pearce II, 1992). However, the existing literature does generally not go into detail of defining and investigating the causes of decline on a firm level. The firm's size is an important attribute for the implementation of turnaround strategies because large companies have different behaviours and priorities than smaller ones. Specifically in the case of turnarounds, some researchers (John et al., 1992, Chowdhury and Lang, 1996) identified substantial differences among large and small firms, in terms of strategies and reactions to downturn.

Hofer (1980) proposed to define turnaround strategies as "strategic" and "operational", the first focusing on the market share and changes in strategy and the latter on changes in operations. It was not until later that financial restructuring strategies were included (Sudarsanam and Lai, 2001).

The strategies that were most commonly included in the turnaround literature are the following.

Revenue enhancement

Companies that face a period of decline in profitability and competitiveness could be interested in applying an aggressive expansion strategy with new and improved products. Research and Development (R&D) and marketing expenses, are taken as proxies for such strategies. Pant (1991) finds a significant impact of industry's R&D on the ROA. Others, however, theorise that such measures have an impact only on the long-term performance, while in the short-term the related expenses should be reduced in order

to save cash. Hambrick and Schecter (1983) find a positive impact of a reduction in marketing and sales expenses on profitability.

Operational restructuring

Intended by Hofer (1980), Sudarsanam and Lai (2001) as the reduction of operating costs in order to increase short-term cash flow creation, the cost cutting strategy is fundamental and mentioned by the large majority of papers on turnarounds (Hambrick and Schecter, 1983, Robbins and Pearce II, 1992, Chowdhury and Lang, 1996, Schmuck, 2013). Pearce II and Doh (2002) show the significant impact of operating efficiency strategies on ROE and Schmuck (2013) finds that cost cutting has a positive impact on turnaround success. It can be seen as a fire-fighting strategy that consists in reducing costs, such as overhead, or reducing the number of employees (John et al., 1992, Yawson, 2009).

Asset restructuring

Often included in the analysis of turnarounds is asset retrenchment. It consists of a focus on the core business and of shedding the non-core or non-profitable branches or activities to face a sharp decline and avoid financial distress (Hofer, 1980, Robbins and Pearce II, 1992). It allows for an immediate increase in the cash flow, through a decrease in capital expenditures, with the aim of freeing up resources that can potentially find better application. In the case of cash flow volatility and financial distress, firms prefer to reduce investments rather than searching for capital externally (Minton and Schrand, 1999). Schmuck (2013) finds that higher capital expenditure relative total assets increases turnaround likelihood, while Chowdhury and Lang (1996) find a positive impact from the reduction of plant and equipment book value..

As alternative asset restructuring strategy, companies can choose to take a more active approach and grow through strategic partnerships and acquisitions. The asset investment and acquisition strategy might come as a way to increase the company's capabilities and increase the market share (Hambrick and Schecter, 1983, Sudarsanam and Lai, 2001). This strategy is normally applied when the company does not need to engage as much in fire-fighting solutions.

Financial restructuring

The importance of financial restructuring is clearest when companies need to raise capital but are in financial distress, as it is more difficult to find capital in such a risky situation (Yawson, 2009, Schmuck, 2013). Top management may ask for an equity issue, which reassures the debtholders about the shareholders' ongoing interest in continuing the firm's activity, however, giving a negative signal to the market in the short-term (Asquith and Mullins Jr., 1986, Spiess and Affleck-Graves, 1995, Berk et al., 2011). No correlation has been found between equity issue and the performance measure (Sudarsanam and Lai, 2001, Yawson, 2009, Schmuck, 2013). Another equity-based strategy is the cut or omission of the dividends to shareholders, reducing the cash outflow for the company(Sudarsanam and Lai, 2001, Schmuck, 2013). Also this operation gives a negative signal to the markets (Asquith and Mullins Jr., 1986, Ghosh and Woolridge, 1989, Berk et al., 2011). During financial distress, such a strategy might, however, be the result of debt covenants, forcing the company to use the freed-up cash from the dividend omission for debt rather than operations (Schmuck, 2013). Debt-equity swap and issuing convertible bonds to replace long-term debt are also used in restructurings (Gillet and de La Bruslerie, 2010). Schmuck (2013) and Sudarsanam and Lai (2001) show that debt restructuring has a positive impact on turnaround success and performance.

Managerial restructuring

Considered by Hofer (1980) as a strategic turnaround strategy, and in general as an important measure to redress a company (Pandit, 2000), the change in top management (namely the CEO), if not a routine change, is a sign that the company is seeking to be turned around by a new chief executive officer, who often is called expressly for his or her acknowledged experience in corporate restructuring.

1.1.4 Severity of distress

The severity of distress is considered by some of the authors but disregarded by others. Pandit (2000) explains that this is one of the largely ignored topics in the turnaround research. It helps separating those companies that are facing a temporary and weak

decline from those that could be in a value destruction spyral with large losses and a shrinking market share. Some turnaround strategies will be more suitable for the first case, while others for the second. However, both Hofer (1980) and Robbins and Pearce II (1992) considered the importance of the severity of the decline in their studies; the first by taking account of a revenues to costs break-even point, and the latter with the help of Altman's Z-score (Altman, 1968), which has gained in popularity as a severity control (Samkin et al., 2012, Schmuck, 2013). Some prefer to define the severity of distress with general financial ratios and indicators (Filatotchev and Toms, 2006, Slatter et al., 2006), while others (Hofer, 1980, Ashta and Tolle, 2004) specify the duration of underperformance as a measure of severity of distress.

1.1.5 Turnaround success and failure

The identification of turnaround success or failure depends on the performance measure, and its application. Some authors use absolute return ratios (Hambrick and Schecter, 1983, Chakraborty and Dixit, 1992, Sudarsanam and Lai, 2001), while others measure performance relative to industry or peers (Robbins and Pearce II, 1992, Chowdhury and Lang, 1996, Pearce II and Doh, 2002). For Hambrick and Schecter (1983) a firm goes through a successful turnaround if the average ROI of the two years following the performance loss is higher than 20%, while it needs to be larger than 10% for Chowdhury and Lang (1996). Robbins and Pearce II (1992) suggest that the ROS and the ROI need to increase more than the industry average for two consecutive years and return to pre-downturn levels. Another approach is taken by Pearce II and Doh (2002) who use ROE, shorter time frames as well as company comparison to industry performance. For Sudarsanam and Lai (2001) a firm succeeds in a turnaround if it manages to gain a positive Altman's Z-score for two successive years after the distressed year.

From the literature reviewed it has become apparent that a common framework on how to define companies needing a turnaround and how to test if the turnaround was successful is missing. Putting resources into an attempt to engage in a turnaround might not always be the best solution. Alternatives to turnarounds such as a merger, an acquisition from another company, a bankruptcy or a liquidation of the firm are

generally disregarded by the previous research. In fact, if the business is not viable anymore and is destroying value for stakeholders, it is in their interest to liquidate the company (Hotchkiss et al., 2008).

1.2 Previous research on Corporate Social Responsibility

1.2.1 Definition

CSR, or the equivalent Environmental, Social, Governance (ESG) performance, has been defined as a set of corporate actions and decisions that benefit society or the environment and go beyond the strict minimum required by law, helping to create a more sustainable society (Friedman, 1970). They mainly relate to ethical behaviour and transparency. Privately offering access to public goods, such as knowledge, or internalising externalities, such as through a voluntary CO_2 offsetting scheme, going beyond compliance standards, would be the tangible expression of CSR (Crifo et al., 2013). This behaviour then translates into principles of corporate responsibility, such as processes, policies and programmes within a company (Wood, 1991). While there is a general definition of CSR, definitions of its application and adaptation to specific social contexts are yet to be agreed (Dahlsrud, 2008). In matters that relate to CSR, the State acts as regulator, businesses as market makers and the civil society expresses itself through collective actions (Van Marrewijk, 2003).

Academics have put forward a multitude of theories to explain the motivation of firms to engage in CSR. Companies are pushed towards CSR disclosure by political costs concerns (Ortas et al., 2014), legitimacy concerns (Cho and Patten, 2007, Cho et al., 2012), agency costs (Hill and Jones, 1992), and decision making theory (Baumeister et al., 2001, Crifo et al., 2013).

1.2.2 CSR and its measurement

CSR measurement is often source specific. Norms and standards in the realm of CSR exist, such as ISO 14000 for environmental management, however, the industry practices still differ widely in measurement, scope and format. Companies' sustainability reports

portray values, issues, and processes that are being addressed to lessen the impact of harmful activities. From an investor's perspective, to obtain a more generic and comparable measurement between companies, CSR performance is usually assessed along the three ESG dimensions. Corporate environmental performance is concerned with pollution control, pollution prevention and product stewardship. Corporate social performance reflects the interaction with stakeholders such as in employment policies and practices - e.g. employee involvement and equality policies -, and the community. Corporate governance performance establishes whether the board and managers act in the interests of all shareholders and the rules and regulations enabling stakeholders to exercise appropriate oversight of a company in order to maximise value(Hassel and Semenova, 2013).

To get a deeper insight into CSR performance and be able to compare among different companies, performance ratings are used by investors as well as academics. Similar to credit ratings, external rating agencies, such as KLD[4] of MSCI, Asset4 ESG[5] of Thomson Reuters or GES[6] of GES Investment Service, offer company specific CSR ratings. The benefit of these ratings is that they should give impartial information along a series of CSR measures, ultimately reducing information asymmetries for investors and external stakeholders. Semenova (2010) shows that some CSR ratings give convergent results, however, Chatterji et al. (2014) conclude that researchers are better advised in using multiple rating schemes when studying CSR. The objectivity of CSR measurements can be biased by the impact of ratings on the behaviour of the company under scrutiny (Chatterji and Toffel, 2010), of the investors (Becchetti et al., 2007), consumers (Sen and Bhattacharya, 2001) and analysts (Ioannou and Serafeim, 2010a). A company's CSR performance is also highly dependent on its institutional environment. Many studies work on cross-national samples; however, Gjølberg (2009) shows that the influence of domestic structures needs to be included in the analysis of CSR, as accounting and legal practices widely differ between countries. Comparing local mandatory CSR reporting requirements highlights the need to account for context and institutional differences,

[4] http://www.whartonwrds.com/archive-pages/our-datasets/kld/

[5] http://thomsonreuters.com/esg-research-data/

[6] http://www.ges-invest.com/pages/index.asp?ID=1

such as political, legal and labour market (Ioannou and Serafeim, 2010b), to understand firms responses to reporting regulations (Ioannou and Serafeim, 2011). A company's size is also an important factor in the study of CSR performance. Larger firms can be expected to have a higher requirement for stakeholder communication (Hillman and Keim, 2001). Ortas et al. (2014) find that firm size is an important determinant of corporate environmental reporting.

1.2.3 CSR and financial performance

Many studies have investigated the impact of CSR, as aggregate measure as well as by using individual components of the CSR measure, on market-oriented and accounting financial measures, but results have been mixed. Some report that CSR is reducing a firm's financial performance, increasing costs, and giving a disadvantage against non-CSR competitors (Friedman, 1970). Other scholars argue that CSR is subject to cost-benefit analysis leading to an optimum level of CSR performance (McWilliams and Siegel, 2001). And finally, others claim that CSR benefits financial performance by attracting more efficiently resources, such as better employees (Turban and Greening, 1997). High CSR performance would reduce a company's risk exposure, reducing its cost of capital and ultimately increasing shareholder return (Godfrey, 2004). The consumer perception of highly socially oriented firms would be improved, differentiating supply and increasing sales (Lev et al., 2010). Waddock and Graves (1997) show that the relationship between financial performance and CSR is positive.

Crifo et al. (2013) come to the conclusion that there exists a quality, as well as quantity, trade-off between the CSR dimensions. Studies differentiating between the impact of the different ESG pillars have proven more reliable than the ones using aggregate measures (Callan and Thomas, 2009), giving a more accurate picture of the different effects of each CSR pillar. An investigation of the existing meta analysis literature reveals that there is some evidence of financial benefits from higher performance in the ESG pillars, however inconsistently through financial and market performance measures. Ortas et al. (2014) conclude that the relationship between financial and CSR pillars performance is nonlinear.

Regarding the environmental pillar, environmental performance shows no significant effect being on average to be already accounted for in market values. However, the relationship is described as complex, depending on factors such as industry risk and company size (Hassel and Semenova, 2013). Some evidence for a weak positive impact of environment score on financial performance seems to exist, according to the meta-analysis of Orlitzky et al. (2003).

For the social pillar, Orlitzky et al. (2003) find that it has a positive impact on performance from an accounting perspective and less from a market perspective. Market value seems to be influenced differently by subcategories of the social pillar, with a positive impact from "community" and "supplier relations" but a negative one from "employee relations" (Hassel and Semenova, 2013). As underlined by Orlitzky and Benjamin (2001), studies suggest that social performance and financial risk are negatively correlated and have a reciprocal influence, more from a market than an accounting risk perspective. Allouche and Laroche (2005), however, suggest that positive financial effects come from reputation ratings rather than social performance.

Findings concerning the benefits of governance performance are mixed. An older non CSR-focussed meta-analysis of studies on governance and financial performance concludes that there exists no significant relationship between governance and financial performance (Dalton et al., 1998). Also newer studies seem to find no relationship (Dalton and Dalton, 2011). However, CSR related studies have found that practices such as increasing CSR responsibility of the board, linking executive pay to ESG measures, and formalising stakeholder engagement processes were associated with higher financial performance (Eccles et al., 2012). Hassel and Semenova (2013) conclude that CSR governance indices have a positive relationship with market value and operating performance.

1.3 CSR and turnaround

So far, research on the effect of CSR in the turnaround or restructuring context has been limited. However, in the intersection of CSR and turnarounds, the so-called "socially responsible restructuring" (SRR) has emerged (Cascio, 1993). For example, the

retrenchment strategies mentioned in the turnaround literature as important component of performance improvement, are criticised as too simplistic and short-sighted and at times even value-destroying. According to Cascio (1993, 2003), employees should be seen as assets rather than costs. He came to this conclusion after investigating the effect of downsizing. Layoffs - in contrast to increased transparency and employee and management engagement - do not generally improve long-term financial performance (Cascio, 2002).

