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| **Erasmus University Rotterdam**  Erasmus School of economics  Department of Accounting, Auditing and control |
| Effect of publication ‘Transparency Benchmark’ on stock prices |
| An Event Study on the stock price reaction for Dutch listed companies on the AEX and AMX |
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| This thesis investigates whether the publication of the ‘Transparency Benchmark’ leads to an abnormal share price return. Based on prior literature, this thesis assumes that the CSP of a firm can be exhibited by the quality of CSR disclosure, which in turn is measured by the ‘Transparency Benchmark’. Expecting that the market will value the publication of this benchmark relevant, the Efficient Market Hypothesis assumes that the market will adjust share prices immediately. Results show there is no evidence to support this. |

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# Introduction

Over the past decades, the term Corporate Social Responsibility (CSR) has been interpreted, argued and researched in many different ways. The fact there is still no unanimous decision on the definition of CSR can be considered to be of importance when discussing this topic. The broad scope of the term CSR has led to different interpretations by companies and this in turn shows just how difficult it is to discuss this topic. There is not even consensus on whether CSR has its benefits and, if so, should be implemented by companies (Hassel et al. [2005], Dhaliwal et al. [2011], Dhaliwal et al. [2012] and Gietl et al. [2012]). However, CSR is a subject of discussions that has only really gain momentum in the last decade. Famous examples of the scandals surrounding Enron, Worldcom and Parmalat have been used to address the government, society and companies to take action against such acts and have companies change their internal system to prevent such frauds from happening again. As a reaction to these malicious practices, governments set up new rules that instructed companies to be transparent about their corporate governance structure. In the United States this led to the Sarbanes-Oxley act (SOX) that is aimed at holding top management responsible for the financial information provided. In the Netherlands a similar act was imposed by the government, called ‘*Tabaksblat Code*’, that is also aimed at corporate governance and demanding that firms disclose information about such things as remuneration of top management. These are measures taken that are supposed to acknowledge the growing demand of the public that large corporations must be held responsible for their actions. This can also be seen as a *‘social contract’* between organizations and society and that ‘*any breach of the social contract has negative implications for the ongoing survival of the organization’* (Islam & Deegan, 2010, pg. 133). In response to government imposed laws and the increasing pressure from society, firms started to express their nonfinancial information through sustainability reports, CSR reports, or social & environmental reports[[1]](#footnote-1), in order to reflect the corporate social responsibilities the firm is involved in. And almost implicitly, this meant broadening the focus from the firm’s shareholders to the firm’s stakeholders. Opponents of such a view often cite Friedman (1962) who mentions that managers’ only concern should be that of maximizing the wealth of the firm’s equity holders. Proponents, on the other hand, often refer to Freeman (1984) who argues that CSR can result in minimizing transaction costs and possible conflicts with the firm’s stakeholders. Nevertheless, the trend is growing in favor of more corporate social responsibility, which was possibly strengthened by the global financial crisis of 2008. As Ioannou & Serafeim (2011) point out, the fundamental cause leading up to the financial crisis was the strong focus on short-term profits instead of long-term value creation. This dramatic event further spurred companies to show to the public they were no longer solely focusing on the short-term, but are trying to do business in a long-term, sustainable way that creates value for all stakeholders. In order to achieve these objectives, companies disclosed in all sorts of fashions on this matter.

The Global Reporting Initiative (GRI)[[2]](#footnote-2) became one of the most accepted guidelines for companies to report on their corporate social performance (CSP), as well as their corporate responsibility in general. It allows companies to see which aspects are considered important to be active in, and can be used to inform the reader on which aspects the firm has disclosed information on. In general, a great deal of firms started disclosing their activities, policies and thoughts in the field of CSR, albeit through the use of GRI or not. Nonetheless, it is unlikely that every company has a full CSR program and is able to disclose a report about it. Just because a guideline is provided does not immediately imply every company can follow that guideline, as there are still firms that do not have anything to report with respect to their CSP. With this in mind, why would firms bother spending time and money in being more socially responsible? Dhaliwal et al. (2011, pg. 60) identify a couple of answers to this question, of which one states that ‘*firm’s reputation and long-term sales can suffer because of poor CSR performance’*. This is further supported by Mackey et al. (2007, pg. 817) who state that ‘*forms of socially responsible behavior may actually improve the present value of a firm’s future cash flows’*. They argue that socially responsible behavior allows a firm to avoid costly government imposed fines or aid in reducing a firm’s exposure to risk (Mackey et al, 2007). Furthermore, the concern expressed by the public is also visible through the rise of ethical investors who will only invest in those companies that are active in providing a sustainable environment for both the company and its stakeholders.

As stated above, there are different reasons why companies have started to involve with CSR. Companies will want to broadcast their involvement to the general public to generate a perception that the company is on the right track, and will do so through sustainability reports. But great care must be taken when assessing the disclosures made by companies, because a disclosure on CSR does not immediately imply CSP, or the other way around. In other words, firms can publish an extensive CSR report, but this does not necessarily indicate that their words follow their actions. Stating that a firm is trying to reduce emissions, is not yet meaningful without elaborating on how and how much has been accomplished. Furthermore, there is still the question if CSR disclosures even contain value that is considered relevant for the market. If this is not the case, then this would most likely not interact with the financial performance of the company. Prior research however, has shown that CSR disclosures can be considered to hold value (Plumlee et al. [2010] and Clarkson et al. [2010]) and that the financial performance and CSP relation is also established and found positive (Orlitzky et al. [2003], Brown et al. [2006], Lev et al. [2010] and Wood [2010]). The assumption that is then made is crucial in what follows for future research. Researchers assume that the best way to assess a firm’s social performance (i.e. the CSP of a firm) is through its CSR disclosures (Wood, 2010). The quantity and quality of disclosures determine the understanding of a firm’s social performance. As companies provide more insight on social- and environmental responsibilities, which reflects the understanding of their stakeholders, this allows analysts to assess the financial performance better (Dhaliwal et al. [2012] and de Villiers & Marques [2013]). This assumption is further based on the notion that firms who actually have results to show will want to disclose this. Due to this mechanism, companies are ‘naturally’ selected in good and bad social performers. The reason for this is that companies, who have little to no results achieved with respect to CSR, can also disclose less than those that do have results. Consequently, a difference in degree of disclosures will arise that distinguishes firms between those that are on the right track of becoming more sustainable, and those that are not. Based on that assumption, Dhaliwal et al. (2012) and de Villiers & Marques (2013) argue that a positive link can be assumed between a firm’s CSR disclosure and its financial performance. If that is the case, this suggests that ‘*investors infer useful information from nonfinancial disclosures’* (Dhaliwal et al., 2012, pg. 726). Consequently, under the Efficient Market Hypothesis[[3]](#footnote-3) (EMH), newly provided information is immediately taken up in the share price, leaving no possibilities for arbitrage. The reason to center on share prices is derived from de Villiers & Marques (2013) who state that ‘*share prices provide wide-ranging market information in a single measure, incorporating more information than cost of capital’* (pg. 3). In other words, one could thus argue that if the public considers a company’s CSR disclosures to be relevant, this would be reflected in the share price of a company immediately. More specifically, assuming CSR disclosures reflect CSP, measuring the quality of these disclosures should provide the market with new information. Hence, the market is expected to immediately adjust share prices when such a measure, on the quality of CSR disclosure, is made public. In the Netherlands a measure exists in the form of the ‘*Transparency Benchmark’* (TB). This benchmark provides a score per company based on different economic, social and environmental aspects that are partly in line with the GRI guidelines. Dutch stock listed companies are obliged to participate in this yearly review of their sustainability report and the goal is to determine the level of transparency, with regard to disclosures on corporate social responsibility. The higher the total score on the benchmark, the higher the quality of disclosures is considered. In turn, this can then be interpreted as having achieved greater CSP. The benchmark-scores, which follow from the yearly assessment, are made public at a predetermined date. The line of reasoning then followed is that, assuming the public values this information as relevant; the market will immediately adjust share prices after the publication of the ‘*Transparency Benchmark’.*

The main research question that will be addressed in this thesis can be formulated as follows:

*“Is there an (abnormal) share price reaction, for Dutch stock listed companies in the years 2011 and 2012, after the announcement of the ‘Transparency Benchmark’ scores?”*

In order to address the main research question stated above, a number of sub-questions will be answered throughout this thesis in order to further support the results. These sub-questions are:

* *How do corporate social performance and CSR disclosure relate?*
* *How do CSR disclosures and financial performance relate?*
* *What is the ‘Transparency Benchmark’ and why is it a good proxy for CSR disclosure?*

Next to the abovementioned sub-questions, this thesis will also elaborate on relevant theories in the field of CSR. Prior literature on CSR has distinguished three main theories that are applicable to this setting and are therefore taken up in this thesis as well. In short, this concerns the ‘*legitimacy theory’*, ‘*stakeholder theory’* and *‘agency theory’* and will be discussed in Chapter III.