SRR's success in academic literature seems to have been limited due to vagueness of the concept, and an insufficient concreteness and applicability in the management practice (Zu, 2006). Zu (2006) finds in his research that increased socially responsible performance leads to better financial performance in the restructuring process and, vice-versa, that better financial performance leads to higher social performance. Stakeholder relations, such as negotiating with the unions or consulting with the workforce, play an important role in the restructuring process (Edwards, 2004).

Regarding the effects of a more pronounced environmental orientation in the turnaround, no literature could be found.

Corporate governance seems to play a determining role in the restructuring process, where it acts through several channels: e.g. by identifying the right turnaround agents, based on merit rather than politics, or ensuring that managers take the appropriate turnaround decisions, by closely supervising their alignment with the company's owners. A trustworthy and verifiable process, established through corporate governance, instills social and political legitimacy in the restructuring process (Dutz and Vagliasindi, 1999).

2 Theory and hypotheses

This chapter contains the motivation for this study, the structuration of the theoretical approach to turnaround identification, and the hypotheses.

2.1 Value and motivation of the study

In the light of a large amount of studies on the relation between CSR and financial performance, this thesis wants to contribute by exploring the influence CSR might have in turnaround situations. The intention behind investigating CSR in the turnaround setting is that companies with different approaches to CSR might have different business practices, which could then potentially be reflected in a company's value creation. Some "soft" factors, such as management's awareness of employee sentiment, of innovativeness of products and of a good information flow among the stakeholders, should be reflected by the ESG pillars. In difficult turnaround periods, this could become a competitive advantage, influencing a company's performance in the turnaround process. The expectation is that the impact of CSR on financial performance is stronger and, therefore, more apparent in the turnaround context. To the authors best knowledge, the turnaround literature has not yet examined the effects of CSR.

2.2 Change in performance measure

In the literature review it has been shown that different researchers use different performance measures and cut-off points, making it difficult to come to generalisable conclusions of what constitutes a turnaround situation.

The problematic lays not only in inconsistencies of the performance measures, but the arbitrary use of performance thresholds used to identify the turnaround situations. The ROI used by Hambrick and Schecter (1983), Robbins and Pearce II (1992) and Chowdhury and Lang (1996), is related to a threshold of 10% of ROI, which is the average cost of capital for the years under scrutiny. Those authors were interested in a measure that proxies for value creation, defined by the ROI and the average cost of capital. However, the cost of capital changes according to the industry, period of time

and firm specificities.

Moreover, most of the currently applied performance measures are stakeholder specific. This encourages the use of a more comprehensive measure that ecompasses the interest of both shareholders and debtholders and reflects overall value creation of the company.

Therefore, this paper proposes a more objective and company-specific refinement of previous measures, that can be used to identify performance for debtholders as well as shareholders of the company: value creation defined as the difference between ROIC and the weighted average cost of capital (WACC). No other paper or study has yet used ROIC−WACC.

2.3 The importance of value creation

Investors are interested in the return of the asset they purchase, which needs to compensate for the risk taken (Koller et al., 2010). The companies create value by investing the capital raised from the investors at a rate higher than the respective cost of capital. The higher the growth rate and the return on the capital invested, the more value is created by the firm. Following an approach similar to that of Hambrick and Schecter (1983), Robbins and Pearce II (1992) and Chowdhury and Lang (1996), but going a step further in the analysis of the value creation of the firm, in this paper the choice of the performance measure will fall on the ROIC, which is directly related to the free cash flow of the company, that proxies for value creation for both equity and debt holders (Koller et al., 2010).

The ROIC is generally defined as:

$$ROIC = \frac{Net\,Operating\,Profit\,Less\,Adjusted\,Tax}{Invested\,Capital} \tag{1}$$

As explained in Koller et al. (2010), the cost of capital is the opportunity cost the companies face in order to invest in a business instead of another with a similar risk. Companies decide whether to invest or not in a project according to its expected rate of return; if it is larger than the cost of capital, the project will create future positive cash

flows, otherwise the project will not be profitable. The Weighted Average Cost of Capital (WACC) includes the required return to both equity and debt holders, proportional to the capital structure of the company:

$$WACC = r_E \times \frac{Equity}{Equity + Debt} + r_D \times (1 - Tax_m) \times \frac{Debt}{Equity + Debt} \tag{2}$$

Where:

- *Equity* is the market value of equity
- *Debt* is the book value of debt
- r_D is the cost of debt
- Tax_m is the marginal tax rate
- r_E is the cost of equity and is calculated with the Capital Asset Pricing Model (CAPM)

$$r_E = r_f + \beta(r_m - r_f) \tag{3}$$

Where:

- β is the covariance of the company's stock price with market over the variance of the market
- $r_m - r_f$ is the difference between the market's expected return and the risk-free rate

The company is considered to create value every time its ROIC is larger than its WACC. Therefore, every time Equation 1 $\geq$ Equation 2, the company creates value or is value-creation neutral, while every time Equation 1 $<$ Equation 2, the company destroys value.

2.4 Hypotheses

Since CSR performance is defined in respect to best practices in the fields of environment, society and governance, it can be hypothesised that this should also be reflected in the quality of the business practices of the firm. Therefore, companies that show higher

ratings in any of the three ESG pillars would be expected to be more likely to succeed in turning around, both in the short- and in the long-term. As companies would be able to satisfy minimum performance quicker with their best practices and operate more efficiently in the long-term, they are also expected to restore the path towards value creation more rapidly. Some of the literature's findings on the effects of the ESG pillars are supporting these hypotheses. Orlitzky et al. (2003) find some evidence for a weak positive relation between environmental and financial performance. This relationship might become more visible in the turnaround situation, driven by innovation for new products and increased efficiency (Porter and Kramer, 2006). As demonstrated by Orlitzky et al. (2003), there is a positive impact of social performance on financial performance. More specifically, components of the social pillar, such as "employee satisfaction" (Edmans, 2011) and a better inclusion of the community that surrounds the company in the decision process (Hassel and Semenova, 2013) have been associated with better financial performance. Higher governance ratings could help stakeholders in coordinating their actions to engage in a more successful turnaround and create the legitimacy required for the process (Dutz and Vagliasindi, 1999).

he measured effects are investigated both on the short- and the long-term success, leading to the following hypotheses:

Hypothesis 1a *Companies with higher CSR measures are more likely to obtain a short-term turnaround success than those with lower CSR levels.*

1. *High environmental ranking has a positive impact on short-term turnaround success.*
2. *High social ranking has a positive impact on short-term turnaround success.*
3. *High governance ranking has a positive impact on short-term turnaround success.*

Hypothesis 1b *Companies within higher CSR measures are more likely to obtain a long-term turnaround success than those with lower CSR levels.*

1. *High environmental ranking has a positive impact on long-term turnaround success.*
2. *High social ranking has a positive impact on long-term turnaround success.*
3. *High governance ranking has a positive impact on long-term turnaround success.*

CSR is expected to enhance the short-term capabilities of the firm, making it better at increasing its performance after a period of low profitability.

Hypothesis 2 *High levels of CSR are associated with a faster move towards value creation during a turnaround compared to low CSR levels.*

1. *High environmental ranking has a positive impact on value creation.*
2. *High social ranking has a positive impact on value creation.*
3. *High governance ranking has a positive impact on value creation.*

3 Methodology

This chapter contains the description of the turnaround selection procedure, the definition of the variables used as well as the statistical tools that are applied in order to test the hypotheses.

3.1 Selecting turnaround cases

To limit the interferences from the institutional environment on the CSR and performance measures, only companies from the United States are investigated.

The timeline in Table 1 below shows the selection process for turnaround cases, as applied in this paper. A turnaround case arises if the company has two consecutive years (TY-4 and TY-3) of ROIC larger than the cost of capital followed by two consecutive years (TY-2 and TY-1) of ROIC lower than the cost of capital. The subsequent year is called Turnaround Year (TY). The turnaround success is defined as the regaining of a positive ROIC−WACC in TY for the short-term success, and keeping it positive for another two years (until TY+2) for the long-term success. The change in performance is measured as the difference in ROIC minus WACC between TY-1 and TY.

3.2 Testing the hypotheses

Regarding H1 and H2, this study will use a base case scenario, that includes a set of variables that have been used in previous studies in addition to the CSR pillars. A logistic regression is applied for H1 to test the probability of success, since it is a binary

Table 1: Turnaround case selection

The table shows how the turnaround cases are selected, and how short- and long-term success are defined. $\geq$ symbolyses that the ROIC is larger than or equal to the WACC, while $<$ symbolises that the ROIC is smaller than the WACC.

ROIC vs. WACC	TY−4	TY−3	TY−2	TY−1	TY	TY+1	TY+2
Turnaround case	$\geq$	$\geq$	$<$	$<$			
Short-term success					$\geq$		
Long-term success					$\geq$	$\geq$	$\geq$

variable: [0] when ROIC−WACC is smaller than zero, [1] when ROIC−WACC is larger or equal to zero. In the case of H2, a linear regression is applied since the dependent variable is continuous (difference in ROIC−WACC).

The general regression model is the following:

$$Y = \beta_0 + \sum_{i=1}^{n} \beta_i x_i + u_i \tag{4}$$

Where:

- Y is the dependent variable
- β_0 is the intercept
- β_i are the coefficients of the independent variables
- x_i are the independent variables (from i to n)
- u_i is the the error term that captures the effect of the other factors not included among the independent variables

3.3 Variables description

Table 2 on page 27 gives an overview of all the variables that have been used in the regressions in addition to their description below.

3.3.1 Dependent variables

The ROIC is defined as:

$$ROIC = \frac{Net\,Income + (Int\,Exp\,on\,Debt - Int\,Capitalised)(1 - Tax)}{Avg_{n,n-1}(Total\,Capital + ST\,Debt + Current\,Portion\,of\,LT\,Debt)} \quad (5)$$

Where:

- *Int Exp on Debt* are the interest expenses paid on the debt
- *Int Capitalised* are the interest capitalised
- $Avg_{n,n-1}$ is the average between year n and year *n-1*
- *ST Debt* is the short-term debt
- *Current Portion of LT Debt* is the current portion of long-term debt

to match Datastream's definition. The calculation of the WACC is based on the calculations shown in Section 2 on page 2.

With these variables at hand, the change in value creation is defined as:

$$\Delta Value\,Creation = (ROIC - WACC)_{TY} - (ROIC - WACC)_{TY-1} \quad (6)$$

3.3.2 Independent variables

CSR variables

Thomson Reuters' Asset4 is used in this study. It delivers company specific performance ratings on environment, social and governance, and tries to provide an inside view based on the company reports balanced by an outside view from the press, using only publicly available information. Using a large number of indicators (over 250), combined and normalised to generate percentage scores, Thomson Reuters claims that "best management practices" are the benchmarks used in their assessment and that these measures directly relate to long-term shareholder value creation[7].

The descriptions of the three pillars are based on Asset4's own description[8].

[7] See Asset4 for details of the applied methodology at: `http://extranet.datastream.com/data/ASSET4%20ESG/Index.htm`

[8] `https://customers.reuters.com/community/fixedincome/material/ASSET4ESGSCORES.pdf`

1. Environment

The components of the environment pillar are best practices in: emission reduction, resources reduction and product innovation. They are aimed at unveiling the company's relationship with the environment, regarding the concrete actions taken to respect it in terms of process as well as product innovation.

2. Social

The social pillar is composed of: employment quality, health and safety, training and development, diversity and opportunity, human rights, community and product responsibility. These indicators are intended to measure how well the company can improve the trust among its employees, customers and all the other entities that have an interest in how the firm operates.

3. Corporate Governance

The corporate governance pillar uses indicators for: board structure, board function, compensation policy, shareholder rights, and vision & strategy. The variable is focused on showing the relationship between the shareholders and the executives in order to generate the best long-term return to the investors, guiding the executives with incentives and controls.

In this paper, relative performance for each of the three pillars is operationalised by ranking companies based on individual performance and then creating a dummy variable for three equally sized groups of low [1], medium [2] and high performance [3]. The medium group represents the base case in the regression. The CSR measures are taken in the turnaround year itself (TY), as they are assumed to be rather stable variables that do not change substantially throughout the turnaround process.

Turnaround strategies

The classic turnaround strategies that, in the previous literature, have been demonstrated to be significantly associated with the profitability of the firm, have been included to ensure that no important variable has been omitted and the model is complete. In the suggested model, it is assumed that companies start the turnaround process during the first negative year of performance (or year TY-2). The measurement of turnaround strategies only takes place between TY-2 and TY-1. The implicit assumption is that the

strategies have an effect on year TY and throughout the three years (TY until TY+2), depending on the hypothesis. Strategic moves are, therefore, restricted to a specific time frame. This simplification is an assumption that does not account for the impact of the strategies possibly implemented in the years before year TY-2 and after the year TY-1. A benefit, however, of using this procedure is that the performance is measured one year after the strategies, increasing the likelihood that the effect predicts performance and is not due to correlation.

1. Revenue enhancement: R&D and marketing expenses

A company is said to follow a revenue enhancement strategy if it strives to increase the revenues through a stronger marketing campaign or product innovation (Hofer, 1980, Hambrick and Schecter, 1983, Pant, 1991, John et al., 1992). Marketing and R&D intensity have gained prominence also in the CSR literature as control variables (McWilliams and Siegel, 2001). A difference in R&D and marketing spendings relative to revenues between TY-2 and TY-1 will proxy for the effects of a revenue enhancing strategy.

2. Operational restructuring: cost cutting and employee change

Applying Schmuck (2013) approach, here a company's cost restructuring strategy is measured by taking the difference of operating expenses over revenues between TY-2 and TY-1. The one-year percentage change in employees is also used as indicator for operational restructuring (John et al., 1992, Yawson, 2009).

3. Asset restructuring: total asset change, acquisitions and capital expenditures

Here a percentage change in total assets will be taken into account as a proxy for an asset restructuring strategy. In order to better capture the tangible fixed assets component of this strategy, the difference in capital expenditures over total assets between two years is also included as variable (Schmuck, 2013). Acquisitions are divided by total assets as a proxy for an acquisition or divestiture strategy of the firm in year TY-1.