## Relevance

Corporate social responsibility is yet to have one definition and the relation with CSP and financial performance is still disputed, let alone the direction. This thesis therefore adds to prior literature by focusing on the relation between CSR disclosures and firm performance, and to some extent the relation between CSP and CSR disclosure. Furthermore, this thesis uses the content-analysis approach by making use of the ‘*Transparency Benchmark’* as a proxy for CSR disclosures. Previous studies on CSR and financial performance focus more on measuring the social performance and often used the KLD[[4]](#footnote-4) database. However, Turker (2009) mentioned that the content-analysis of CSR reports is gaining in power as more firms issue reports on sustainability. Hence, a measure that assesses the quality of the content in CSR reports is useful. The TB is aimed at doing exactly that by analyzing the content of disclosures and provides a measure (i.e. the benchmark-score) to represent the quality. Through the use of the TB, this thesis also helps explain whether the TB is considered by the market and why (not).

## Structure

In order to properly address the main research question stated, this thesis will be structured as follows. In Chapter III, the background of CSR and the *‘Transparency Benchmark’* will be presented and subsequently the previous literature and theories will be discussed. Chapter IV will present the hypotheses that will have to support the answer to the main research question. Then, in Chapter V the methodology is discussed, Chapter VI presents the results and Chapter VII is used to discuss and interpret the results. Finally, Chapter VIII is used for conclusion and limitations.

# Background and Literature Review

## Corporate Social Responsibility

One of the first people to write about the concept of social responsibility, which can be expected of firms, is Bowen. In 1953, Bowen asked a simple question about what can be reasonably expected of businessmen when it comes to their responsibilities towards society. Throughout the years that followed, many authors have tried to grasp what it exactly entails for a firm to be corporate socially responsible. The definitions changed from incorporating only firm and society to be in balance, towards a more specific incorporation of the economic, social and environmental factors relating to the firm’s business. As there was, and still is, no consensus on the definition of CSR, companies formulated their own thoughts on what CSR meant to them. Sustainability, long-term vision and value creation are just a few terms companies started using when expressing their social responsibility to society. However, when you look at more recent research, follow the GRI guidelines and view sustainability reports of the last couple of years, there seems to be a consensus that the three major fields every company needs to address are economic, social and environment. The World Business Council for Sustainable Development (WBCSD)[[5]](#footnote-5) states this as working towards ‘*a sustainable future for business, society and the environment*’. The definition they provide is that ‘*Corporate Social Responsibility is the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families as well as of the community and society at large*’[[6]](#footnote-6). Even though this definition does not clearly state exactly the words economic, social and environment, one can easily depict this based on the usage of words. The European Commission provides a definition that is somewhat similar as they state that CSR is ‘a process to integrate social, environmental, ethical human rights and consumer concerns into their business operations and core strategy’*[[7]](#footnote-7)*. Nevertheless, even when a clear definition on CSR would be in place, this would still not prevent firms from interpreting it in its own way. Gray (2006, pg. 75) notes that phrases such as ‘sustainable business success’ and ‘only profits generated with a clear sense of responsibility are truly sustainable’ have become the norm, rather than the exception. In other words, a definition is useless without a clear guideline on how to implement and disclose about a firm’s sustainability plans. This concern was also recognized by the Global Reporting Initiative and it has the ambition to ‘provide all companies and organizations with a comprehensive sustainability reporting framework’*[[8]](#footnote-8)*. The International Organization for Standardization (ISO)[[9]](#footnote-9) recognized the importance of guidelines for sustainability reporting, and agreed to cooperate with the GRI on sustainable development. However, even with the GRI continuously trying to improve its guidelines, and with the presence of other indices such as the Dow Jones Sustainability Index (DJSI)[[10]](#footnote-10), researchers cannot seem to agree on the effects of CSR.

### Reason of corporate social reporting

In order to address the effects and relations connected to corporate social responsibility; it is first good to understand the reasons why companies report on their corporate responsibility. Companies feel increasing pressure from society to be more transparent on all the activities a company is involved in, especially the non-financial side. Gray (2006) formulates this as that a company should provide a report that includes complete, objective information that enables stakeholders to estimate reliably the company’s social and environmental performance. From the perspective of firms, their interest in corporate social reporting also grew. In order to address the concern of the public, disclosures on firm’s social responsibilities would allow the firm to position themselves more competitively (Islam & Deegan, 2010). Other reasons can be as simple as having to comply with legal requirements, or industry specific requirements (Iouannou & Serafeim, 2011). Firms might also see opportunities to attract new customers, or even employees who value a firm’s social and environmental responsibility highly. Furthermore, banks and investors have also changed some policies by demanding a certain level of corporate responsibility, before lending or investing money, and thus resulting in firms trying hard to comply with their standards. Mackey et al. (2007) argued that social responsible behavior might increase future cash flows and would imply that the theory of Friedman (1962), maximizing present value of future cash flows, would hold. Nevertheless, it must be noted that there will always be companies who are simply involved with CSR because the public wants it to be and therefore disclose only what is necessary. On the other hand, there are companies, mainly large multinationals, who believe that operating in a sustainable way will improve the quality of their firm and allows being profitable in both the short – and long run. Take for example DSM, the number one in its sector on the DJSI, who reports that it is concerned with *‘creating shared value for all stakeholders’* and continues that DSM is aimed at *‘providing solutions to the challenges facing society, the environment and end-users’*[[11]](#footnote-11). This is of course just one example, but there are many similar reports issued that address sustainability aspects, albeit in simple text and explanation or in full reports presenting goals and results. Nonetheless, it is exactly the large spread in different types of disclosures (e.g. extensive reports on good and bad news vs. simple policies) that drive proponents of CSR to demand full accountability of organizations. Gray et al. (1987) already mentioned that organizations must ‘*communicate the social and environmental effects of organizations’ economic actions to particular interest groups within society*’ (pg. ix). Firms often tend to disclose mainly positive news and this seems logical from their point of view. Why report on negative information when your competitors do not? The resulting loss of customers, suppliers and market share due to negative reputation is not something that is easily restored (Islam & Deegan, 2011). However, proponents of full accountability argue that companies cannot be sustainable if not everything is disclosed. It asks to report on all aspects the company is involved in, but maybe even more important, that the company is also able to distinguish the aspects on which it is failing to contribute (Unerman & O’Dwyer [2007], Manetti & Becatti [2009]). Put differently, reporting on corporate social responsibility should not only concern what firms have achieved (e.g. waste reduction), but also the things it has not achieved and explain why this is the case. The economic, social and environmental factors remain the three important pillars to which organizations can contribute in various ways; it is now up to companies to disclose where it has failed with respect to these three factors. Even so, bear in mind that reporting on corporate social responsibilities is, for instance in the Netherlands, voluntary. Just as the first companies have set a trend by reporting positive social and environmental information, companies must now set the trend for disclosing negative information regarding their responsibilities.

## Theory

### Legitimacy theory

There are researchers who consider the existence of a ‘*social contract’* between society and an organization. Within this contract, management must undertake any action that will generate a perception, amongst the public, that the firm’s value system is in line with the value system of the public (Islam & Deegan, 2010). In other words, a company must be aware of what society expects the company is committed to do and this works only in one direction. Consequently, any change in perception the public has of a company must be noticed by the company in order to adapt and change its behavior. If a company fails to adjust in time, this can have a serious impact on the firm’s future prospects. Corporate social responsibility is one example of a changed perception that the public holds on, mainly large, companies. As mentioned, due the frauds, scandals and the financial crisis, society has put a lot of pressure on firms to change their behavior that focused predominantly on short-term profits. At first, a change in attitude from the public will probably cause an expectations gap, which basically means that the view from the public is no longer the same as the behavior of the company. Sethi (1978) identified two forces that can cause this gap to arise, namely, societal expectations have changed or unknown information from the past has become known. The latter is the case we have seen with frauds at Qwest or Parmalat for example. With such forces in play, it is important for organizations to either maintain, or regain their legitimacy and continue to operate in a way society expects of them. One way is for organizations to try and educate, or inform the public about the way the organization operates. Regarding their social responsibility, the most obvious tool for companies to use are disclosures. Cormier et al. (2005) state that a ‘*disclosure is a way to legitimize a firm’s continued existence or operations to its various stakeholders’* (pg. 7).Thus, through the use of a CSR report, the company can elaborate on certain fields the company is active in or explain their policy towards creating a sustainable environment. An example can be found in Cho & Patten (2007) in which they provide evidence for companies with poor environmental performance to exhibit more extensive, positive environmental disclosures. Put differently, this can be seen as an attempt for companies to maintain their legitimacy by increasing disclosures and try to inform the public, thereby trying to prevent an expectations gap from arising. A second possibility to maintain legitimacy is for companies to actively change the perception of the public. This can also include disclosures, for instance on sustainability, but is different from educating the public. The difference lies in the fact that the second possibility does not wait for the public to change its view on a company. Instead, the company will take the initiative and try to change the way society thinks. Both forces are thus tackled by disclosures and are based on the notion that the long-term existence of a firm depends on the ability to legitimize its activities to society (Cormier et al., 2005).

Regarding legitimizing actions in the field of corporate social responsibility, some researchers have indicated that disclosures have increased in reaction to bad news (Hogner [1982], Patten [1992] and Deegan & Rankin [1996]). Other similar results show a correlation between the level of disclosures and media attention (Gray et al. [1995] and Deegan et al. [2002]). More recent research has also provided evidence that disclosures are used by firms as a tool for legitimacy (Cho & Patten [2007], Cormier et al. [2009] and Cho et al. [2012]). Put another way, allowing an expectations gap to form in which society’s perception is not in line with a firm’s behavior, can seriously disrupt future growth of the firm. Nonetheless, evidence seems to show us that firms realize this all too well, and use disclosures (e.g. on CSR) to maintain, or regain legitimacy and securing the firm’s future.

### Stakeholder theory

One of the first people to define stakeholders was Freeman (1984), who states that this concerns *‘any group or individual who is affected by, or can affect the achievement of an organization’s objectives’* (pg. 46)*.* Employees, suppliers, NGOs, customers, governments, finance providers, etc. are all examples of possible stakeholders that have to be considered by a company. Due to differences between companies and industries, every company will have identified different stakeholders that it is concerned with the most. Notwithstanding, every firm will in some way have to bear in mind its possible influence on certain stakeholders, but, some stakeholders are more important to focus on than others. This can be explained by considering that every company has its own powerful stakeholders that have to be dealt with. Just as a company can affect stakeholders, the most powerful stakeholders are thought of as the ones who can affect a company. Having command over limited resources, access to influential media or the ability to determine the consumption level, such stakeholders can indirectly control a firm. Therefore, if the power of a stakeholder increases, a firm must take major concern in trying to meet that stakeholder’s demands.

A possibility for companies to meet the demands of stakeholders is to be more socially responsible. Any other stakeholder apart from shareholders, are assumed to have greater interest in a firm’s sustainability plans and policies, rather than just profits and earnings per share (EPS). For instance, some customers and ethical investors have made very clear that they will not support any company who is not also connected with the social and environmental aspects of business. Freeman later noted that the only goal of CSR is to create value for key stakeholders (2005). In fact, disregarding externalities and the impact it can have on stakeholders is critical to a company’s current and future success (Falck & Heblich, 2007). They continue that ‘*CSR can be strategically used to deal with the identified stakeholders’ claims’* (Falck & Heblich, 2007, pg. 249)*.* Put differently, if one would consider the time we live in, this would reveal a society who demands transparency, media who can form the perception of the public and other stakeholders who hold a certain power over a firm. Due to this, organizations have realized and experienced that it no longer suffices to publish a yearly report on only the financial state. To reach out to the larger stakeholders and the public’s concern, corporate social responsibility has been the path that firms have embarked on. CSR can thus be seen as an enabler for organizations to meet the obligations of their stakeholders and do so by translating the demands into CSR objectives and policies (Lindgreen & Swaen, 2010).

Even though many researchers agree with the stakeholder theory, realising that firms are part of a larger society in which they are connected with different stakeholders, Jensen’s thought is worth mentioning. In his paper of 2002, Jensen works towards a new definition surrounding stakeholder theory. After arguing that *‘stakeholder theory provides no criteria for what is better or what is worse’* he concludes that *‘stakeholder theory allows self-interested managers to pursue their own interests at the expense of society’* (Jensen, 2002, pg. 242). Without criteria for performance, Jensen (2002) believes managers will choose to exploit those projects that bring the greatest personal benefit, and do so at the cost of society (e.g. destruction of environment, cities, or art). As such, Jensen (2002) proposes the ‘*Enlightened Stakeholder Theory’* that adds merely the objective of the firm to maximize total long-term firm market value. Any change in total long-term market value of the firm is ‘*the scorecard by which success is measured’* (Jensen, 2002, pg. 246). Put another way, when analysts calculate the future market value of a company, an increase in this number can be seen as that the company has achieved to create long-term value.

### Agency theory

The agency theory is concerned with a relation that exists between two or more parties in which one is designated as the agent and acts on behalf of the principal (Ross, 1973). As Ross (1973) also made clear, in more general terms, is that the agent might have different information than the principal, also known as information asymmetry problem. Ross (1973) addresses this problem by stating that one could assume the principal to simply tell the agent how to act, however, the problem arising here is in monitoring the actual act the agent has chosen. In general, without measures undertaken by either the agent or the principal, there exists information asymmetry between these two parties. Consequently, a high level of information asymmetry is considered to ‘*increase* *transactions costs and lower liquidity for trading shares of the firm, thus raising the required rate of return and lowering current stock prices’* (Bartov & Bodnar, 1996, pg. 398). A common solution assumed to lower the level of information asymmetry is by disclosures, as these increases the level of confidence amongst the principals (Healy & Palepu [2001], Francis et al. [2007] and Plumlee et al. [2010]). This is also pointed out by Bartov & Bodnar (1996) as they claim that if managers want to maximize the market value of their firm, disclosures are the tool to use in order to reduce the information asymmetry. Bartov & Bodnar (1996) continue by stressing out an important factor in order to effectively reduce the information asymmetry through disclosures, namely, there must be a ‘*credible commitment to maintaining the level of disclosure in the future’* (pg. 400).

When placing the above in the context of corporate social responsibility, the agents can be considered to be senior management or board of directors of firms who seek sustainability. The principal in this scenario would be any stakeholder, or as in line with stakeholder theory, those stakeholders that have the power to affect the company. One must look at this problem as that the principal wants the agent to act or behave to their liking. For example, social responsible investors (i.e. the principal) will want managers (i.e. the agent) to be able to show them how the company has improved its activities towards a more sustainable approach. Consumers, suppliers, and other stakeholders have difficulty in determining whether or not a firm’s internal operations actually meet their social responsibility standards (Rodriguez et al., 2006). The information asymmetry arising in this situation is of importance, both to the agent and the principal. To reduce this, similarly as described above, companies can decide to disclose information on their social and environmental activities, for instance through the issue of a CSR report. Jenkins & Yakovleva (2004) consider this a crucial aspect in helping to close the information gap. Nevertheless, these disclosures must be considered credible in order for stakeholders to deem them helpful, and Rodriguez et al. (2006) push this notion further by suggesting that firms can increase their trustworthiness by employing independent third parties. Moreover, disclosures on social and environmental aspects are only considered to be helpful if a company can motivate or explain their actions in that field. This basically means that it is not sufficient for firms to simply state *what* they are doing, but more important is that firms disclose *how* they achieve this.

Nevertheless, some researchers question the above, but do so under the assumption that managers seek shareholder value maximization. In the case of when managers’ only concern is that of its shareholders, than their ‘*corporate pursuit of social and environmental objective will hurt shareholders through lower profits’* (Frynas, 2008, pg. 278). Eccles et al. (2011) also support this notion by commenting that managers that receive private benefits for embedding environmental and social policies, in order to achieve sustainability for the company, will ultimately result in negative financial implications for the company. Furthermore, if stakeholders hold the same view of managers pursuing only the interests of shareholders, then to them there is little interest in CSR reports. If this bias of stakeholders, towards sustainability disclosures, is to be reduced and taken more seriously, then it must be complemented by other regulatory mechanisms that takes into account the concerns expressed by the stakeholders (Rodriguez et al. [2006] and Bonvin [2007]).

## Transparency Benchmark[[12]](#footnote-12)

The ministry of Economic Affairs decided in 2004 to have, at least, all Dutch stock listed companies benchmarked based on their disclosures related to corporate social responsibility. The goal is to provide the public with a yearly quantification of the content and determine the quality of a firm’s social report[[13]](#footnote-13). According to the ministry of Economic Affairs, stakeholders are increasingly interested in the transparency of a firm’s social performance. The benchmark will allow stakeholders to view how companies’ score compare to previous years and to other companies. By providing this, the Ministry hopes to enable a dialogue between firms and its stakeholders that will allow both parties to understand each other’s objectives and capabilities. Also, by issuing a yearly award, ‘De Kristal Prijs’, to the highest scoring firm, the ambition is to present ‘*best practices’* that other firms can follow to improve their disclosure, and thus their score. Ultimately, the goal is that the ‘*Transparency Benchmark’* (TB) is seen as the national benchmark for sustainability in Dutch business.

However, an important remark must be made; the TB measures purely how transparent a company is, with respect to its social responsibilities, based on its disclosures. This means that one cannot deduct from a benchmark score if the company has actually achieved its social responsibilities, for example, if the results provided on waste reduction have actually occurred. Nonetheless, as previously stated, this is assumed in here based on prior literature. Bearing this in mind, the TB is also not only concerned with providing scores per organization, it also believes that these scores can be used to analyze specific sectors, for trends, etc. Furthermore, it is the intention of Economic Affairs for the scores to be used as a mean of comparison both between years as well as between companies.

Before explaining how the TB measures and scores an organization’s CSR report, it is first good to understand that organizations are obliged to participate in the research if they meet two of the following three criteria:

* Assets are worth more than 17,5 million euro
* Commercial net profit is more than 35 million euro
* Throughout the year, on average, more than 250 people were employed

These criteria hold for companies who follow *‘Richtlijn 400’[[14]](#footnote-14)*. Furthermore, all companies, listed on either the Amsterdam Exchange Index (AEX) or Amsterdam Midkap Index (AMX), are also mandatory to participate. Lastly, any university or company of whom the government is the major shareholder is also compulsory to participate in the TB. Nevertheless, in the case a company does not publish a report on sustainability, but is mandatory to report to the ministry of Economic affairs, it will be benchmarked based on the information provided. Most likely in that case, the firm will end up with a low benchmark score.