4. Financial restructuring: share issue, dividend cut / omission, total debt change and convertible debt issue

The equity issue strategy is included as share issue divided by revenues in TY-1. The

cut or omission of the dividend payment is measured as percentage difference between TY-2 and TY-1. Debt restructuring is proxied by the yearly difference in total debt over total assets and as a yearly percentage change in the issue of convertible bonds.

5. Managerial restructuring

The impact of general top management change on the company's profitability will be tested with a binary variable. A distinction between a routine and non-routine change of CEO is not made because of the lack of time available for this study.

Control variables

The following factors have been proven significant in determining and mediating CSR performance effects as well as explaining performance in turnaround cases. They are included in the analysis as control variables.

1. Industry

Some authors analysed turnarounds (Robbins and Pearce II, 1992, Kang and Shivdasani, 1997, Smith and Graves, 2005, Schmuck, 2013) only in specific industries in order to avoid the bias that could result from industry-specific behaviour. Others (Gilson, 1989, Pant, 1991, Ofek, 1992, Lai and Sudarsanam, 1997, Whitaker, 1999, Denis and Kruse, 2000, Sudarsanam and Lai, 2001, Yawson, 2009) prefer to study multiple industries simultaneously, adding a variable that controls for industry, or adjusting their dependent variable to industry performance. Controlling for industry allows for a better understanding of the firm's performance by adjusting for industry specific effects. The CSR literature advises such a control as well (Callan and Thomas, 2009). The variable is operationalised here using the first level of the ICB code[9], leading to a differentiation between ten industries.

2. Year

To help separating the firm's idiosyncratic performance from the general economic environment, a dummy variable for each year is introduced.

3. Firm size

Size is proxied by taking the logarithm of revenues in TY.

[9] http://extranet.datastream.com/data/Equity%20indices/documents/Datastream%20Global%20Equity%20Indices%20-%20country%20region%20and%20sector%20codes%20July%202012.doc

Table 2: Variables descriptives

The table shows the variables used for the regressions and the way they have been calculated. TY means Turnaround Year, and the Industries are labelled as follows: (1) is Basic Materials, (2) is Industrials, (3) is Consumer Goods, (4) is Health Care, (5) is Consumer Services, (6) is Telecommunication, (7) is Utility, (8) is Financials, (9) is Technology and (10) is Oil and Gas.

	Dependent Variables
Turnaround Success	
Short-term	[0] $if\,(ROIC - WACC)_{TY} < 0$
	[1] $if\,(ROIC - WACC)_{TY} \geq 0$
Long-term	[0] $if\,(ROIC - WACC)_{TY,TY+1,TY+2} < 0$
	[1] $if\,(ROIC - WACC)_{TY,TY+1,TY+2} \geq 0$
Change in performance	
ROIC−WACC change	$[(ROIC - WACC)_{TY} - (ROIC - WACC)_{TY-1}]$
Change in performance as robustness test	
Tobin's Q change	$Tobin's\,Q_{TY} - Tobin's\,Q_{TY-1}$
	Independent Variables
CSR levels	
Environment	[1] *Low third* ; [2] *Medium third* ; [3] *Top third*
Social	[1] *Low third* ; [2] *Medium third* ; [3] *Top third*
Corporate Governance	[1] *Low third* ; [2] *Medium third* ; [3] *Top third*
Expansion strategies	
Marketing expenses	$[(MktExp/Revenue)_{TY-1} - (MktExp/Revenue)_{TY-2}]$
R&D expenses	$[(R\&DExp/Revenue)_{TY-1} - (R\&DExp/Revenue)_{TY-2}]$
Operational strategies	
Operating expenses change	$[(OpEx/Revenue)_{TY-1} - (OpEx/Revenue)_{TY-2}]$
Employees change	$[(Employees_{TY-1} - Employees_{TY-2})/Employees_{TY-2}]$
Asset strategies	
Total Assets change	$[(Tot\,Assets_{TY-1} - Tot\,Assets_{TY-2})/Tot\,Assets_{TY-2}]$
Acquisitions	$[Acquisitions/Tot\,Assets]_{TY-1}$
Capital exp. change	$[(CapEx/Tot\,Assets)_{TY-1} - (CapEx/Tot\,Assets)_{TY-2}]$
Financial strategies	
Share issue	$[Share\,issue/Revenue]_{TY-1}$
Dividend change	$[(Dividends_{TY-1} - Dividends_{TY-2})/Dividends_{TY-2}]$
Total debt change	$[(Tot\,Debt/Tot\,Assets)_{TY-1} - (Tot\,Debt/Tot\,Assets)_{TY-2}]$
Convertible debt change	$[(ConvDebt_{TY-1} - ConvDebt_{TY-2})/ConvDebt_{TY-2}]$
Managerial strategies	
Management change	[0] *if no change in TY-1* ; [1] *if change in TY-1*
	Control Variables
Year	2002 *to* 2013
Industry	[1] *to* [10]
Severity ranking	[1] *Low third* ; [2] *Medium third* ; [3] *Top third*
Size in TY	*Log(Revenues)*
Firm financial slack	$[Total\,Debt/Market\,Value\,of\,Equity]_{TY}$

4. Firm's financial slack

Financial slack is included as total debt over market value of equity as in Schmuck (2013). Such a measure of financial risk is also defined by (Callan and Thomas, 2009), as one of the most common controls in the CSR literature.

5. Severity of decline

To account for severity of decline, Sudarsanam and Lai (2001) use stock-return ranking, while Morrow jr. et al. (2004) create two groups according to industry average performance. Here the severity of decline is calculated as $[(1+(ROIC-WACC)_{TY-2})\times (1+(ROIC-WACC)_{TY-1})]$. This measure of decline is then ranked, to create three groups of equal size and then included as dummy variables.

3.4 Model robustness

This study is of an exploratory nature and there is a high degree of uncertainty in the model specification, meaning that robustness testing is of great importance for validating the results. More certainty in the measured effects is achieved through the verification of model assumptions and output, by applying a series of different models to verify effect persistency and by looking at subsamples to observe effect consistency. The value of each model is assessed and variable's coefficients and significance put into the context of previous findings.

To ensure a correct model application by respecting statistical model assumptions, homoskedasticity is tested with the Breusch and Pagan (1979) test for all linear regressions, to verify if robust standard errors regression is needed. To insure that multicollinearity is not influencing results, all correlations between variables above/below +/-50% are investigated. The collinearity analysis consists in including and excluding the highly correlated variables and in investigating the effect of this inclusion/exclusion on coefficients and significance of the non-excluded variable. For the CSR pillars, special attention has been applied by verifying any correlations above/below +/-40%.

To investigate whether the effects of CSR persist within a model that contains fewer variables or might show some interaction with the turnaround strategies, a slimmed down version of the base case scenario is applied as robustness test. It contains only

the CSR and control variables: year, industry and size. This model is also replicated with only one of the three ESG pillars at a time, to investigate a possible interaction between the pillars.

To cope with outliers, a robust regression is applied to the linear regression of the performance measure. Outliers are observations whose dependent-variable value is unusual given its value on the predictor variables. This can have several sources, e.g. be a sample peculiarity or indicate a data entry error[10]. The robust regression makes use of Cook's distance to moderate the influence of extreme data points. The regression first performs an initial screening using an estimate of the influence of a data in the application of least squares regressions, to eliminate gross outliers before calculating starting values[11].

Moreover, to investigate whether the effects of the CSR variables are consistent when using market based rather than mainly accounting based measures, the dependent variable of H2 is complemented with change in Tobin's Q, which is defined as:

$$\Delta Tobin's\, Q = \frac{Market\, Cap + Book\, Debt}{Total\, Assets}_{TY} - \frac{Market\, Cap + Book\, Debt}{Total\, Assets}_{TY-1} \tag{7}$$

Where:

- *Market Cap* is the market capitalisation of the company, or market value of equity
- *Book Debt* is the book value of debt

Sub-samples of the starting sample are also investigated for both the linear as well as the logistic regressions, in order to see whether effects are consistent through time and for specific industries. The base case models are repeated specifically for a sample that excludes financial companies and by differentiating between turnaround observations that happen before and after the 2008 financial crisis. The separation between financials and non-financials is motivated by the fact that several financial firms were bailed out by the US government in the 2008 crisis giving an advantage to some companies in the industry that might not be captured within the industry control variable. This

[10] As summarised in: `http://www.ats.ucla.edu/stat/stata/dae/rreg.htm`

[11] It then performs Huber iterations followed by biweight iterations, as applied by the Stata software and suggested by Li (1985)

industry has purposely been excluded in turnaround research because of its peculiarities in Pant (1991), Ofek (1992), Lai and Sudarsanam (1997), Sudarsanam and Lai (2001). It is important to investigate whether turnaround situations are fundamentally different before and after the financial crisis of 2008, as the crisis has been of extraordinary amplitude. To explore this possible difference, H1 and H2 have been repeated for a sample of turnaround situations occurring before and from 2010 (and not 2008 since two years are required to identify the turnaround situation).

4 Data and sample description

This chapter describes the data sources and investigates the sample used in the analysis.

4.1 Sample

All data, besides several manual completions described in Appendix A, and some input for the WACC calculation, has been sourced from Thomson Reuters' Datastream[12]. To calculate the WACC, the risk free rate has been proxied by the 10 year US government bond sourced from Yahoo finance[13]. The yearly market risk premium and the marginal tax rate are obtained from Prof. Damodaran's website[14], while the cost of debt has been calculated as the 10 year US government bond with an assumed premium of 2%.

The Thomson Reuter's Asset4 database contains 1,020 American firms with existing data in 2012 or 2013. This is the starting sample, however, few companies have data that date back until 2002, when the database starts its first ESG recordings. Moreover, not all companies contained the necessary items to calculate the cost of capital, yielding 10,985 years of companies with both ROIC and WACC variables. Considering the year 2002 as the first year that can host a turnaround (TY), the ROIC and the WACC are collected starting from year 1998 (TY-4) in order to have the four consecutive years required for turnaround identification, as specified in Table 1. This sample selection method generated 425 turnaround cases. After dismissing all observations that did not

[12] http://thomsonreuters.com/datastream-professional/

[13] http://finance.yahoo.com/q/hp?s=^TNX

[14] http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/implpr.html

show CSR scores in their respective years, the final sample contains 355 observations, with 27 companies appearing twice. The exclusion of these 70 turnaround cases, due to the missing CSR variables, should not create a sample bias by itself since the criterion of exclusion is not targeting specific companies.

The continuous increase of companies in the Asset4 database raises the probability of having turnaround cases in the more recent years of the dataset compared to the first years, creating a time bias, which is, however, moderated by the "year" control variable. The results of the analysis are sample specific as, so called "sin stocks", related to industries such as tobacco and arms, are excluded from the Asset4 database. The criteria Asset4 uses to include companies in their ratings could impact results, overrepresenting certain types of firms, as the inclusion of new firms is driven by customer demand, which is subjective and dynamic[15].The industry dummy should, however, reduce this effect too.

4.2 Data quality and manipulation

The reliance on a single data source puts limits on controlling for data quality. After an investigation of the suspiciously extreme values in the final data set, it has become apparent that the data set obtained from Datastream is not without errors. On single case basis some errors were corrected or updated after manual verification. However, the observations that did not show a particularly extreme value were not controlled, due to a limited time frame and lack of access to different data sources. Therefore there exists a weak risk of exogeneity in the regressions output.

The companies CSR ratings were stretched one year if missing before 2002 and if missing in 2013 with the aim of increasing sample size. Some variables, mainly the "management change" variable, have been enriched by using the CRSP database and manual research whenever the variable was missing. All data manipulation is described in Appendix A.

Problematic with composite CSR pillar measure, as provided by Asset4, is that

[15] http://extranet.datastream.com/data/ASSET4%20ESG/documents/ASSET4_ESG_Methdology_FAQ_0612.pdf

the inputs are equally weighted, making the assumption that each input has the same importance for the performance measure. Components in environmental measures that relate to an improvement in the use of resources can reduce costs, however the application of more sustainable raw materials can also come at a cost. The authors were unable to find a sufficiently clear explanation of what the exact criteria for the inclusion of the indicators forming the CSR pillars are. This cautions for the interpretation of CSR in the context of the results. As explained in the CSR literature, the definition of CSR depends on perspective. This is also problematic for the creation of single measures such as the social pillar. Employees might prefer to have a job, whereas the community might prefer not to have a polluting factory in their vicinity. An investigation of the indicators that constitute the pillars' scores reveals that the input mainly consists in verifying the reporting and implementation of policies. The score reflects the existence of best practices rather than how well they are implemented. Quantitative performance measures are few and most indicators consist mainly of questions that require yes/no answers.

4.3 Sample descriptives

In order to be able to interpret the forthcoming results and findings, a deeper understanding of the sample is required. The sample descriptives of each variable can be found in Table 14 in Appendix C. Even though the variables are not satisfying the assumption of normal distribution to equal degrees, no further manipulation has been implemented.

It is worthwhile to mention that a successful short-term and long-term turnaround happens in 30% of the short-term observations and in 18% of the long-term observations. On average there is an increase of the ROIC−WACC change of 4.25%, however with a maximum of 85.45% and a minimum of -49.97%.

The interpretation of the correlation between the variables sheds light not only on possible issues regarding collinearity but also on possible interactions (Table 13 in Appendix B shows the correlation table). The correlation between the "size" variable and the low and high CSR category variables shows negative and positive correlations

respectively, indicating that smaller companies have lower CSR scores than bigger companies, as suggested by Hillman and Keim (2001). Correlations above 50% or below -50% appear between "change in number of employees" and "total asset change" variables (77%), "convertible debt" and "total asset change" variables (52%), as well as several CSR variables. The highest correlation for the CSR variables is between "high social" and "high environment" variable (67%), indicating that higher social and environmental ratings often appear simultaneously. The analysis of regression output for these variables requires special attention, as to ensure that collinearity is not producing spurious results.

Assessing the context of the observed turnaround situations, both the year and the industry emerge as important factors in the analysis.

Table 3: Turnaround situations by industry and year

The table shows the total number of turnarounds divided into the twelve different years and the ten different industries, where (1) is Basic Materials, (2) is Industrials, (3) is Consumer Goods, (4) is Health Care, (5) is Consumer Services, (6) is Telecommunication, (7) is Utility, (8) is Financials, (9) is Technology and (10) is Oil and Gas. The table also contains the sum of all the turnarounds per each year, the number of firms per each year (A), and the percentage of turnarounds each year. Row (B) displays the number of firms per each industry in the whole sample and the last row shows the percentage of turnarounds per industry.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	*Sum*	(A)	Sum/(A)
2002	0	1	1	0	2	0	1	0	4	0	*9*	803	1.1
2003	4	11	2	0	4	1	0	6	16	1	*45*	814	5.5
2004	1	6	2	1	3	0	1	3	3	3	*23*	833	2.8
2005	1	1	0	2	1	0	1	2	0	0	*8*	858	0.9
2006	1	2	0	1	0	0	0	7	1	0	*12*	880	1.4
2007	0	1	2	2	2	0	1	5	0	0	*13*	918	1.4
2008	2	3	8	1	5	2	3	9	4	2	*39*	943	4.1
2009	1	0	5	2	8	0	1	21	3	0	*41*	948	4.3
2010	5	16	7	1	9	0	1	29	4	11	*83*	973	8.5
2011	7	16	3	0	4	0	1	4	4	15	*54*	995	5.4
2012	0	3	2	1	0	0	3	0	0	1	*10*	1005	1.0
2013	0	2	0	1	4	1	1	5	0	4	*18*	1015	1.8
Sum	*22*	*62*	*32*	*12*	*42*	*4*	*14*	*91*	*39*	*37*	*355*	*10985*	*3.2*
(B)	54	177	98	80	159	15	46	201	110	80	*1020*		
Sum/(B)	40.7	35.0	32.7	15.0	26.4	26.7	30.4	45.3	35.5	46.3	*34.7*		

Table 3 shows how well the number of turnarounds reflects the two major crisis of the 21st century: the dot-com bubble of 2001 and the financial crisis of 2008. In 2003, the second highest amount of turnarounds is recorded, with 5.5% of companies experiencing

a turnaround, of which 36% are technology firms. The highest amount of turnarounds is observed in the year 2010, with 8.5% of companies in this year experiencing a turnaround, of which 35% are financials. The percentage of single companies that experience a turnaround is very different across industries. Oil & gas (45%), followed by financials (44%) and basic materials (35%) show above average turnaround situation appearance, whereas health care shows a below-average appearance (14%). When analysing the turnaround distribution per industry, one should consider that some companies appear twice in the sample. For example, nine industrial companies appear twice in the turnaround sample, constituting the largest group, followed by the technology industry, which has four companies appearing twice. Even though absolute ratings are not used in the tests, it is important to notice that the means differ not only among the CSR pillars, but also among the different industries within each CSR pillar.

Table 4: CSR scores by industry

The table shows the summary statistics of the ten industries according to the three pillars of the CSR score. The number of observations, mean, standard deviation, minimum and maximum values are shown for each industry, where (1) is Basic Materials, (2) is Industrials, (3) is Consumer Goods, (4) is Health Care, (5) is Consumer Services, (6) is Telecommunication, (7) is Utility, (8) Financials, (9) is Technology and (10) is Oil and Gas.

		Environment				Social				Governance			
Ind.	Obs.	Mean	St. D.	Min.	Max.	Mean	St. D.	Min.	Max.	Mean	St. D.	Min.	Max.
(1)	22	0.537	0.302	0.127	0.910	0.528	0.304	0.082	0.965	0.791	0.113	0.491	0.965
(2)	62	0.461	0.313	0.093	0.949	0.499	0.284	0.078	0.954	0.765	0.134	0.420	0.959
(3)	32	0.484	0.309	0.098	0.949	0.472	0.263	0.077	0.953	0.737	0.145	0.282	0.952
(4)	12	0.241	0.183	0.101	0.631	0.320	0.261	0.077	0.834	0.748	0.146	0.404	0.883
(5)	42	0.327	0.273	0.094	0.916	0.330	0.263	0.049	0.963	0.666	0.192	0.121	0.907
(6)	4	0.632	0.303	0.256	0.902	0.663	0.255	0.428	0.895	0.830	0.091	0.736	0.942
(7)	14	0.545	0.275	0.106	0.911	0.515	0.302	0.057	0.952	0.831	0.122	0.493	0.948
(8)	91	0.291	0.266	0.088	0.925	0.338	0.247	0.038	0.939	0.691	0.145	0.185	0.954
(9)	39	0.442	0.336	0.093	0.964	0.425	0.312	0.059	0.967	0.748	0.203	0.184	0.959
(10)	37	0.363	0.275	0.092	0.937	0.420	0.249	0.068	0.963	0.760	0.126	0.478	0.955

An investigation of the CSR mean score per industry presented in Table 4 shows that there are large disparities between industries. Telecommunications companies have the highest average score in all three CSR pillars, followed by Utilities which have the second highest average score in environment and governance. Consumer Services has the lowest mean for the corporate governance pillar and Health Care shows the lowest average score in environmental and social performance. Industry specific control as

suggested by Callan and Thomas (2009) seems therefore to be required.

Subdividing the companies according to the severity of decline leading to the turnaround situation, an imbalance of industries between the severity groups can be observed. Table 15 shows that telecom and utility firms experience low severity turnaround situations (>70%) whereas consumer goods and technology firms have over 50% of their turnaround situations in the most severe decline group. The average CSR rating per severity groups seems to be relatively stable (see Table 17 in Appendix F).

The following table shows a distribution of turnaround success and performance in the different CSR categories and their respective performance groups.

Table 5: Turnarounds by CSR ranks

The table shows the total number of turnarounds divided into Success and Non-Success in both the short-term and long-term. The table also contains the mean and standard deviation of the variable ROIC−WACC change.

	Short-term		Long-term		Δ ROIC−WACC	
	Success	Non-Success	Success	Non-Success	Mean	St. Dev.
Low Environment	36	82	16	93	0.044	0.124
	30.51%	*69.49%*	*14.68%*	*85.32%*		
Mid Environment	33	86	21	90	0.043	0.149
	27.73%	*72.27%*	*18.92%*	*81.08%*		
High Environment	38	80	22	85	0.041	0.136
	32.20%	*67.80%*	*20.56%*	*79.44%*		
Low Social	31	87	16	92	0.039	0.136
	26.27%	*73.73%*	*14.81%*	*85.19%*		
Mid Social	37	82	19	89	0.058	0.152
	31.09%	*68.91%*	*17.59%*	*82.41%*		
High Social	39	79	24	87	0.030	0.119
	33.05%	*66.95%*	*21.62%*	*78.38%*		
Low Governance	44	74	22	87	0.058	0.140
	37.29%	*62.71%*	*20.18%*	*79.82%*		
Mid Governance	27	92	17	93	0.024	0.129
	22.69%	*77.31%*	*15.45%*	*84.55%*		
High Governance	36	82	20	88	0.046	0.139
	30.51%	*69.49%*	*18.52%*	*81.48%*		
Total per pillar	107	248	59	268		

The dispersion among the performance categories shows that there are, especially in the "low governance" category, many short-term turnaround successes, however the the

amount of successful short-term turnarounds along the governance categories seems not to be linear. In the long-term turnaround success, it is the count of the "high social" variable that is highest. Clearer trends than in the short-term appear in the long-term turnaround situations, where the amount of turnaround successes is increasing with performance for the social and environmental variable. The average performance change is rather stable across rankings in the environmental variable but shows larger differences for the social and governance variables.

4.4 Analysis of the turnaround strategies variance among CSR levels

CSR performance might justify a different approach in many of the corporate life decisions, for instance, companies with a higher social score might be prompted to engage in a more responsible way in the employee layoff activity in the case of distress. To understand better if there would be an interaction between the turnaround strategies and the CSR variables, an analysis of variance (ANOVA) test is applied. The significant differences have to be analysed together with Table 16 in Appendix E, which shows turnaround strategies' mean and standard deviation by industry.

Table 6: ANOVA: Acquisitions variable by Environmental rank

The table shows the Mean, Standard Deviation and Frequency for each of the three rankings of the Environmental score within the Acquisitions strategy. The table also shows the significance of the differences among subgroups Low&Medium, Low&High and Medium&High of the Environmental score in the case of Acquisitions.

"Acquisitions" by:	Mean	St. Dev.	Freq.	Diff. in Mean	Low Env.	Mid Env.
Low Environment	0.0177	0.0465	118	Mid Env.	0.006	
Mid Environment	0.0236	0.0659	119		[1.000]	
High Environment	0.0094	0.0258	118	High Env.	-0.008	-0.014
Overall	0.0169	0.0491	355		[0.583]	[0.078*]

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

As shown in Table 6 companies with high environmental rating are investing significantly less in new acquisitions of other companies compared to companies with a medium environmental score. Financial institutions are, however, relatively over-represented in

the "low environment" category (46 in low, 28 in medium and 17 in high environment) and show the lowest mean per industry (0.004 financials acquisition mean against a sample average of 0.017) with a low standard deviation.

Tables 7 shows that, on average, companies with a high environmental score raise significantly less equity than companies with a low score in the turnaround setting.

Table 7: ANOVA: Share issue variable by Environmental rank

The table shows the Mean, Standard Deviation and Frequency for each of the three rankings of the Environmental score within the Share issue strategy. The table also shows the significance of the differences among subgroups Low&Medium, Low&High and Medium&High of the Environmental score in the case of Share issue.

"Share issue" by:	Mean	St. Dev.	Freq.	Diff. in Mean	Low Env.	Mid Env.
Low Environment	0.1385	0.5090	118	Mid Env.	-0.058	
Mid Environment	0.0802	0.2225	119		[0.517]	
High Environment	0.0425	0.1225	118	High Env.	-0.096	-0.038
Overall	0.0870	0.3296	355		[0.076*]	[1.000]

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

Table 8 shows that this relationship is even stronger when companies have a high and medium social score; in that case the firms raise significantly less capital than companies with low scores.

Table 8: ANOVA: Share issue variable by Social rank

The table shows the Mean, Standard Deviation and Frequency for each of the three rankings of the Social score within the Share issue strategy. The table also shows the significance of the differences among subgroups Low&Medium, Low&High and Medium&High of the Social score in the case of Share issue.

"Share issue" by:	Mean	St. Dev.	Freq.	Diff. in Mean	Low Soc.	Mid Soc.
Low Social	0.1846	0.5398	118	Mid Soc.	-0.150	
Mid Social	0.0343	0.0824	119		[0.001***]	
High Social	0.0427	0.1267	118	High Soc.	-0.142	0.008
Overall	0.0870	0.3296	355		[0.002***]	[1.000]

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

This similar behaviour of environment and social pillars is not surprising because of their high correlation. Again, financials show the second highest industry average for

the "share issue" strategy (0.20 against a sample mean of 0.08).

Table 9: ANOVA: Capital Expenditures variable by Social rank

The table shows the Mean, Standard Deviation and Frequency for each of the three rankings of the Social score within the Asset restucturing strategy. The table also shows the significance of the differences among subgroups Low&Medium, Low&High and Medium&High of the Social score in the case of Asset restructuring.

"Capital Exp." by:	Mean	St. Dev.	Freq.	Diff. in Mean	Low Soc.	Mid Soc.
Low Social	-0.0031	0.0457	118	Mid Soc.	-0.014	
Mid Social	-0.0167	0.0514	119		[0.052*]	
High Social	-0.0106	0.0324	118	High Soc.	-0.007	0.006
Overall	-0.0101	0.0441	355		[0.577]	[0.841]

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

The approach to asset restructuring in the form of change in capital expenditure to total assets, as shown in Table 9, is different among the subgroups of social score, especially between the medium and the low score. Companies with medium social score do a significant larger reduction of the capital expenditures over total assets than companies with a low social score.

Table 10: ANOVA: Debt restructuring variable by Social rank

The table shows the Mean, Standard Deviation and Frequency for each of the three rankings of the Social score within the Debt restructuring strategy. The table also shows the significance of the differences among subgroups Low&Medium, Low&High and Medium&High of the Social score in the case of Debt restructuring.

"Debt restruct." by:	Mean	St. Dev.	Freq.	Diff. in Mean	Low Soc.	Mid Soc.
Low Social	0.0115	0.0731	118	Mid Soc.	-0.002	
Mid Social	0.0092	0.0485	119		[1.000]	
High Social	-0.0084	0.0458	118	High Soc.	-0.020	-0.018
Overall	0.0041	0.0577	355		[0.023**]	[0.055*]

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

Table 10 shows that companies with high social score raise less debt, than companies with low and with medium social score. In this sample high socially ranked companies actually reduce their debt instead of raising it.

5 Results and discussion

In this chapter the results[16] *of the hypotheses tests are discussed, including their interpretation and robustness tests.*

5.1 Hypothesis 1 & 2

The coefficients of the logistic regressions of **H1** are reported as log-odds units in the tables, but as likelihood of success (of obtaining a 1 and not a 0 in a binary variable) in the text, to be more easily interpreted by the reader. Log-odds can be transformed to odds or likelihood of success. To transform log-odds into simple odds, the exponential of the log-odd - i.e. $e^{(coef.)}$ - needs to be taken. To transform log-odds into a likelihood of success: $e^{(coef.)}/(1 + e^{(coef.)})$. For likelihood of success, 50% represents an equally likely chance of succeeding or failing, percentages below 50% show that an increase in the variable reduces the likelihood of success, whereas percentages above 50% reflects a higher likelihood of success.

5.1.1 Hypothesis 1a: short-term turnaround success

The regressions' results in Table 11 on page 42 show that **H1a-1** needs to be rejected on the grounds of evidence that lower environmental performance of companies is associated with succeeding in a turnaround (67%*).

Companies that compete on price instead of quality should get a lower environmental rating from Asset4. They might be better at reorienting their processes at a lower cost and succeeding in a short-term turnaround than their highly environmentally ranked competitors. The environmental pillars' components can give some support in favour of such a hypothesis. Many indicators that form the "emission reduction" component of the environmental pillar go beyond using less resources, and include other complex aspects such as biodiversity. They have more to do with sustainable behaviour than efficiency gains of environmental sustainability performance, that have been related to increased financial performance (Molina-Azorín et al., 2009), possibly resulting in a cost for the company in the short-term.

[16]Where: * means 10% significance, ** means 5% significance, and *** means 1% significance.