The system that the Ministry maintains, to score disclosures, was by first benchmarking companies for the year 2004. This created the baseline for future scores to be measured on. The criteria that are then used can be divided in two groups, namely ‘content’ and ‘quality’[[15]](#footnote-15). However, over the years, the Ministry of Economic Affairs has changed the criteria by which it measures companies. In 2007, it revised its criteria in order to keep up with present developments in the field of sustainability reporting. One important aspect is that it aimed to be more in line with GRI guidelines. Even though there were no significant changes to the criteria in the years 2008 and 2009, there was the introduction of an individual benchmark report to be published that contained a comparison with a peer group. In 2010, a somewhat larger revision of the criteria was introduced and is more based on the *‘Richtlijn 400’* and it explicitly sought a further connection with the GRI guidelines. In addition, relevant topics covered in ISO 26000[[16]](#footnote-16) have also been taken in to account.

Finally, some other related remarks are worth mentioning, relevant to the ‘*Transparency Benchmark’*. The companies that have to participate do so by filling in an online self-assessment. Only publicly available information can be taken in to account. This means that it must be free of charge and available on demand at any time. The self-assessment is then analyzed by an independent third party and they determine the final score. Next to that, it is important to know that, for example, the TB-score of 2012 is based on disclosures related to the year 2011. The final scores are then all published simultaneously in the third week of November each year.

# Hypotheses Development

Some firms have waited too long as the world around them changed, while others have quickly followed to start operating in a sustainable manner. Corporate Social Responsibility is something that cannot be evaded any more, especially for stock listed companies who are owned by a wide variety of shareholders. These firms can be affected by its largest stakeholders and consumers, with or without the use of media exposure. Companies have embarked on a mission, maybe guided by the GRI, to show the broad public they are not only concerned with the single bottom line number, but that they want to change and care for the social – and environmental aspects their company faces. However, companies still have to earn money to grow, safeguard their existence and invest in sustainable approaches for reducing energy – and water consumption. Even their social approach to better working conditions, reducing injuries, stopping child labor, are all forms of corporate social performance (CSP). Some of these activities are noted by the public through media coverage, be it good - or bad news, others are recognized via awards. A logical consequence for companies would then be to report their achievements and show society its performance on social responsibility. This is similar to companies who make use of quarter – and annual reports to disclose, to their shareholders and investors, what the present – and future state of the company is. By providing disclosures on the firm’s social responsibility, the firm can legitimize its position in society and comply with the wishes of its stakeholders. Nonetheless, an interesting question remains whether or not a relation exists between CSP and financial performance. To investigate this, an assumption is drawn of prior literature, as stated previously, namely that CSR disclosures capture the corporate social performance of a company. Gray (2006) describes a number of reasons why the financial performance of a company might be influenced by social disclosures. For starters, he states that *‘such disclosure might be responded to in a positive manner by socially responsible investors’* and secondly, ‘*market participants might perceive a value-relevance in a disclosure’* (Gray, 2006, pg. 78). A survey held by Radley Yeldar (2012) showed that investors use information on CSR, if provided through disclosures. In 2013, de Villiers & Marques also provided evidence on this relation by showing that higher levels of disclosures on CSR resulted in higher stock prices. Furthermore, even though evidence is not provided, Dhaliwal et al. (2011) reason that if financial disclosures reduce the costs of capital, then the same would have to hold if a company were to provide better disclosures on its sustainability practices. Older research from 1998 also came to a similar conclusion that firms will experience a negative impact on shares and profitability if it fails to meet the expectations related to CSR (McIntosh et al.). However, apart from the direction this relation might have, it is exactly this relation this thesis is interested in. In order to prove this, an event study has been chosen to isolate this possible effect. Examining a single event at a specified date, this thesis hopes to find if better disclosures are reflected in a better share price. The underlying assumption here is that the benchmark-score, presented by ‘*Transparency Benchmark’,* reflects how well a firm’s CSP is. A higher score is assumed to mean better involvement of the company in its plans and strategies towards a sustainable future. Consequently, investors are assumed to find this new information relevant and, according to the EMH, this will be immediately reflected in the share price of the company. This notion is also recognized by Graafland & Eijffinger (2004) who state that the public will only correctly perceive a firm’s CSR if its social – and environmental value creation is transparent. Moreover, they promote the use of benchmarking as this saves valuable time for collecting all relevant information concerning a company’s sustainability activities. With the use of a benchmark score, investors can quickly spot the leaders and laggards, as well as identifying if a company has improved over the years. More important even, Graafland & Eijffinger (2004) argue that in order to benchmark a company, it must deliver information. In other words, if a firm fails to deliver information concerning its CSR practices; it will fail to achieve a high score. Next to that, one can assume that if a firm is not able to present information, then it is most likely that a firm has not much accomplished in the field of sustainability and is rightfully awarded with a lower benchmark score.

Regarding the effect, of the release of the TB-scores, this thesis assumes that the market will react to this new information. And if this information is relevant for value then, through a share price change, would have to result in an abnormal return. This thesis thus tries to answer the following research question:

*“Is there an (abnormal) share price reaction, for Dutch stock listed companies in the years 2011 and 2012, after the announcement of the ‘Transparency Benchmark’ scores?”*

In order to address this problem, this thesis will first seek out an answer to some hypotheses. The outcome of testing these hypotheses will have to support the answer to the central problem in this thesis.

## Hypotheses 1 & 2

The first hypothesis is derived from the three theories mentioned in the previous chapter. Consistent with legitimacy theory, firms will disclose information on social – and environmental aspects to maintain their license to operate. According to prior research, these disclosures will define companies to be either good – or bad social responsibility performers and are, respectively, rewarded or punished by the market (Cormier et al. [1993] Cormier & Magnan [1997], Hughes [2000] and Clarkson et al. [2004]). The underlying thought is that the market will respond to good CSR performance with lower cost of capital, advantages compared to competitors and goodwill with the public. Exactly the opposite is perceived for firms who are considered to have bad CSP, which results in incurring future costs for non-compliance and bad will with society or government. For that reason, if the above holds, then the market should reward companies that score high on the ‘*Transparency Benchmark’* and should thus experience a positive share return. Similarly, if a company scores low on the TB, then the market is assumed to punish, resulting in a lower share price and hence a negative share return. However, a further distinction must be made before arriving at the first hypothesis. This distinction concerns that corporations are viewed per sector. The explanation can be found from two perspectives, namely, a) disclosures on CSP and b) the use of benchmarking. Regarding the former, one must realize that disclosures on CSR often contain information specific to a certain industry. Companies in the energy sector are more likely to be concerned with environmental policies than an insurance company. Hence, it would seem illogical to compare, for instance, a bank (i.e. more socially oriented) with an oil company (i.e. more environmentally oriented). Investors and shareholders will therefore compare companies within sectors and identify how their performance is with respect to CSR. Subsequently, the market is assumed to discipline those corporations who show a relatively low CSP compared to their peers in the same sector. The reason for this can be partly explained by the agency theory. Due to the presence of different levels of CSP amongst companies, that are considered to be similar as they operate in the same sector, the market recognizes this as the existence of information asymmetry. Firms who have something to show regarding their CSP will do so through better or more disclosures and will reduce the information gap. Consequently, the market is able to distinguish between firms with bad CSP (i.e. companies that experience a larger information gap) and companies with good CSP. What follows is that, due to the difference in information gaps between companies in the same sector, there will also be a difference in the level of transactions costs experienced and the liquidity of trading shares (Dhaliwal et al. 2011). Put differently, based on disclosures on CSP, the market will discipline or reward companies relative to other companies in the same sector.

Based on the second perspective (i.e. the use of benchmarking) on why a distinction must be made between sectors, this can be explained as follows. Benchmarking of CSR disclosures allows for more stakeholder involvement and opens a dialogue between a firm and its stakeholders, as is also the goal of the Ministry of Economic Affairs issuing the TB. A higher benchmark-score implies that a corporation has made an attempt to understand the needs and wishes of its stakeholders and, subsequently, implemented this in their sustainability plans (Eccles et al., 2011). Due to the simplicity of expressing the CSP in a score, stakeholders can engage with firms and demand action to be undertaken if the scores are considered too low compared to its competitors. The same can be demanded if the firm has failed to improve when compared to the benchmark-score of the previous year. Next to that, as the TB-score is established by independent third parties, this also brings along more credibility for stakeholders (Graafland et al., 2004). And credibility is also considered an important aspect in agency theory in which managers apply disclosures to reduce information asymmetry. Even more, firms that fail to communicate their poor CSP will experience a negative market response (Cho et al., 2012). Nevertheless, the above is assumed for companies within the same sector. The reason for this is, according to Graafland et al. (2004), that benchmarking allows for cross-company comparisons, and not cross-sector analysis. This is further reasoned by stating that one cannot determine whether social sustainability is more important than environmental sustainability (Graafland et al., 2004). Hence, the market will compare corporations within sectors and judge them based on their score relative to the others.

The first and second hypothesis this thesis will address can be stated, in alternative form, as follows:

*Ha(1)*

*The best scoring companies per sector will experience a positive share price return in reaction to the publication of the benchmark-scores.*

*Ha(2)*

*The worst scoring companies per sector will experience a negative share price return in reaction to the publication of the benchmark-scores.*

These hypotheses therefore also imply that this thesis expects that the firm with the worst score in sector X will show a negative share price return, even if its score is higher than the top score in sector Y.