Relative performance along the social score seems to reveal little linkage with the chance of succeeding in the short-term in a turnaround. Therefore **H1a-2** needs to be rejected.

The social ranking might not be related to turnaround success in the short-term. Another explanation could be that costs and benefits of the social pillar balance each other out or that there exists an efficient level of social performance relative to different stages of the companies life-cycle (McWilliams and Siegel, 2001). Allouche and Laroche (2005) show that market financial performance is explained by the company's reputation rather than by the social performance.

There is strong evidence that companies with a low governance score are associated with a significantly better chance of performing a successful short-term turnaround (76%*** likelihood of success). Everything else kept equal, companies with the lowest governance performance would have a likelihood of turnaround success more than three times higher than companies with a medium governance score.

Therefore, **H1a-3** has to be rejected in favor of an effect that goes opposite to the one hypothesised. A higher governance score seems to be a cost or burden in the turnaround situations of this sample. This finding could be explained along two main arguments. The first considers that the governance measure applied in this paper is not a substantive measure of sustainable governance performance as it was hypothesised, but rather reflects the formal complexity of the governance processes. The amount of bureaucracy related to the governance could come at a cost for companies that need to focus their resources on the most profitable operations and put them at a disadvantage to the companies that have simpler governance processes. A second argument would consider the governance performance in the sense of Friedman (1970), who stated that companies should rather focus on enhancing financial returns for their shareholders than losing value by focussing on other issues.

These findings are somewhat in contrast to the more recent literature. The governance pillar's indicators, such as "board's function" and "structure", are mainly related to diversity and independence of the board. There exists weak evidence that diversity has benefits for financial performance, but there is no evidence that board independence

does (Erhardt et al., 2003, Dalton et al., 1998, Bhagat and Black, 2002). When related to performance, "compensation policies" have shown positive effects (Gerhart and Milkovich, 1990), while "shareholder rights" show a mixed picture for the different components (Agrawal and Knoeber, 1996). Applying agency theory (Hill and Jones, 1992) in this context, one could establish that in this extreme case the short-term benefits of transparency, that reduces the conflict of interest, is smaller than the costs of sustaining transparency.

The collinearity analysis of **H1a** reveals that whenever "size", the social pillar and "high governance" are excluded from the regression, "high environment" is significant (65%*), whereas "low environment" is not anymore. By excluding the control variable "size", however, there is a risk of misspecification of the model. Whenever "size" is kept, "high environment" loses its significance and "low environment" remains significant, with companies being more than twice as likely to emerge successfully from the turnaround than the base case consisting of a medium environmental score.

Among the turnaround strategies, only two have proven to be significant, namely the "change in R&D expenditures" resulting in a strongly negative coefficient that translates into an almost 0%* likelihood of success, and the "share issue" (87%**), with a positive coefficient. In general, larger companies appear to fare better as "size" shows a positive significant effect (56%*). The "R&D" strategy has a coefficient which is in contrast with what has been postulated in the previous literature, being highly negative. This suggests that among the short-term turnaround situations under analysis, the severity of the distress favours companies that focus on firefighting strategies instead of revenue enhancing ones, so those strategies that help keeping as much liquidity as possible at the firm's disposal rather than those that require an investment. The "R&D" variable's weak significance warrants, however, caution in its interpretation. "Share issue" has, as expected, a positive short-term impact on the turnaround success as it may give an opportunity to the management to face operational and financial difficulties with new capital. The positive effect of "size" has also been found by Pant (1991). Larger companies seem to be better equipped at facing troubled times and succeed in the turnaround.

Table 11: Regression results

The table shows the results from the base-case regressions done for H1 and H2 and two robustness regressions. The logit regressions answer H1a and H1b, where [0] is turnaround failure and [1] turnaround success, while the multivariate regression answers H2, where the dependent variable is the change in ROIC−WACC. The robustness regressions are a robust of outliers OLS regression of ROIC−WACC change and of Tobin's Q change.

	Base Case Models			*Robustness Models*	
	Logit Regr.		OLS Regr.	Robust OLS Regr.	OLS Regr.
Variables	ST Success	LT Success	Δ(ROIC−WACC)	Δ(ROIC−WACC)	ΔTobin's Q
Observations	*355*	*317*	*355*	*355*	*355*
Log-likelihood	*-175.1*	*-118.3*	-	-	-
Adjusted $-R^2$	-	-	*0.151*	n.a.†	*0.282*
Prob $> \chi^2$ *or F*	*0.003*	*0.000*	*0.000*	*0.000*	*0.000*
Low Environment	**0.723***	0.490	0.007	0.007	0.014
High Environment	0.144	0.088	0.001	-0.001	0.047
Low Social	-0.403	0.002	-0.007	-0.005	-0.011
High Social	0.245	0.341	-0.030	0.007	0.003
Low Governance	**1.135****	0.605	**0.041****	-0.000	0.000
High Governance	-0.080	-0.221	0.018	**-0.016***	0.004
R&D expenses	**-29.066***	**-39.902****	-0.255	**-0.394*****	0.061
Marketing expenses	-4.184	-5.154	**-0.364***	**-0.440*****	**0.735***
Operating expenses	-0.836	0.955	0.029	**0.058*****	0.084
Employees	-0.252	-0.891	-0.011	0.023	**-0.241***
Total Assets change	-0.627	-0.384	-0.022	-0.016	0.085
Acquisitions	5.088	5.147	-0.137	-0.041	0.003
Capital expenditures	-4.263	-2.851	**-0.252***	-0.050	0.487
Share issue	**1.935****	0.632	**0.059*****	**0.024****	0.002
Dividend incr./decr.	-0.584	**-1.286***	0.002	-0.002	-0.031
Debt issue/reduction	1.811	2.152	**0.268***	0.067	0.084
Convertible debt	-0.653	-0.577	0.002	0.006	0.023
CEO change	-0.576	-0.288	0.006	-0.011	-0.066
Size	**0.232***	0.303	0.011	0.004	**-0.045****
Firm slack	-0.024	-0.010	0.000	**-0.001***	-0.001
Intercept	**-5.687****	**-7.893****	**-0.290****	-0.074	0.303

* p<0.10, ** p<0.05, *** p<0.01

† Not given for robust regression

5.1.2 Hypothesis 1b: long-term turnaround success

When investigating long-term success, the results do not provide sufficient evidence that the CSR variables have a significant influence within the long-term success of a company. Therefore, all hypothesis must be rejected.

This stands somehow in contrast to the findings of Table 5 in descriptive, where the amount of turnaround successes is increasing with a higher ranking for the environmental and social pillar. The regression results imply either that the here-applied CSR measure is simply not linked with the long-term performance, or that its benefits equal its costs. Companies might rather be following collective trends and conforming with requirements, CSR not being a competitive advantage, at least not in the long-term turnaround success. The effect of the governance pillar could dissipate in the long-run as companies are less impacted by the effectiveness of their board than by the macroeconomic climate, operating specific issues or other variables.

As in the short-run, also in the long-run the social performance could evolve along an equilibrium specific to the companies' situation, such as a marketing differentiation strategy (Crifo et al., 2013). A high correlation between the "high environment" and "high social" variables, might indicate that these measures, which represent sustainability for customers and stakeholders, are commonly found together in companies, and possibly represent a specific strategy. "Product innovation" of the environmental pillar includes many sustainability principles, such as labelled wood, that may increase products' prices. In this sense, sustainability might be rather a cost-neutral response than a proactive strategy in the long-run. Even though companies with a "high environment" and "high social" score showed a larger amount of turnarounds success, as shown in Table 5 in Section 4, a difference in turnaround performance is, however, not discernable using the CSR measure in the regression. Other factors, therefore, appear to account for the successful long-term turnarounds.

On the turnaround strategies side, the "change in R&D expenditures" seems to have a significant negative impact on the turnaround success in the long-term, with again a probability of success of around 0%**. Increasing dividends has a significant negative impact on long-term turnaround success with a likelihood of success of around 22%*.

After an investigation of collinearity, excluding CSR variables such as "high social" or "high environment", "size" was again positively related to the possibility of succeeding in the long-term (58%*).

More surprising than in the short-term case, "R&D expenses" is again negative and even with a higher significance. Both short- and long-term results contradict the results of Pant (1991), who found a significant positive relation between R&D over revenues and ROA. The "dividend cut" strategy predicts long-term turnaround success, a result many authors were hypothesising but unable to prove (John et al., 1992, Sudarsanam and Lai, 2001, Yawson, 2009, Schmuck, 2013). The longer time frame might have helped to mediate the effect better. The collinearity investigation relative to "size", gives evidence for a strong link between the size of a company and its CSR performance.

5.1.3 Hypothesis 2: turnaround value creation

Neither the environmental nor the social variable seem to be associated with a difference in the speed at which companies create or destroy value. The "low governance" variable shows a coefficient of 0.041**, positively impacting the performance change. An increase of ROIC−WACC of 4.1% might seem high. However, considering a standard deviation of 13.6% and a range of -50% to 85.4%, as shown in Table 14 in Appendix C, this magnitude appears more moderate.

As neither environmental nor social pillars show significant impact on change in performance, hypothesis **H2-1** and **H2-2** have to be rejected.

H2-3 needs to be rejected as well, as the effect observed is opposite to the hypothesised one. Companies are not only more likely to succeed in a turnaround as found in **H1**, but also quicker at increasing their performance. The higher amount of information transfer between the board, shareholders and managers, coming from a higher governance performance, could cause delays in the implementation of value-enhancing turnaround strategies in a performance decline period. The managers possibly invest more time into communication rather than implementing new performance enhancing strategies. **H1** and **H2** are related, this finding is not surprising but gives an insight into the speed at which companies can improve their performance.

Concerning the turnaround strategies, in this setting the "marketing expenses change" is negatively impacting (-0.364*) the value creation of the firm. The reduction of the capital expenditures relative to total assets increase value creation (-0.252*). The "debt increase" (0.268*) and "share issue" (0.059***) variables have a positive impact on the pace at which companies create value.

Companies seem more focused on increasing liquidity than on reorienting the firm's image with marketing campaigns. This result confirms Hambrick and Schecter (1983) finding that the reduction of marketing expenses positively impacts the change in ROI. Firms in a downturn need to refocus on their core business. Similar results were obtained by Schmuck (2013), who found positive significant impact of the reduction of capital expenditures over total assets on turnaround success. The results obtained underline the urgent need of fresh cash for companies that want to restore the path towards value creation. Companies with the most severe decline in the two years previous the turnaround increase performance more than the others. This can be expected as these companies start increasing their performance from very low levels, making it relatively more likely for them to increase it.

5.1.4 Robustness of results

The following describes the results of the different robustness tests.

1. Robust regression

Whenever **H2** is implemented robust of outliers, only the "high governance" variable is significant and negative (-0.016*). This result is in line with the observation that lower governance score firms have a better performance increase.

The relative increase in R&D and marketing expenses is significant (with coefficients: -0.394*** and -0.440*** respectively) and has a negative impact on change in value creation. Increase in operating expenses over revenues becomes significant and has a positive coefficient (0.058***), contrary to the expected effect of a cost cutting strategy.

2. Tobin's Q

With an alternative measure of performance as robustness test, replacing ROIC−WACC change with Tobin's Q change for **H2**, no significant influence was found for the CSR

Table 12: Additional robustness regressions' results

The table shows the results from the regressions done for H1 and H2 in a sample from which the financial firms have been excluded and for the pre- and post-crisis samples, where the crisis is considered to show it's impact on year 2010. Column (1) shows the results of the logit regression of short-term turnaround success that answers H1a, column (2) shows the results of the logit regression of long-term turnaround success that answers H1b, while column (3) shows the results of the multivariate regression that answers H2, where the dependent variable is the change in ROIC−WACC.

	Without financial industry			*Pre-crisis (2002-2009)*			*Post-crisis (2010-2013)*		
Variables	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Observations	*264*	*231*	*264*	*190*	*181*	*190*	*161*	*133*	*165*
Log-likelihood	*-132.298*	*-97.021*	-	*-75.547*	*-69.690*	-	*-82.171*	*-35.790*	-
Adjusted $-R^2$	-	-	*0.150*	-	-	*0.127*	-	-	*0.221*
Prob $> \chi^2$ *or F*	*0.001*	*0.024*	*0.000*	*0.000*	*0.000*	*0.000*	*0.208*	*0.205*	*0.000*
Low Environment	0.556	0.465	0.012	0.458	-0.132	0.013	**1.227***	**2.581***	0.021
High Environment	0.115	-0.031	-0.004	-0.023	-0.883	-0.011	0.127	1.433	0.003
Low Social	-0.591	-0.539	-0.010	-0.730	-0.056	-0.010	-0.895	-0.742	-0.025
High Social	0.056	-0.145	-0.035	0.229	0.401	-0.063	-0.148	-0.633	-0.021
Low Governance	**1.359*****	**0.861***	**0.051****	**1.563*****	**1.260****	0.039	0.848	-1.024	0.033
High Governance	-0.021	-0.209	0.026	-0.319	0.229	0.037	0.120	-0.714	0.010
R&D expenses	-15.509	-14.849	0.089	-33.183	-29.002	-0.306	-7.137	-142.855	-0.658
Marketing expenses	-7.788	-4.092	**-0.370***	-6.812	-8.509	-0.010	-3.492	4.503	**-0.462****
Operating expenses	-7.455	-8.122	**-0.161****	-1.856	0.335	0.027	-0.501	2.994	0.022
Employees	0.119	-1.851	-0.023	-2.176	0.715	-0.100	1.700	-1.142	0.122
Total Assets change	-1.108	-0.142	-0.030	-0.608	-1.486	0.038	-0.291	0.610	**-0.149****
Acquisitions	3.256	5.871	-0.123	7.697	0.914	-0.138	2.253	25.598	-0.178
Capital expenditures	-7.744	-6.133	**-0.569*****	-2.377	-3.849	0.124	-5.630	-3.208	**-0.701*****
Share issue	4.941	0.054	**0.057****	**3.987*****	1.089	**0.062****	-1.672	0.963	0.030
Dividend incr./decr.	-0.318	-1.108	-0.000	-1.353	-0.477	0.016	-0.263	-1.572	-0.037
Debt issue/reduction	1.056	3.075	**0.345***	6.139	4.925	**0.479***	-3.373	-9.247	0.154
Convertible debt	-0.688	-0.739	0.006	-0.995	-0.505	-0.009	-1.282	-0.391	-0.011
CEO change	-0.167	0.281	0.034	-1.010	-0.134	0.001	0.758	0	0.059
Size	0.200	0.391	0.013	0.362	0.333	**0.023***	0.158	0.702	0.009
Firm slack	-0.011	-0.012	0.000	-0.016	-0.010	0.001	**-1.312****	-1.810	-0.017
Intercept	-4.959	-9.034	**-0.316****	**-8.647***	**-8.490***	**-0.555****	-2.607	-13.990	-0.129

* p<0.10, ** p<0.05, *** p<0.01

variables. Tobin's Q change being a more forward looking-market related measure, rather than the backwards looking-accounting related measure of ROIC, one might conclude that the market is not putting a premium or discount on different levels of CSR scores in the short-run. Other turnaround strategies, are however significant. Employee change shows a negative coefficient (-0.241*) and the change in marketing expenses relative to revenues has a positive impact (0.735*) on Tobin's Q change. This could mean that the market might value positively new marketing campaigns that aim at revitalising the firm's image. Excluding the "total assets" variable, convertible debt shows significance with a coefficient of 0.039**. In contrast to the findings in **H1** and **H2**, the market

seems to penalise larger companies as the coefficient is a negative -0.045**.