## Hypotheses 3 & 4

For the second hypothesis, the previous line of reasoning is followed regarding that the market distinguishes between different sectors. However, prior to continuing this line, the assumption is made that the firm size determines to great extent the CSR efforts (Graafland & Eijffinger [2004] and de Villiers & Marques [2013]). Large companies are able to attract more capital, have larger profits and are therefore able to invest more money in the long term sustainability of the firm (Graafland & Eijffinger [2004] and de Villiers & Marques [2013]). In turn, this would result in better corporate social performance and, as companies want to disclose this, will lead to higher levels of disclosure. In other words, when placing this in the context of this thesis, the AEX corporations are assumed to have higher levels of CSP than the corporations listed on the AMX. Therefore, the AEX listed companies are assumed to have invested more money in order to bring their company in line with stakeholders’ expectations on social – and environmental aspects. The companies listed on the AMX are thus expected to have lower levels of CSP and this would result in less disclosures. Bearing the previous in mind, the line of reasoning can continue. If the market judges firms per sector and the AEX firms are assumed to have better CSP than the AMX firms, then in every sector the AEX listed firms are expected to hold the top positions regarding their benchmark score. Consequently, the top scoring firms per sector are rewarded and the lowest are punished, as described above concerning hypothesis one. If this is all taken into account together, then one can assume that overall, in general, the AEX listed firms will be rewarded by the market, leading to positive stock price returns, and the AMX listed firms will be disciplined. Hence, the third and fourth hypotheses this thesis will investigate can be stated, in alternative form, as follows:

*Ha(3)*

*AEX listed companies will experience a positive share price return in reaction to the publication of the benchmark-scores.*

*Ha(4)*

*AMX listed companies will experience a negative share price return in reaction to the publication of the benchmark-scores.*

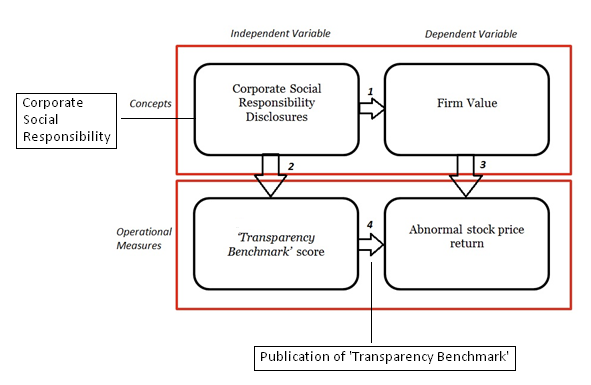
Before actually investigating the four hypotheses stated above, this thesis will first provide the method chosen to accomplish this and will presented in the next chapter. ChapterVIwill then provide statistical results.

# Methodology

## Data

If the main research question is to be broken down and presented in a Predictive Validity Framework[[17]](#footnote-17), designed by Robert Libby, this would result in the following figure.

Figure 1 – Predictive Validity Framework



From the figure above, the following items must then be gathered. The first operational measure, both the announcement date and the actual scores, can be collected from the ‘*Transparency* Benchmark’, and it contains the benchmark-scores per company, per year. In this list, the scores are further divided per category for which each company could score points based on their disclosures. The second operational measure is the daily stock return per company, per year. The DataStream[[18]](#footnote-18) database will be used to collect all stock price relevant information for all the AEX- and AMX listed companies. The relevant timeframe, for which this thesis will acquire the data, are the years 2007-2012.

Regarding the first measure of the independent variable, this thesis will work with the ‘*Transparency Benchmark*’, issued yearly by the Ministry of Economic Affairs. The reason why the TB is used has been explained in the previous chapters. Briefly summarized, CSR disclosure reflects a firm’s corporate social performance, and the TB is a measure that quantifies these disclosures by providing a benchmark-score. It is thus necessary to collect the benchmark-scores per firm, per year, and this is publicly available. Furthermore, as this thesis is concerned with a share price reaction, only the companies listed on the AEX or AMX are relevant. In other words, the 25 companies listed on the AEX, and the 25 companies listed on the AMX, are taken into account when analysing whether the announcement of the benchmark-scores leads to a reaction in the share price. In addition, within the list of benchmark-scores, the years, sectors and every disclosure item a company could score on is taken up. This is useful as it allows for some descriptive statistics on the difference between years, between sectors and, for example, if a certain disclosure item is associated with the final benchmark-score. Lastly, besides having to acquire the final benchmarks-scores per company, the exact date of announcement is needed in order to accomplish an event study. Nonetheless, the announcement date will only have to be known for the years 2011 and 2012 as the event study will focus only on the period surrounding these two events. Next to that, it is worth mentioning that the actual date, on which the final scores will be published, is known to the public beforehand, but not the actual final scores. Considering this, it might have implications for the event study as, even though the TB-score is unknown, investors might speculate on the outcome based on previous years. Nevertheless, based on the EMH, this is not of any concern to the event study performed here.

With respect to the operationalization of the dependent variable, the daily return per stock-listed corporation is needed, as well as the daily market return. Both are needed for estimation and can consequently be compared to the actual daily stock return in order to arrive at the abnormal return. Further details of this method will be explained in the next section. However, to achieve this, DataStream Navigator will first have to be explored to gather the company identifiers. Subsequently, these unique company codes can be used in DataStream and hence, the daily – and market return of the AEX- and AMX listed firms can be collected.

In short, to perform the event study, this thesis will require information, which is publicly available, from the ‘*Transparency Benchmark’* and the stock price information of AEX/AMX firms, available through DataStream.

## Method

### Event Study

In consideration of whether the benchmark-scores hold any value, relevant for investors and other parties interested in the shares of a firm, an event study is a way to test for this. Some recent researches have used this method to investigate the relation between CSR and firm performance (Bechetti et al, 2009; Godfrey et al., 2009; Cheung, 2011), for one because it allows to be more specific on the direction of the relation. Next to that, an event study also allows to better capture the perceived effect of one concept on the other. The overall purpose of this event study is to explore whether, in reaction to the announcement of the benchmark-scores, a stock price reaction is visible. More important, is the market’s reaction to the arrival of new information significant? Bechetti et al. (2009) formulate the previous by assuming that investors are rational and fully informed (as is also considered under the EMH) and that the arrival of news is expected to immediately revise the value of a firm’s stock. Correspondingly, to measure if the news has led to a significant market reaction, two issues must be considered before executing the event study. The first issue relates to determining if the stock reaction is significant and will be tested by looking at the abnormal return. The second issue relates to the timeframe used, or the event window.

### Abnormal Return

In determining if the market reacts to the announcement of the benchmark-scores, this thesis will have to obtain the abnormal returns per company. Consequently, the abnormal returns must deviate significantly from zero in order to even try and draw any conclusions from the test results. Broadly speaking, this means that the following must be done. First the data on daily stock – and market returns, estimate the daily returns for next year. The abnormal return can then be calculated by subtracting the estimated daily return from the real return observed at that time. For now, it is important to understand how this thesis will calculate the estimated daily returns for a company at a certain point in time.

As also described previously in the ‘*Data*’ section, the daily stock price returns are needed, as well as the daily market returns. Employing these two variables, the market return model can be estimated using the following formula:

(1)

Here, is the return of company *i* at time *t and* is the market return at time *t.* The *α* and *β* are parameters that will need to be calculated and are different for every firm. The first parameter is also known as the intercept and the second parameter is better known as describing the systematic risk a firm faces. The last term, , is the error term.

This thesis then uses formula (1) to estimate *α* and *β,* per corporation, by running an Ordinary Least Square regression (OLS) using the data, on both returns, from the previous year. What follows is a method of estimating the daily stock returns, per corporation, for the next year. As the *α* and *β* are firm specific, inserting the actual market return at day *t* next year, this will result in the projected stock return on that same day *t* next year. Subsequently, the calculation of the abnormal return at day *t* for firm *i* is as follows:

(2)

As the hypotheses posed in this thesis look at the stock reaction of individual firms, these two formulas will suffice in providing an answer ultimately. Furthermore, with these formulas and the data collected, this thesis allows calculating the expected return of a firm at any point in time. However, as it is an event study that aims at capturing the effect of the publication of all TB-scores, only a small timeframe will be relevant to calculate the abnormal return for.

### Event Window

As described above, in order to calculate the abnormal return per company, the data from previous year must be employed in order to estimate the return for next year. Nonetheless, the only period of interest to calculate the abnormal return for, is the time surrounding the event of discussion. In deciding on an acceptable event window for calculating the abnormal return, one concern must be taken into account. The window must be long enough to actually capture the possible effect. Even though this thesis assumes, based on EMH, that any new information will immediately be incorporated into a new stock price, it is important to consider that it might not be the case. A second concern relates to event studies in general and is about possible secondary effects that could explain the statistical significance observed. Put differently, if another event happened on the same day the benchmark-scores are published, one must take great care in contributing the event of discussion to the observed effect. Prior to performing the event study, one can thus identify any possible influential events that have occurred on that same day, or just before or after the announcement of the TB-scores.

To continue, this thesis will suggest an event window of ten days prior to the announcement, to ten days after the announcement. The following figure summarizes the above considering the estimation of the abnormal return and the event window.

Figure 2 – Estimation period & Event window

1/1 2010

1/1 2011

1/1 2012

Used for estimation period 1/1 -31/12 2011

*t=0*

*t = -10*

*t = +10*

Event window

# Results

## Descriptive Statistics

Regarding the first hypothesis to be tested in the next section, it seems logical to begin with describing the total scores on the ‘*Transparency Benchmark’* per industry (see Table 1 on next page). This also helps to justify the distinction that this thesis has made, i.e. by assuming that the market will consider firms per industry and reward or punish firms relative to their competitors in the same industry. The ‘*Consumer Goods’* sector is clearly the best performing sector. With a difference of approximately 25 points, the mean in this sector is higher every year than any other sector. Without drawing any conclusions from this, one could argue it is because firms, such as Unilever and Heineken, are more closely connected to the mass public and are more directly influenced by the demand of their customers. In turn, companies in the ‘*Consumer Goods’* sector might feel more obliged to actively play a role in leading the way to a more sustainable future. The sector ‘*Industrials’ is* probably the quickest to pick up the pace in the last three years, leading with the highest means from 2010-2012 (i.e. after the ‘*Consumer Goods’* sector). Furthermore, the sector ‘*Industrials’* delivers two firms in the top 5, even taking the number one spot in the last two years. Here could be argued that due to damages to the environment, that are brought to light by the media, the broader public is becoming more aware of the harm specific companies can bring to the environment. However, a similar resemblance is not detected with banks and insurance companies, who have been under constant fire by the media ever since the credit crisis of 2007. The average of the *‘Financials’* sector is lowest of all for the last two years, and together with the sector *‘Consumer Services’* these two sectors report even a decline by their best scoring companies.

Considering the second hypothesis, this thesis also made a distinction between companies listed on the AEX and AMX (see Table 2 on next page). Mainly, the average is in every year higher for the group AEX compared to the group of companies in AMX. Even more, the difference between the means is increasing over time showing a mean of 150,3 for AEX in 2012 compared to a mean of 95,2 for AMX. Again, without inferring any conclusions from this, it might suggest that the largest companies in the Netherlands also show, on average, higher benchmark-scores than companies listed on the AMX. Another noteworthy point is that it seems that firms in group AEX are, as of 2010, trying harder to catch up with their competitors, than firms in group AMX. The standard deviation has declined between 2010-2012 from 42,4 to 37,6 for the group AEX, whilst for the group AMX the standard deviation has increased from 40,2 to 52,9. In other words, it might suggest that companies listed on the AMX are putting less effort in improving disclosures related to CSR.

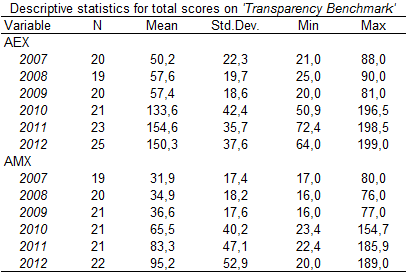
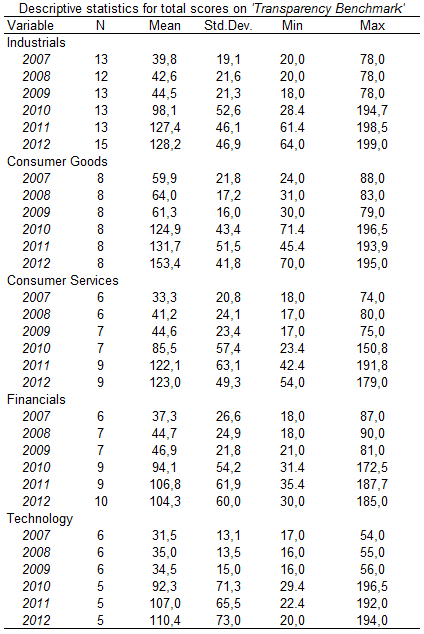


Table 2

Table 1

Before continuing to answer the hypotheses this thesis has proposed, it is also important to describe the data in more detail relating to the daily return of the companies. As this thesis uses an OLS regression on the daily return of the previous year, in order to predict the expected return, a total of three companies had to be eliminated due to insufficient data on returns. Aperam and TNT-Express had no available daily share price information for the year 2010 and thus did not allow predicting the expected return for 2011. With regard to 2012, Logica has been eliminated from the sample as the daily returns were only available up until august of 2012. As the event takes place in November, this would thus not allow relating the event to the abnormal return as it cannot be observed. Furthermore, considering the availability of the ‘*Transparency Benchmark’* scores, Arcelormittal, Nieuwe Steen and Logica had to be removed for the year 2011. No further adjustments in the sample were necessary for 2012. In total, 43 companies were left to be examined for the year 2011 and 47 companies for the year 2012.

## Hypotheses Testing

In 2011, the announcement was on the 21st of November after the market had closed, thus requiring the stock price return per company on the 22nd of November. For the year 2012, the event took place on the 22nd of November; hence, the stock price return relevant for testing is contained in 23rd of November. Furthermore, this thesis also tested the hypotheses using the sum of returns of the three days following the announcement. The results of these tests are taken up in the Appendix in Table 7 – Table 10.

### Hypotheses 1 and 2

Based on the five sectors in which all companies have been divided, a ranking was possible based on the total score on the ‘*Transparency Benchmark’.* Next, this thesis considered the top half, based on the total scores, to be the best in their sector, and the other half as the worst. As the first two hypotheses state, this thesis assumes that the firms with the best (worst) scores in their sector will experience a positive(negative) return the day after the publication of the *‘Transparency Benchmark’.* Even more, one could bundle the firms with the highest scores per sector together and execute a binomial probability test, as all these firms are expected to show a positive return. The fact that this thesis has chosen to test these hypotheses using a probability test is due to the fact that after the ranking has been made, the height of the score is of no importance. Secondly, the same holds for the stock price return observed as it not important what number the return is, merely if it is positive or not. Put differently, for the first hypothesis, the best scoring firms per sector combined and awarded a 1 (0) if the return is larger (smaller) than 0. Regarding the second hypothesis, the exact opposite holds when assigning either a 1 or 0 based on their return. In Table 3 and Table 4 below, the outcome of the probability tests are shown and have been further divided in years.

Before interpreting these results, it must first become clear what the null hypothesis is. The assumption that is drawn here is that under the null hypothesis, the probability is 0.5. In other words, every company has a 50% chance of showing either a positive – or negative return. Hence, in 2011 for the best scoring firms, the null hypothesis will expect 11.5 firms to experience a positive return (see Table 3 next page). Next to that, the assumption is that the number of firms experiencing a positive (negative) return is higher than expected. Therefore, the only results of concern are those stated with the one-sided test. Table 3 provides results for Ha(1) and, only for the year 2012, it is allowed to state that the null hypothesis can be rejected as the value of 0.00 is lower than the critical value of 0.05. Put differently, the number of best scoring firms showing a positive stock price return is significantly higher than expected. Nonetheless, the null hypothesis for 2011 cannot be rejected as the number of firms showing a positive return is only 4 on a total of 23. The value of 0.99 is much higher than the critical value of 0.05. In other words, the number of firms showing a positive return is not significantly higher than expected. However, the observed four firms in 2011 are significantly lower than the expected number of firms. The value of 0.00 is below the critical value of 0.05 and it can thus be stated that a significant number of firms, with the highest benchmark-scores in their industry, have actually experienced negative stock price returns. This is obviously against the line of reasoning as suggested previously and therefore the null hypothesis related to Ha(1) cannot be rejected.

Focusing on Table 4 (see next page), containing the output needed to answer whether or not Ha(2) holds, similar conclusions can be made. Again only one year shows a significant result, this time for 2011. The null hypothesis for 2011 can thus be rejected, assuming a 5% significance level, as the value of 0.00 is far below the critical value. Therefore, for 2011, the number of firms having experienced a negative stock price return is significantly higher than expected. It thus holds to say that the companies with the lowest score on the *‘Transparency Benchmark’* also have experienced a negative return. Nonetheless, for 2012 the null hypothesis cannot be rejected as 0.99 is much higher than 0.05, the critical value. Yet again, as seen similarly in Table 3, the fact that only two firms are observed showing a negative return is significantly lower than expected. This implies that the number of companies that experienced a positive return, and also having the lowest benchmark-scores, is significantly larger than expected.



Table 4

Table 3

Considering the sum of returns for a three day period, the results are very similar. Table 7 and Table 9 in the Appendix show further details. The only difference is that for 2012, the worst scoring firms in the industry no show longer a significant result and thus it no longer implies that these firms actually experienced a positive return.

### Hypotheses 3 and 4

Following the hypotheses development, the third and fourth hypotheses are concerned with a distinction between companies listed on the AEX and those listed on the AMX. As stated, larger corporations are assumed to have invested more CSR and therefore show higher levels of corporate social performance. In turn, corporations will want to disclose their CSP which will lead to increasing and more detailed social disclosures and thus a higher benchmark-score. Considering that the previous hypotheses stated that the highest scores per industry are to experience a positive return after the publication, these companies are hypothesized to be listed on the AEX. In Table 5 and Table 6 (see next page) the results of a binomial probability test are shown. The results are similar as to those found with Ha(1) and Ha(2).