3. Non-financials sample

The sample has many observations of financial companies (91 out of 355 turnaround cases). Confirming Pant (1991), Ofek (1992), Lai and Sudarsanam (1997) and Sudarsanam and Lai (2001) judgment of the financial industry as being too peculiar for turnaround analysis, and considering that the US government intervened heavily in this industry[17], **H1** and **H2** have been repeated on a sample that excludes all financials. The "low governance" variable is again significant with a likelihood of success of 80%*** for **H1a** (short-term success) and at 70%* for **H1b** (long-term success). For **H2** the "low governance" variable is again significant with a positive coefficient (0.05**). This indicates that a low governance score appears to be a competitive advantage also in the long-term for non-financials. The statistical significance is however low for **H1b**. The CSR variables effects for **H1a** and **H2** in this test reveal a certain consistency for the subsample relative to the base case findings.

For **H2**, an increase in relative marketing expenses (-3.70*) and operating costs (-0.161**) is associated with a negative influence on change in value creation. This suggests a positive effect of cost cutting strategies. The asset retrenchment strategy, proxied by the difference in capital expenditures over total assets, has a positive impact on the change in performance when these expenditures are reduced (-0.569***). Share and debt issue, as in the base-case model, have a positive impact (with a coefficient of 0.057** and 0.345* respectively).

4. Pre- and post- 2008 crisis sample

H1 is applied to the pre- and post-crisis samples. In the pre-crisis setting, "low governance" seems to impact the likelihood of short-term and long-term turnaround success (83%*** and 78%** respectively), while in the post-crisis setting, low environmental performance impacts both short- (77%*) and long-term success (93%*).

Within the application of **H2**, there are significant results regarding CSR only after a collinearity investigation. Before the crisis, "high social" becomes significant (with a

[17] `http://www.nytimes.com/packages/html/national/200904_CREDITCRISIS/recipients.html`

likelihood of success of 48%*) when excluding "high environment" and, in the post-crisis sample, "low governance" becomes significant (51%*), when excluding "high social" or "low governance".

These results are contrary to the previous findings but need to be analysed with great caution as the sample size has become significantly smaller compared to the larger sample (190 pre-crisis and 165 post-crisis). As shown in the model quality analysis in Section 5.1.5 on page 49, the separation of the sample applied here results in some models having an overall significance that is insufficient, more specifically for the success test (**H1a** and **H1b**) in the post crisis-sample. Therefore, the authors refrain from interpreting the coefficients and their change, and mentioning the findings of the collinearity analysis for **H1**.

Share issue seems to positively impact short-term turnaround success only in the pre-crisis sample (3.987***). For **H2**, there seems to be a difference between the approaches to restructuring in the pre- and post-crisis periods, suggesting that until the crisis it was more beneficial to increase cash with share or debt issue (0.062** and 0.479* respectively), while after the crisis it seems more beneficial to decrease costs and asset: coefficients of -0.462** for marketing expenses, -0.149** for the change in total assets and -0.701*** for the change in capital expenditures over total assets.

5. Model Reduction

Another robustness test consists of a slimmed down version of the base case scenario, where the turnaround strategies and turnaround specific controls such as financial slack and severity have been omitted. The reduced model uses only the CSR variables and the most common controls, which are "year", "industry" and "size". As in the base case, **H1a** (short-term success) shows again a significant "low environment" (64%*) and "low governance" (73%***) variables, whereas **H1b** (long-term success) has no significance for the CSR variables. For **H2** (change in value creation), "low governance" with a coefficient of 0.04** and -0.04* for "high social" are significant. These results hold when repeating the regressions individually for each of the three ESG factors as shown in Table 18 in Appendix G.

For **H2**, obtaining a high social ranking might put a burden on the firm and reduce

the speed at which performance is increased, similarly to what was put forward for the other CSR pillars. Significance of the effect is, however, low.

This creation of smaller, non-turnaround strategy related, performance models shows that there is little statistical interaction between the CSR and the turnaround strategy variables. This is in line with the observations of limited difference in strategy application along CSR performance of the ANOVA test in Section 4.4. It seems that the more important variables in the analysis of the effects of CSR in turnarounds are the control for industry, year and size. The fact that the single ESG pillars show the same results when being applied alone in the regression would lead to the conclusion that there is no statistical interaction between them, in contrast to the findings of Crifo et al. (2013). Overall the inclusion of the turnaround strategy variables in the model, as in the base case, seems not to be necessary.

5.1.5 Model validity and quality

Most models show probabilities for the χ^2 value for the logistic regressions, and F-value for the linear regression, well below 5%, suggesting a sufficient level of overall model fit. Only in the robustness analysis of the post-crisis samples, the entire validity of the logistic model is questionable. Both **H1a** (short-term success) and **H1b** (long-term success) in the post-crisis sample show a χ^2 above 20%. These models are therefore not showing sufficient proof that the variables coefficients are different from zero.

The explanatory power of the models is deceiving in respect to the amount of variables included, as little of the variation in the models is explained by those variables. The model in its hypothesised or base-case setting, seems over-specified as was observed in the analysis of models with fewer variables. Especially with regards to the logistic regression, the model's explanatory power does not improve much when comparing the likelihood of the base case model and the reduced model (that only contains the CSR variables and "year", "industry" and "size" as control). For **H1a** (short-term success), the logarithmic likelihood is -175[18] for the base case and -189 for the shorter version. For **H1b** (long-term success), it is -118 for the base-case model against -127 for the

[18]A value closer to zero representing higher explanatory power

smaller model. These improvements of explanatory power are relatively weak. For **H2** (performance change), the *adjusted-*R^2 sees a larger improvement, increasing from 0.073 for the smaller model to 0.151 for the base-case model. The improvement stems, however, largely from the inclusion of the "severity" control variable. Overall these findings also reflect the high complexity of the turnaround as well as the CSR variable.

6 Conclusions

The effects are different for the environmental, social and governance variables. The data presented here show no observable impact of the social pillar on turnaround success - neither in the short- nor in the long-term - and on the change in performance. This suggests that the social rating here considered has no explanatory power for financial performance or that companies might perform along a cost-benefit equilibrium, where the social rating is rather an answer to industry practices or where the company is strategically positioning itself in the market, however, not obtaining a measurable advantage in value creation.

There is weak evidence that a low environmental CSR rating can be beneficial for the turnaround short-term success. Companies with a low environmental performance rating might be more cost conscious and flexible in the short-term. This effect is however dissipating in the longer-run.

The most noticeable and counterintuitive impact stems from the governance variable. Low governance ratings seem to be an important factor for explaining performance increase and short-term success of turnarounds. The long-term success effect of the governance pillar becomes more noticeable when excluding financials from the sample. In the light of the governance variable's components, lower governance rating could be related to a reduced reporting burden and potentially a higher flexibility, helping to reestablish value creation more quickly and avoiding subpar financial performance.

A series of robustness tests helps understanding the CSR variables effects along Tobin's Q value measure, time, subsamples and the interaction between the CSR variables and the turnaround strategies. The market perception measure (change in Tobin's Q)

does not seem to value CSR ratings in the turnaround in the short-term. The effect among subsamples gives mixed evidence especially with regard to samples with different time horizons. Some turnaround strategy variables have shown significance, especially those regarding a cost reduction as well as an injection of fresh capital to sustain the company in a delicate moment of its life. There seems to be no measurable interaction between the included turnaround strategy variables and controls and the CSR variables.

Arguably, there appears to be a pattern that would suggest that certain lower CSR ratings might give an advantage in turnaround situations. This is in contrast to what previous studies have found outside of the turnaround context. The findings may be a result of the chosen methodology but may also indicate that there could exist a turnaround-specific dynamic of CSR ratings.

7 Limitations and future research

This thesis faces a number of limitations that offer opportunities for future research but also invite to careful interpretation of the data and of their applicability in other situations. The exploratory nature of this paper suggests care when comparing the results with other studies' conclusions, not only because of a different approach to measuring turnarounds success and value creation. The results should not be taken outside of their context of value creation within the firm, measured in financial terms. It would be useful to apply the value creation approach to different datasets and verify the findings validity. The turnaround strategies discussed here should also be corroborated with further analysis and eventually integrated with other strategies that have not been tested in this context. The analysis in this thesis can be considered only indicative as the directional effects between CSR ratings and turnaround performance are not fully proven and turnaround performance could also be a driver of CSR ratings. The assumption was made that the CSR ratings are constant throughout the turnaround process. The possibility that companies adapt their CSR behaviour, especially in respect to governance, in anticipation or throughout the turnaround could be subject of future research.

The authors acknowledge that the inclusion of a large number of variables reduced the level of detail that could be spent on the analysis of each variable. The statistical transformation of variables to obtain distributions that resemble a normal standard distribution could have also improved the regressions output. The concept of turnaround as well as CSR were more multi-dimensional than initially anticipated and effects are generally difficult to uncover - e.g. the possible non-linearity of CSR effects could not be sufficiently covered. The assumption that the turnaround strategies take effect in exactly the same time frame is simplistic and might require further differentiation. The measurement of the suggested value creation approach could become more refined in future research by using more advanced and sophisticated ways of calculating ROIC and company-specific WACC.

The limited access to corporate information and professional databases made it difficult for the authors to further investigate the robustness of results. Especially with regards to CSR information, other data sources could have been helpful. The inclusion criteria of companies in Asset4 is driven by customer demand, portraying Asset4's rather commercial than academic orientation, and raising questions about its validity for academic research. The use of other databases could have warranted larger time frames and more companies to be analysed, increasing the sample size and robustness of results.

Future turnaround research could focus on looking in more detail at the effect of the sub-components of the ESG pillars. Particularly interesting would be to verify if there is a significant relationship between specific turnaround practices and a particular CSR score. For example, one could look into detail at the interaction between social score with employee layoff, and product innovation with environmental score. Once the single relationships are established, they could then help to better understand or interpret composite CSR measures.

Bibliography

Agrawal, A. and Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Finance and Quantitative Analysis*, 31(3):377–397.

Allouche, J. and Laroche, P. (2005). A meta-analytical investigation of the relationship between corporate social and financial performance. *Revue de Gestion des Ressources Humaines*, 57.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23(4):589–609.

Ashta, A. and Tolle, L. (2004). Criteria for selecting restructuring strategies for distressed or declining enterprises. *Cahiers du CEREN*, 6.

Asquith, P. and Mullins Jr., D. W. (1986). Signalling with dividends, stock repurchases, and equity issues. *Financial Management*, 15(3):27–44.

Atiase, R. K., Platt, D. E., and Tse, S. Y. (2004). Operational restructuring charges and post-restructuring performance. *Contemporary Accounting Research*, 21(3):493–522.

Baumeister, R., Bratslavsky, E., Finkenauer, C., and K.D., V. (2001). Bad is stronger than good. *Review of General Psychology*, 5:323–370.

Becchetti, L., Ciciretti, R., and Hasan, I. (2007). Corporate social responsibility and shareholder's value: an event study analysis. *Federal Reserve Bank of Atlanta*, 6.

Berk, J., DeMarzo, P., and Harford, J. (2011). *Fundamentals of Corporate Finance*. Prentice Hall, second edition.

Bhagat, S. and Black, B. S. (2002). The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law*, 27:231–273.

Breusch, T. S. and Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5):1287–1294.

Callan, S. and Thomas, J. (2009). Corporate financial performance and corporate social performance: an update and reinvestigation. *Corporate Social Responsibility and Environmental Management*, 17:61–78.

Cascio, W. F. (1993). Downsizing: What do we know? what have we learned? *The Executive*, 7(1):95.

Cascio, W. F. (2002). Strategies for responsible restructuring. *Academy of Management Executive*, 16(3):80–91.

Cascio, W. F. (2003). Responsible restructuring: Seeing employees as assets, not costs. *Ivey Business Journal*, 68(2).

Chakraborty, S. and Dixit, S. (1992). Developing a turnaround strategy: A case study approach. *OMEGA International Journal of Management Science*, 20(3):345–352.

Chatterji, A., Durand, R., Levine, D., and Touboul, S. (2014). Do ratings of firms converge? implications for strategy research.

Chatterji, A. K. and Toffel, M. W. (2010). How firms respond to being rated. *Strategic Management Journal*, 31(9):917–945.

Cho, C. and Patten, D. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, 32:639–647.

Cho, S., Lee, C., and Pfeiffer, R. (2012). Corporate social responsibility performance and information asymmetry. *Journal of Accounting and Public Policy*.

Chowdhury, S. D. and Lang, J. R. (1996). Turnaround in small firms: An assessment of efficiency strategies. *Journal of Business Research*, 36:169–178.

Crifo, P., Diaye, M.-A., and Pekovic, S. (2013). Corporate social responsibility related management practices and firm performance: An empirical analysis of the quantity-quality trade-off on french data.

Dahlsrud, A. (2008). How corporate social responsibility is defined: an analysis of 37 definitions. *Corporate Social Responsibility and Environmental Management*, 15(1):1–13.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., and Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 3(269-290).