With regard to Ha(3), also here the null hypothesis is that half of the AEX listed companies is assumed to have a positive return. The difference between 2011 and 2012 is again large and only for 2012 can the null hypothesis be rejected due to an observed value of 0.00, which is lower than the 5% significant level. Put differently, there is evidence to assume that the number of companies listed on the AEX, and showing a positive return, is significantly higher than expected. Notwithstanding that for 2011 the opposite can be assumed as the two observed firms are significantly lower than expected. Thus the number of firms, listed on the AEX in 2011 and experienced a negative return after the publication of the ‘*Transparency Benchmark’*, is significantly higher than expected. Evidence for the previous can be found in the value of 0.00, which is lower than the critical value of 0.05.

Related to the fourth hypothesis, Ha(4), similar conclusions can be made. As seen below in Table 6, the AMX firms in 2011 show a number significantly higher than expected. The null hypothesis for 2011 can thus be rejected. In 2012, the number of firms observed is significantly lower than expected, thus implying that the AMX firms actually experienced a positive return.

Based on the previous results, it is worth noting that in 2011, every group that has been tested showed a significant number of firms that experienced negative returns. The exact opposite holds for 2012 in which the firms experienced positive returns. Hence, all hypotheses are rejected in only one of the two years in consideration.

Table 5



Table 6



Similar to the outcomes above, the tests with a three day return show similar results as can be seen in Table 8 and Table 10 in the Appendix. Also in this case however, the AMX listed firms in 2012 no longer show a significant result that would imply these firms to actually have experienced a positive return, rather than negative.

## Abnormal Return

The main goal of this thesis is still to find an answer to the main research question. By trying to find supporting evidence through the four hypotheses just discussed, here the results on the abnormal returns will be presented. As described, an estimation window was used that contained the daily return per company of the previous year. With the knowledge of previous daily – and market return, an OLS regression was performed using formula (1). See Figure 3 and Figure 4 in the Appendix for the distribution of daily return in the estimation window. After having removed the top and bottom 1% of the outliers per company, this allowed for a better a prediction based on normal data. To continue based on the OLS regression, the expected return was calculated for the event window per company. The abnormal return was found by subtracting the expected return from the actual return. The reason this thesis has chosen to obtain the abnormal return is because a significant deviation from zero might imply there was new information available. It does, however, also assume that new publicly available information is immediately incorporated in the stock price of a company. In other words, the evidence is hoped to be found in the day after the publication of the ‘*Transparency Benchmark’*, as the scores are made public after the market is closed the day before.

In Figures 5 -8 in the Appendix, the Cumulative Abnormal Return (CAR) for the event window has been calculated per year and per index. Basically this is the sum of abnormal return per day for all companies, listed on either the AEX or AMX, and divided by the number of companies on that index. This is further accompanied with a line showing the market return. From this it can be noted that for 2011, for both indices, the CAR is negative for almost every day in the ten days prior the announcement. Even more, it reaches the lowest point in the whole event window on the day of the announcement. After the announcement at t=0, the trend of both the CAR and market return is rising in the ten days after. Nonetheless, even though the CAR is increasing immediately the day after the announcement, the value is still negative. Moreover, it is only after three days that the CAR is positive again. With respect to 2012, the CAR hits its lowest point four days prior to the announcement, in both indices, and seems to restore in the days leading up to the event. Moreover, the day after the benchmark-scores have been made public, the CAR shows a positive return. However, this one day was just a peak as the CAR is dropping towards zero in the days after.

Looking at Table 11 and Table 12 in the Appendix, all companies are listed for both 2011 and 2012 showing the abnormal return and the score of the t-test. The latter is calculated to determine whether the abnormal return deviates significantly from zero. In the last column the companies are starred based on the 1%, 5% or 10% significance level. With regard to 2011, six of the 43 companies show an abnormal return that is significantly different from zero. For 2012, the count is 5 out of 47 companies. In any case it is easily stated this these numbers do not count up to a significant amount of companies exhibiting abnormal returns significantly different from zero. Further details show that for 2011, the six significant results are probably random. Half is AEX, half show positive return and the companies are distributed over four different industries. The same holds for 2012, except that four out of five show a positive abnormal return, yet the sample is too small to state anything about this finding.

# Discussion

## Link with theory

Tracing back to the legitimacy theory, this theory described how firms have to meet the expectations of the public. If firms fail to comply with the expectations, this is considered a failure and firms might lose their right to exist. A solution for firms to meet the expectations is by disclosing more and better information reflecting their sustainability approach. In a way, this might explain the increasing trend in higher benchmark-scores seen over the years. Companies might thus see the potential of informing the broad public by disclosures and at the same time aim at legitimizing their existence. Nonetheless, the theory does suggest that the market punishes those firms who fail to meet the expectations. In other words, firms that show lower benchmark-scores, relative to their direct competitors, are considered to have failed in meeting the public’s demand and are expected to be disciplined by the market. The results, however, do not support this theory as the best scoring companies experienced a negative return after the publication of the ‘*Transparency Benchmark’.* Nevertheless, it cannot be stated that the companies are indeed not punished for their low score, as this thesis only aimed at the announcement.

With respect to the stakeholder theory, it was suggested that the most powerful stakeholders a company faces can have an influence on the future of the company if it fails to listen and act to their demands. As the benchmark-score is made up of several items that relate to stakeholders and how a firm deals with this group, the benchmark-score reflects in part the interest it has in its major stakeholders. Furthermore, the descriptive statistics show an upward trend in the benchmark-scores for almost every company. It might thus imply that firms actually start to act more in favour of their major stakeholders, recognize their importance to the firm’s future and no longer solely focus on shareholders. On the other hand, the results show little evidence to suggest that the stakeholders immediately punish or reward firms based on the benchmark-score. This thesis suggested that the market, consisting of firm stakeholders, would see this score as having either passed or failed to listen to their demands and that the appropriate action would follow immediately. Yet again, the results are inconclusive and it can be stated that the quantification of the disclosures, reflected by the benchmark-score, is considered to hold no immediate value that is relevant for the market to adjust share prices.

The last theory upon which this thesis is based, is the agency theory. It is a problem of agents versus principals, or in other words, the boards of directors of corporations versus any external party that demand certain actions of the boards. Consumers, producers, the government and the media are examples of external parties that can demand firms to take more action in seeing to it that a firm starts to operate sustainably. However, due to the asymmetry in information between the agent and principal, firms use disclosures in order to reduce this. By improving company disclosures in both quantity and quality, this allows to elaborate on information that the principal needs. Consequently, more and better disclosures are supposed to translate in higher benchmark-scores. In turn, this can be viewed as a monitoring tool for the principal in determining whether the agent has done a proper job. The fact that, generally speaking, the benchmark-scores are increasing over time could thus be explained by agents trying to better inform the broad public, the government or the media. However, the results of the hypotheses do not further support the notion that companies failing to address the information asymmetry (i.e. firms that achieve a low benchmark-score), are also disciplined by the market. Furthermore, the results on the abnormal return provide little evidence to suggest that the information, in the publication of the TB, is of any value. Again, however, it is not yet determined if the public does nothing with the content of the score at a later stage.

## Other factors of influence

As this thesis focuses on a particular event set at one point in time, the results might be influenced by other, more powerful forces. In this case, the study focuses on stock price reactions after the announcement of the benchmark-scores. In general, the market reacts to new information if it holds value. If one would look at the news and events in the period surrounding the announcement date of the TB in 2011, two events can be considered to be of particular importance. The first event relates to news from the United States of America about the ongoing discussion on the solution to their public debt. In the whole of Europe this led to unrest on the stock markets and some even closed at its lowest point in seven weeks. The day after the announcement of the TB, European stock markets continued in unrest as the interest on Spanish government bonds rose to its highest point. The market perceived this as an indication that there was still no real solution to the debt crisis. With regard to any events surrounding the announcement of the benchmark-scores in 2012, there is only one that might be of particular interest. The day after the announcement, the stock market experienced positive returns as the market seems to have found faith again in resolving the crisis in Greece. After one of the worst weeks in months, the week in which the TB was announced, the market anticipated that a new loan would be granted to Greece that would not only solve their problem, but prevent a European problem. In other words, in both years the stock markets were still worried with the debt crisis and if the problem would be contained. This brought along uncertainty as long as governments could not agree on how the situation had to be resolved. In essence, it is more likely the public was at that moment more worried with their financial situation, rather than if companies achieved to score highly on non-financials. Taken overall, these events might thus explain why the results on the hypotheses and main research question are inconclusive. Even more, if the ‘*Transparency Benchmark’* would be valued highly and was anticipated yearly by the public it might have shown significant results. The fact that it does not might explain that the TB is not considered important immediately, or is overshadowed by other events as those just mentioned.