Dalton, D. R. and Dalton, C. M. (2011). Integration of micro and macro studies in governance research: Ceo duality, board composition, and financial performance. *Journal of Management*, 37(2):404–411.

Denis, D. J. and Kruse, T. A. (2000). Managerial discipline and corporate restructuring following performance declines. *Journal of Financial Economics*, 55:391–424.

Dutz, M. and Vagliasindi, M. (1999). *Corporate Governance and Restructuring Transition Economies: An Empirical Assessment*. EBRD.

Eccles, R., Ioannou, I., and Serafeim, G. (2012). The impact of a corporate culture of sustainability on corporate behavior and performance. NBER.

Edmans, A. (2011). Does the stock market fully value intangibles? employee satisfaction and equity prices. *Journal of Financial Economics*, 101(3):621–640.

Edwards, T. (2004). Corporate governance, industrial relations and trends in company-level restructuring in europe: Convergence towards the anglo- american model? *Industrial Relations Journal*, 35(6):518–535.

Erhardt, H. L., Werbel, J. D., and Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11(2):102–111.

Eweje, G. (2011). A shift in corporate practice? facilitating sustainability strategy in companies. *Corporate Social Responsibility and Environmental Management*, 18:125–136.

Filatotchev, I. and Toms, S. (2006). Corporate governance and financial constraints on strategic turnarounds. *Journal of Management Studies*, 43(3):407–433.

Friedman, M. (1970). The social responsibility of business is to increase its profits. *The New York Times Magazine*.

Gerhart, B. and Milkovich, G. T. (1990). Organizational differences in managerial compensation and financial performance. *Academy of Management Journal*, 33(4):663–691.

Ghosh, C. and Woolridge, J. R. (1989). Stock-market reaction to growth induced dividend cuts: are investors myopic? *Managerial and Decision Economics*, 10:25–35.

Gillet, R. and de La Bruslerie, H. (2010). The consequences of issuing convertible bonds: Dilution and/or financial restructuring? *European Financial Management*, 16(4):552–584.

Gilson, S. C. (1989). Management turnover and financial distress. *Journal of Financial Economics*, 25:241–262.

Gjølberg, M. (2009). Measuring the immeasurable?: Constructing an index of csr practices and csr performance in 20 countries. *Scandinavian Journal of Management*, 25(1):10–22.

Godfrey, P. (2004). The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review*, 30:777–798.

Hambrick, D. C. and Schecter, S. M. (1983). Turnaround strategies for mature industrial-product business units. *Academy of Management Journal*, 26(2):231–248.

Hassel, L. G. and Semenova, N. (2013). The added value of esg/sri on company and portfolio levels – what can we learn from research? *SIRP working paper*, 13(2).

Hill, C. W. and Jones, T. M. (1992). Stakeholder agency theory. *Journal of Management Studies*, 29(2):131–154.

Hillman, A. J. and Keim, G. D. (2001). Shareholder value, stakeholder management, and social issues: what's the bottom line? *Strategic Management Journal*, 22(2):125–139.

Hofer, C. W. (1980). Turnaround strategies. *Journal of Business Strategy*, 1(1):19–31.

Hotchkiss, E. S., John, K., Mooradian, R. M., and Thorburn, K. S. (2008). *Bankruptcy and the Resolution of Financial Distress*, volume 2 of *Handbook of Corporate Finance: Empirical Corporate Finance*. Elsevier/North Holland.

Ioannou, I. and Serafeim, G. (2010a). The impact of corporate social responsibility on investment recommendations. *Academy of Management Proceedings*, 1:1–6.

Ioannou, I. and Serafeim, G. (2010b). *What Drives Corporate Social Performance? International Evidence from Social, Environmental and Governance Sources*. Harvard Business School.

Ioannou, I. and Serafeim, G. (2011). The consequences of mandatory corporate sustainability reporting. *Harvard Business School Research Working Paper*, pages 11–100.

John, K., Lang, L. H. P., and Netter, J. (1992). The voluntary restructuring of large firms in response to performance decline. *Journal of Finance*, 47(3):891–917.

Kang, J.-K. and Shivdasani, A. (1997). Corporate restructuring during performance declines in japan. *Journal of Financial Economics*, 46:19–65.

Koller, T., Goedhart, M., and Wessels, D. (2010). *Valuation: Measuring and managing the value of companies*. McKinsey and Company.

Lai, J. and Sudarsanam, S. (1997). Corporate restructuring in response to performance decline: Impact of ownership, governance and lenders. *European Financial Management*, 1:197–233.

Lev, B., Petrovits, C., and Radhakrishnan, S. (2010). Is doing good good for you? yes, charitable contributions enhance revenue growth. *Strategic Management Journal*, 31(2):182–200.

Li, G. (1985). Robust regression. In Hoaglin, D. H., Mosteller, F., and Tukey, J., editors, *Exploring Data Tables, Trends and Shapes*, chapter 8, pages 281–340. Wiley.

McWilliams, A. and Siegel, D. (2001). Corporate social responsibility: a theory of the firm perspective. *Academy of Management Review*, 26(1):117–127.

Minton, B. A. and Schrand, C. (1999). The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing. *Journal of Financial Economics*, 54:423–460.

Molina-Azorín, J. F., Claver-Cortés, E., López-Gamero, M. D., and Tarí, J. J. (2009). Green management and financial performance: a literature review. *Management Decision*, 47(7):1080–1100.

Morrow jr., J. L., Johnson, R. A., and Busenitz, L. W. (2004). The effects of cost and asset retrenchment on firm performance: The overlooked role of a firm's competitive environment. *Journal of Management*, 30(2):189–208.

Ofek, E. (1992). Capital structure and firm response to poor performance. *Journal of Financial Economics*, 34:3–30.

Orlitzky, M. and Benjamin, J. D. (2001). Corporate social performance and firm risk: A meta-analytic review. *Business and Society*, 40(4):369–396.

Orlitzky, M., Schmidt, F. L., and Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization studies*, 24(3):403–441.

Ortas, E., Gallego-Alvarez, I., and Alvarez Etxeberria, I. (2014). Financial factors influencing the quality of corporate social responsibility and environmental management disclosure: A quantile regression approach. *Corporate Social Responsibility and Environmental Management*.

Pandit, N. R. (2000). Some recommendations for improved research on corporate turnaround. *M@n@gement*, 3(2):31–56.

Pant, L. W. (1991). An investigation of undustry and firm structural characteristics in corporate turnarounds. *Journal of Management Studies*, 28:623–643.

Pearce II, J. A. and Doh, J. P. (2002). Improving the management of turnaround with corporate financial measures. *Academy of Management Proceedings*, pages B1–B6.

Porter, M. E. and Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12):78–92.

Robbins, D. K. and Pearce II, J. A. (1992). Turnaround: retrenchment and recovery. *Strategic Management Journal*, 13(4):287–309.

Samkin, G., Low, M., and Adams, T. (2012). The use of z-scores to predict finance company collapses: A research note. *New Zealand Journal of Applied Business Research*.

Sarkar, R. (2008). Public policy and corporate environmental behaviour: A broader view. *Corporate Social Responsibility and Environmental Management*, 15:281–297.

Schmuck, M. (2013). *Financial distress and turnaround: An empirical analysis of the automotive supplier industry*. Springer Gabler.

Semenova, N. (2010). Corporate environmental performance: consistency of metrics and identification of drivers. *SIRP working paper*.

Sen, S. and Bhattacharya, C. B. (2001). Does doing good always lead to doing better? consumer reactions to corporate social responsibility. *Journal of Marketing Research*, 38(2):225–243.

Slatter, S., Lovett, D., and Barlow, L. (2006). *Leading Corporate Turnaround: How Leaders Fix Troubled Companies*. Jossey-Bass.

Smith, M. and Graves, C. (2005). Corporate turnaround and financial distress. *Managerial Auditing Journal*, 20(3):304–320.

Solomon, A. and Lewis, L. (2002). Incentives and disincentives for corporate environmental disclosure. *Business Strategy and the Environment*, 11:154–169.

Spiess, D. K. and Affleck-Graves, J. (1995). Underperformance in long-run stock returns following seasoned equity offerings. *Journal of Financial Economics*, 38:243–267.

Sudarsanam, S. and Lai, J. (2001). Corporate financial distress and turnaround strategies: an empirical analysis. *British Journal of Management*, 12(3):183–199.

Turban, D. and Greening, D. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, 40(3):658–672.

Van Marrewijk, M. (2003). Concepts and definitions of csr and corporate sustainability: between agency and communion. *Journal of Business Ethics*, 44(2-3):95–105.

Vormedal, I. and Ruud, A. (2009). Sustainability reporting in norway – an assessment of performance in the context of legal demands and sociopolitical drivers. *Business Strategy and the Environment*, 18:207–222.

Waddock, S. and Graves, S. (1997). The corporate social performance-financial performance link. *Strategic Management Journal*, 18(4):303–310.

Whitaker, R. B. (1999). The early stages of financial distress. *Journal of Economics and Finance*, 23(2):123–133.

Wood, D. (1991). Corporate social performance revisited. *Journal of Management Review*, 16(4):691–718.

Yawson, A. (2009). Interaction effects of restructuring decisions on operating profit following performance shocks. *Journal of Economics and Business*, 61(3):216–237.

Zu, L. (2006). *Socially responsible restructuring and firm's performance: evidence from Chinese enterprises*. PhD thesis, Nottingham University Business School.

Appendix

A Data manipulation

Interpolation:

Lagging and forwarding one year of CSR score, keeping the value of the previous/following year. Reasoning: Assuming limited variance, a simple continuation for a short time frame seems warranted to increase the sample size.

- Environmental Score: 1,156 observations added;
- Social Score: 1,156 observations added;
- Corporate Governance Score: 1,156 observations added.

Filling up missing values by taking an average of the previous and following year. Reasoning: Although this is a strong assumption, it has been decided to consider the missing values as in line with the previous and following years and, therefore, estimate them with a simple average.

- ROIC: 103 observations added;
- Operating expenses: 3 observations added;
- Employees: 20 observations added;
- Capital Expenditures: 7 observations added.

Completion:

Completing the Data-set with another source and looking up single missing observations: looked up in the SEC annual 10K filing. Reasoning: Whenever the values missing existed in the 10K filing and matched Datastream's definition, they have been included.

- Operating expenses: 10 observations added;
- Acquisitions: 88 observations added;
- Capital Expenditures: 2 observations added;
- Share issue: 1 observation added;
- Dividends: 6 observations added;
- Management[19]: 20 observations added.

[19]However, only testing for CEO change, not important executive as in the Datastream definition.

Filling out missing values with zeros.

Reasoning: Considering that many values were missing as only few companies report R&D and marketing expenditures, zeros replaced the missing values to make the variables usable for regressions in Stata. Reducing the variance of the variable, sample bias should not be an issue for this approach.

- Marketing Expenditures: 13,043 observations added;
- R&D Expenditures: 6,582 observations added.

Deleted:

Turnaround cases deleted because of missing values. Out of the 425 turnaround cases, 67 were deleted because they did not have an original or an interpolated CSR score, and 3 more were deleted because even manual data search did not warrant consistency in the data.

- N219 - US04010L1035: missing Operating Expenses and Acquisitions;
- N156 - US74340W1036: missing Employees and Acquisitions;
- N400 - US0236081024: missing Acquisitions.

B Correlation table (base case - 355 observations)

Table 13 on page 61 shows the correlation among all the dependent and independent variables used in this study. Details are described in the caption.

Table 13: Correlation table

The table shows the correlation between all the dependent and independent variables of the regressions. (1) is the change in ROIC−WACC in the turnaround year (TY), (2) is the change in Tobin's Q in the TY, (3) is the level of ROIC−WACC in the TY, (4) is the Low third of Environmental score in TY, (5) is the High third of Environmental score in TY, (6) is the Low third of Social score in TY, (7) is the High third of Social score in TY, (8) is the Low third of Corporate Governance score in TY, (9) is the High third of Corporate Governance score in TY, (10) is the change in marketing expenditures over revenues in TY-1, (11) is the change in R&D expenditures over revenues in TY-1, (12) is the change in operating expenses over revenues in TY-1, (13) is the change in number of employees in TY-1, (14) is the change in total assets in TY-1, (15) is the acquisitions over total assets in TY-1, (16) is the capital expenditures over total assets in TY-1, (17) is the share issue over revenues in TY-1, (18) is the change in dividends in TY-1, (19) is the change in total debt over total assets in TY-1, (20) is the change in convertible debt in TY-1, (21) is the change in top management in TY-1, (22) is the severity ranking in TY-1, (23) is the logarithm of the revenues in TY, and (24) is the firm's financial slack in TY, which is total debt over market value of equity.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(1)	1																							
(2)	0.115	1																						
(3)	0.355	0.009	1																					
(4)	0.005	0.099	0.006	1																				
(5)	-0.008	-0.064	0.032	-0.498	1																			
(6)	-0.017	0.067	-0.060	0.391	-0.447	1																		
(7)	-0.065	-0.085	0.045	-0.396	0.670	-0.498	1																	
(8)	0.078	0.002	0.110	0.302	-0.257	0.276	-0.295	1																
(9)	0.017	-0.035	0.006	-0.346	0.442	-0.333	0.467	-0.498	1															
(10)	-0.069	0.127	-0.041	0.003	-0.010	0.046	-0.007	-0.059	-0.020	1														
(11)	-0.02	0.079	-0.076	0.060	-0.083	0.077	-0.076	0.106	-0.071	0.006	1													
(12)	0.038	0.052	-0.055	0.030	-0.068	-0.025	-0.051	0.090	-0.027	0.066	0.292	1												
(13)	-0.085	-0.114	0.026	-0.019	-0.062	0.081	-0.053	0.095	-0.088	-0.090	-0.009	-0.124	1											
(14)	-0.113	-0.062	0.007	-0.016	-0.062	0.068	-0.030	0.009	-0.041	-0.067	-0.022	-0.131	0.773	1										
(15)	-0.045	-0.077	0.114	0.011	-0.108	0.074	-0.100	-0.026	0.022	-0.053	-0.039	-0.060	0.362	0.355	1									
(16)	-0.116	-0.044	-0.088	0.066	-0.006	0.113	-0.007	0.081	-0.033	-0.024	0.112	-0.030	-0.006	-0.039	-0.002	1								
(17)	-0.030	-0.041	0.040	0.110	-0.095	0.209	-0.095	0.045	-0.025	-0.002	0.130	0.007	0.168	0.227	0.305	0.116	1							
(18)	-0.068	-0.101	-0.064	0.079	-0.011	0.007	0.039	0.008	0.015	-0.027	-0.014	-0.068	0.087	0.091	0.061	0.016	0.016	1						
(19)	0.155	0.032	-0.014	0.034	-0.114	0.091	-0.153	0.043	-0.096	0.052	-0.061	0.077	0.039	-0.010	0.191	0.020	-0.024	0.039	1					
(20)	-0.009	0.030	-0.073	-0.034	-0.037	0.026	-0.076	-0.010	-0.072	0.000	0.072	-0.022	0.323	0.522	-0.036	0.036	0.006	0.031	0.124	1				
(21)	-0.032	-0.044	-0.043	-0.084	0.008	-0.038	0.100	-0.061	0.054	0.147	0.028	0.017	0.014	-0.025	-0.076	0.137	0.062	0.002	0.042	-0.060	1			
(22)	0.340	0.265	-0.023	-0.029	-0.029	0.000	-0.073	-0.051	0.051	0.063	0.064	0.030	-0.161	-0.155	-0.085	-0.056	-0.071	-0.103	0.205	0.072	0.027	1		
(23)	0.046	-0.128	0.092	-0.375	0.493	-0.434	0.445	-0.212	0.322	-0.066	-0.152	-0.138	0.032	0.035	-0.093	-0.036	-0.292	0.012	-0.075	0.000	0.066	-0.038	1	
(24)	-0.012	-0.058	-0.061	0.001	-0.054	0.015	-0.058	0.014	-0.059	-0.031	-0.021	0.060	-0.016	-0.036	-0.031	0.052	-0.003	-0.079	0.113	-0.010	0.002	0.008	-0.011	1

C Summary statistics

The following Table 14 shows the results of the summary statistics done on the variables.

Table 14: Summary statistics

The table shows the summary statistics of the variables, including number of observations, mean, standard deviation, minimum and maximum values. To see how the variables are calculated, see Table 2.

Variables	Observations	Mean	St. D.	Min.	Max.
ROIC−WACC	355	-0.043	0.118	-1.000	0.431
Success ST	355	0.301	0.459	0.000	1.000
Success LT	327	0.180	0.385	0.000	1.000
ROIC−WACC ch.	355	0.042	0.136	-0.500	0.854
Tobin's Q change	355	0.074	0.350	-0.548	2.462
Marketing expenses	355	0.001	0.039	-0.191	0.562
R&D expenses	355	0.004	0.030	-0.058	0.455
Operating expenses	355	0.020	0.173	-1.578	1.524
Employees	355	0.018	0.221	-0.640	1.652
Total Assets change	355	0.074	0.352	-0.756	4.001
Acquisitions	355	0.017	0.049	-0.052	0.513
Capital expenditures	355	-0.010	0.0441	-0.332	0.244
Share issue	355	0.087	0.330	-0.008	4.824
Dividend incr./decr.	355	0.023	0.608	-1.000	8.526
Debt issue/reduction	355	0.004	0.058	-0.194	0.353
Convertible debt	355	0.050	0.707	-1.000	11.705
CEO change	355	0.073	0.261	0.000	1.000
Environment	355	0.394	0.301	0.088	0.964
Social	355	0.417	0.279	0.038	0.967
Corporate Gov.	355	0.734	0.157	0.121	0.965
Size in TY	355	15.308	1.309	10.771	18.991
Firm financial slack	355	1.249	6.578	0.000	109.800

D Turnarounds by industry and severity level

Table 15: Turnarounds by industry and severity ranking

The table shows the total number of turnarounds divided into the three different severity ranking subgroups and the 10 different industries, where (1) is Basic Materials, (2) is Industrials, (3) is Consumer Goods, (4) is Health Care, (5) is Consumer Services, (6) is Telecommunication, (7) is Utility, (8) Financials, (9) is Technology and (10) is Oil and Gas. The numbers in italic show the percentage of firms that belong to the severity group per each industry.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Total
Low Severity	4	24	4	2	15	3	10	43	5	8	118
	18%	*39%*	*13%*	*16%*	*36%*	*75%*	*72%*	*47%*	*13%*	*22%*	
Mid Severity	10	21	11	5	13	1	3	35	7	13	119
	46%	*34%*	*34%*	*42%*	*31%*	*25%*	*21%*	*39%*	*18%*	*35%*	
High Severity	8	17	17	5	14	0	1	13	27	16	118
	36%	*27%*	*53%*	*42%*	*33%*	*0%*	*7%*	*14%*	*69%*	*43%*	
Total	22	62	32	12	42	4	14	91	39	37	355

E Summary statistics for industry and strategies

Table 16 on page 64 shows the results of the summary statistics of strategies along the industries.

Table 16: Summary statistics of strategies by industry

The table shows the summary statistics of the turnaround variables along the industries. (A) is "change in marketing expenses", (B) is "change in R&D expenses", (C) is "change in operating expenses", (D) is "change in number of employees", (E) is "change in total assets", (F) is "acquisitions", (G) is "change in capital expenditures", (H) is "share issue", (I) is "dividend cut/omission" and (J) is "change in total debt".

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
					Basic materials					
Obs	22	22	22	22	22	22	22	22	22	22
Mean	-0.000	0.001	-0.006	-0.012	0.083	0.026	-0.011	0.229	0.328	0.011
Std. Dev.	0.002	0.003	0.065	0.129	0.265	0.077	0.027	1.003	1.856	0.043
Min	-0.007	-0.002	-0.146	-0.321	-0.240	0.000	-0.065	0.000	-0.672	-0.095
Max	0.000	0.010	0.128	0.269	1.076	0.339	0.033	4.824	8.525	0.084
					Industrials					
Obs	62	62	62	62	62	62	62	62	62	62
Mean	-0.000	0.000	0.019	0.003	0.055	0.024	-0.008	0.020	0.009	-0.006
Std. Dev.	0.003	0.003	0.043	0.152	0.219	0.046	0.021	0.076	0.146	0.042
Min	-0.016	-0.013	-0.086	-0.288	-0.294	-0.005	-0.097	0.000	-0.500	-0.102
Max	0.008	0.009	0.187	0.626	1.065	0.275	0.035	0.541	0.502	0.108
					Consumer goods					
Obs	32	32	32	32	32	32	32	32	32	32
Mean	0.005	0.003	0.044	-0.068	-0.041	0.029	-0.004	0.029	-0.118	0.029
Std. Dev.	0.039	0.015	0.099	0.285	0.414	0.094	0.018	0.116	0.307	0.064
Min	-0.126	-0.011	-0.083	-0.392	-0.403	0.000	-0.045	-0.008	-1.000	-0.108
Max	0.168	0.080	0.329	1.219	1.999	0.513	0.043	0.661	0.368	0.211
					Health care					
Obs	12	12	12	12	12	12	12	12	12	12
Mean	0.000	0.034	0.048	0.146	0.349	0.033	0.011	0.175	0.326	-0.006
Std. Dev.	0.000	0.133	0.101	0.485	1.159	0.084	0.029	0.375	1.037	0.054
Min	0.000	-0.032	-0.058	-0.166	-0.180	0.000	-0.007	0.000	0.000	-0.105
Max	0.000	0.455	0.307	1.652	4.001	0.287	0.100	1.202	3.610	0.110
					Consumer services					
Obs	42	42	42	42	42	42	42	42	42	42
Mean	0.010	0.000	0.018	0.030	0.034	0.015	-0.008	0.009	-0.117	0.003
Std. Dev.	0.103	0.002	0.066	0.250	0.383	0.036	0.026	0.019	0.341	0.060
Min	-0.155	-0.002	-0.210	-0.353	-0.756	0.000	-0.076	0.000	-1.000	-0.103
Max	0.562	0.014	0.236	1.157	1.966	0.208	0.058	0.111	0.475	0.190
					Telecommunication					
Obs	4	4	4	4	4	4	4	4	4	4
Mean	0.001	0.001	0.001	-0.030	-0.012	0.005	0.004	0.023	0.219	-0.018
Std. Dev.	0.003	0.002	0.009	0.039	0.023	0.004	0.026	0.015	0.326	0.028
Min	0.000	0.000	-0.006	-0.070	-0.037	0.000	-0.030	0.014	0.007	-0.053
Max	0.006	0.005	0.009	0.021	0.019	0.010	0.033	0.045	0.696	0.011
					Utility					
Obs	14	14	14	14	14	14	14	14	14	14
Mean	0.000	0.000	0.003	-0.018	-0.023	0.006	-0.003	0.026	0.021	-0.019
Std. Dev.	0.000	0.000	0.026	0.130	0.115	0.021	0.015	0.043	0.108	0.028
Min	0.000	0.000	-0.042	-0.304	-0.276	0.000	-0.037	0.000	-0.268	-0.082
Max	0.000	0.000	0.054	0.292	0.125	0.079	0.020	0.149	0.134	0.018
					Financials					
Obs	91	91	91	91	91	91	91	91	91	91
Mean	-0.002	-0.000	0.011	0.019	0.104	0.003	-0.007	0.195	0.028	-0.004
Std. Dev.	0.021	0.004	0.267	0.211	0.232	0.010	0.049	0.352	0.550	0.046
Min	-0.190	-0.039	-1.578	-0.640	-0.189	0.000	-0.331	-0.004	-0.970	-0.144
Max	0.037	0.000	1.025	1.104	1.371	0.063	0.243	1.759	3.058	0.117
					Technology					
Obs	39	39	39	39	39	39	39	39	39	39
Mean	-0.000	0.019	0.045	0.033	0.052	0.014	-0.002	0.053	0.019	0.010
Std. Dev.	0.007	0.051	0.275	0.162	0.286	0.038	0.044	0.062	0.184	0.076
Min	-0.038	-0.058	-0.246	-0.231	-0.373	-0.051	-0.100	0.000	-0.465	-0.193
Max	0.023	0.227	1.524	0.636	1.160	0.165	0.178	0.229	1	0.239
					Oil and gas					
Obs	37	37	37	37	37	37	37	37	37	37
Mean	-0.000	-0.000	0.014	0.083	0.154	0.028	-0.045	0.022	0.015	0.026
Std. Dev.	0.003	0.003	0.103	0.237	0.297	0.049	0.082	0.065	0.323	0.080
Min	-0.020	-0.011	-0.176	-0.569	-0.254	0.000	-0.284	0.000	-0.797	-0.085
Max	0.000	0.009	0.250	0.666	1.123	0.235	0.065	0.342	1.000	0.353

F Summary statistics of CSR variables by severity ranks

Table 17 on page 65 shows the results of the summary statistics of the CSR variables along the three severity ranks.

Table 17: Summary statistics of CSR variables by severity ranks

The table shows the summary statistics of the CSR variables along the three severity ranks.

Variables	Observations	Mean	St. D.	Min.	Max.
		Severity Rank 1			
Environment	118	0.421	0.314	0.093	0.949
Social	118	0.454	0.292	0.038	0.963
Governance	118	0.733	0.160	0.156	0.965
		Severity Rank 2			
Environment	119	0.363	0.286	0.088	0.963
Social	119	0.399	0.271	0.048	0.965
Governance	119	0.721	0.150	0.214	0.956
		Severity Rank 3			
Environment	118	0.398	0.302	0.092	0.964
Social	118	0.398	0.271	0.059	0.967
Governance	118	0.747	0.161	0.121	0.959

G Robustness test: single CSR variables

In Table 18 on page 66 are presented the results from the regressions done with only the CSR variables together with the controls for year and firm's size and then each CSR pillar alone with the controls mentioned.

Table 18: Robustness test: single CSR variables

The table shows the results from the regressions done for H1 and H2 containing only the CSR variables and the controls for year and size. The logit regressions answer H1a and H1b, where [0] is turnaround failure and [1] turnaround success, while the multivariate regression answers H2, where the dependent variable is the change in ROIC−WACC. The CSR variables are tested together and then separately.

Variables	ST Success	LT Success	Δ(ROIC−WACC)
	CSR variables, year and size		
Observations	*355*	*317*	*355*
Log-likelihood	*-189.243*	*-127.113*	-
Adjusted $- R^2$	-	-	*0.073*
Prob $> \chi^2$ *or F*	*0.001*	*0.001*	*0.000*
Low Environment	**0.590***	0.313	0.006
High Environment	0.106	0.115	0.004
Low Social	-0.390	-0.213	-0.009
High Social	0.181	0.243	**-0.044***
Low Governance	**1.018*****	0.618	**0.038****
High Governance	0.087	-0.038	0.025
Size	0.108	0.195	0.007
Intercept	-3.823	-6.256	-0.178
	Environment variables, year and size		
Log-likelihood	*-194.883*	*-128.729*	-
Adjusted $- R^2$	-	-	*0.060*
Prob $> \chi^2$ *or F*	*0.004*	*0.001*	*0.000*
Low Environment	**0.706****	0.368	0.013
High Environment	0.152	0.190	-0.014
Size	0.137	0.204	0.006
Intercept	**-3.992***	**-6.239****	-0.143
	Social variables, year and size		
Log-likelihood	*-197.139*	*-128.986*	-
Adjusted $- R^2$	-	-	*0.070*
Prob $> \chi^2$ *or F*	*0.014*	*0.001*	*0.000*
Low Social	-0.096	-0.087	-0.004
High Social	-0.042	0.135	**-0.041***
Size	0.071	0.161	0.008
Intercept	-2.913	**-5.566****	-0.166
	Governance variables, year and size		
Log-likelihood	*-191.305*	*-127.702*	-
Adjusted $- R^2$	-	-	*0.071*
Prob $> \chi^2$ *or F*	*0.001*	*0.000*	*0.000*
Low Governance	**1.028*****	0.620	**0.040****
High Governance	0.134	0.040	0.013
Size	0.136	0.245	0.003
Intercept	**-4.209****	**-6.945*****	-0.116

* p<0.10, ** p<0.05, *** p<0.01