## Interpretation

Generally speaking, the results are inconclusive. Even though theory could help explain the upward trend in the benchmark-scores, the results do not suffice to support both the hypotheses and the research question. This thesis aimed at finding evidence to the question whether the announcement of the TB led to a significant share price reaction due to the arrival of new information. The outcome of the tests performed show little to no evidence to suggest that the market considers the benchmark-scores as value relevant. At least not immediately, for it has not been tested whether the market incorporates a company’s score at a later stage. To test this is also probably difficult as the market considers many different aspects in deciding in which firms it will invest. With respect to the results on the abnormal returns calculated, the number of firms is small of those that have showed significant deviation from zero. Furthermore, these companies are mostly random in sector, index and direction of the return observed. Two companies are worth mentioning. DSM is the only company that is in line with both alternative hypotheses and was found to have a positive abnormal return significantly different from zero. Albeit it only for 2012, DSM fits perfectly in the theory of this thesis, having scored the highest of all firms in the past two year, thus making DSM the best in its sector and of the AEX listed companies. In other words, because the benchmark-score made clear that DSM was best in its sector and listed on the AEX, the expectation was a positive return. The fact that it also showed a positive abnormal return that deviates significantly from zero, might thus imply that the market considered this information as relevant. Almost exactly the same holds for Delta Lloyd. Listed on the AMX it showed, in 2012, a negative abnormal return. However, Delta Lloyd is amongst the highest scores in its industry and thus a positive return was expected.

Besides the previous, the companies with significant results related to the abnormal return are all, except DSM, not the best in their sector. If one would assume that the announcement of the TB does have a strong market reaction, then firms with higher benchmark-scores would also have had to show significant results. In other words, if the number one companies on the TB, per sector, would have shown positive abnormal returns significantly different from zero, then this might have indicated something useful. The fact that they are not would suggest that the market did not consider this as new information brought forth by the publication of the ‘*Transparency Benchmark’.*

# Conclusion

It was in 2006 that Gray stated that due to the growing concern for Corporate Social Responsibility by the public, it has led firms to start doing business in a more sustainable way. With the increase of sustainability plans involving anything from waste reduction to community work, Corporate Social Performance of firms improved. The problem that arose is that such actions, with often non-financial consequences, are difficult to measure and the most obvious solution is to disclose this in special CSR reports. In other words, disclosures are used to tell the public how, and to what extent, a firm is involved with the social – and environmental aspects it touches. As almost every large firm publishes a yearly CSR report, the ‘*Transparency Benchmark’* decided to quantify these disclosures in order to inform stakeholders and consumers what CSR reports are actually worth. Based on prior literature, this thesis then tried to find an answer to whether the annual publication of the TB brought along new information that would immediately be incorporated by the market in new share prices. Even though the benchmark-scores have risen in the last years, no further evidence was found that supports the notion that the publication is considered as new information. This is contrary to what Plumlee et al. (2010) and Clarkson et al. (2010) suggest, namely, that CSR disclosures do hold value. Of course this thesis only centred on one point in time, rather than considering the overall value CSR disclosures might have over time. Furthermore, the tests of hypotheses showed that almost every company, regardless of the index and height of the score relative to their competitors, had experienced a negative (positive) return in 2011 (2012). This is different to what prior research suggested, namely, the existence of a positive relation between CSR disclosure and firm performance (Dhaliwal et al. [2012] and de Villiers & Marques [2013]). Even though the benchmark-scores are increasing over time, it cannot be concluded that firms put more effort in CSR and thus increase their disclosures to account for this. Nonetheless, it can also not be concluded that the '*Transparency Benchmark´* is of no use at all. Market participants might actually base their investments partly on what the score is of that company. If one is to assume the measures of the TB are correct and that disclosures perfectly resemble the actual CSP of a company, than the only implication this thesis has supported is that the Dutch listed companies are improving towards a more sustainable approach.

Moreover, in spite of the inconclusive results, this thesis has added value to the practical implications of the ´*Transparency Benchmark’.* First of all, it appears that the market does not consider the publication as new information. Secondly, by examining the listed companies per sector and per index, it became clear that there exists quite a large gap between sectors, as well as between indices. This might provide as a starting point for future research as to why, for example, the technology sector seems to fail in addressing issues regarding CSR. Or why AMX listed companies seem less involved in sustainability then firms listed on the AEX. Lastly, as this thesis only focussed on the event itself, it might be worth trying to research if the benchmark-scores are considered at a later stage, for example in the decision making process by green investors.

## Limitations

The first relates to the announcement of the TB as the exact date on which the scores are published is known beforehand, except for the actual scores. In other words, market participants might speculate on the outcome of the scores in the days prior to the publication, thus possibly dampening the effect on the day itself. Secondly, this thesis assumes stock prices will immediately adjust upon the arrival of new information. This assumption is made to better isolate a possible of effect of the publication, but in reality, new information might influence the market for the next couple of days. Thirdly, the benchmark-scores of e.g. 2012 relate to CSR disclosures related to the year 2011. In a way one could thus argue how ‘new’ the information is. Fourthly, this thesis builds on the notion that the market will rely on the benchmark-score to determine the quality of CSR reports. However, CSR reports are already made public months before the benchmark-score is published. Consequently, the market might already have adjusted share prices based on their own interpretation of CSR reports. Lastly, McWilliams et al. (2006) suggests that stock price effects are not a proper measure for CSR effects. The explanation for this is that social – and environmental activities are mostly a concern for non-financial stakeholders who have no interest in the financial position of a company. Put differently, stakeholders that want firms to improve their CSR activities are not active in the buying and selling of shares. The release of the benchmark-scores will thus not entice a stock price reaction by those same stakeholders, but rather demand for more and better disclosures next year.

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# Appendix

Figure 3

Figure 4



Table 7

Table 8

Table 9

Table 10



Figure 5

Figure 6





Figure 8

Figure 7

Table 11 – T-test on significant difference from zero for Abnormal Return 2011

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company | Industry | Abnormal Return | T-test | Significant |
| AALBERTS | Industrials | 0,028931 | 2,114 | \*\* |
| AEGON | Financials | -0,016171 | -0,657 |  |
| AHOLD | Consumer Service | -0,027837 | -2,114 | \*\* |
| AIRFRANCE-KLM | Consumer Service | -0,051778 | -1,438 |  |
| AKZO-NOBEL | Industrials | 0,010112 | 0,508 |  |
| AMG | Industrials | -0,068871 | -2,337 | \*\* |
| ARCADIS | Industrials | -0,020098 | -1,485 |  |
| ASM | Technology | 0,003940 | 0,280 |  |
| ASML | Technology | -0,004993 | -0,582 |  |
| BAM | Industrials | -0,026423 | -0,899 |  |
| BINCKBANK | Financials | 0,003878 | 0,307 |  |
| BOSKALIS | Industrials | -0,007833 | -0,568 |  |
| BRUNEL | Consumer Service | -0,003678 | -0,233 |  |
| CORIO | Financials | -0,011644 | -0,603 |  |
| CSM | Consumer Goods | -0,012108 | -0,398 |  |
| DELTA LLOYD | Financials | 0,018868 | 0,755 |  |
| DSM | Industrials | -0,005450 | -0,607 |  |
| EUROCOMMERCIAL | Financials | 0,008022 | 0,686 |  |
| FUGRO | Industrials | -0,008638 | -0,490 |  |
| HEIJMANS | Industrials | -0,095018 | -2,893 | \* |
| HEINEKEN | Consumer Goods | 0,004409 | 0,454 |  |
| IMTECH | Technology | 0,011587 | 0,756 |  |
| ING | Financials | -0,016254 | -0,466 |  |
| KPN | Technology | -0,007919 | -0,660 |  |
| NUTRECO | Consumer Goods | 0,020844 | 1,568 |  |
| PHILIPS | Consumer Goods | 0,012266 | 1,165 |  |
| POSTNL | Consumer Service | -0,019037 | -0,391 |  |
| RANDSTAD | Consumer Service | 0,001209 | 0,061 |  |
| REED ELSEVIER | Consumer Service | 0,001093 | 0,112 |  |
| SBM OFFSHORE | Industrials | 0,001574 | 0,090 |  |
| SHELL | Industrials | -0,005311 | -0,602 |  |
| TEN CATE | Industrials | 0,009687 | 0,561 |  |
| TKH GROUP | Technology | -0,021597 | -0,638 |  |
| TOM TOM | Consumer Goods | -0,037814 | -1,516 |  |
| UNIBAIL-RODAMCO | Financials | 0,023507 | 1,765 | \*\*\* |
| UNILEVER | Consumer Goods | 0,016858 | 1,731 | \*\*\* |
| UNIT FOUR | Consumer Service | 0,002642 | 0,124 |  |
| USG PEOPLE | Consumer Service | -0,022758 | -0,834 |  |
| VASTNED RETAIL | Financials | -0,010870 | -0,650 |  |
| VOPAK | Industrials | -0,006967 | -0,410 |  |
| WERELDHAVE | Financials | -0,008093 | -0,674 |  |
| WESSANEN | Consumer Goods | -0,020575 | -0,935 |  |
| WOLTERS KLUWER | Consumer Goods | -0,007270 | -0,493 |  |
| \*, \*\*, \*\*\* represent respectively the 1%, 5% and 10% significance level | | | | |

Table 12 - T-test on significant difference from zero for Abnormal Return 2012

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company | Industry | Abnormal Return | T-test | Significant |
| AALBERTS | Industrials | 0,011342 | 1,576 |  |
| AEGON | Financials | 0,006967 | 0,696 |  |
| AHOLD | Consumer Service | 0,008158 | 0,976 |  |
| AIRFRANCE-KLM | Consumer Service | 0,015345 | 0,670 |  |
| AKZO-NOBEL | Industrials | 0,012488 | 1,245 |  |
| AMG | Industrials | 0,003555 | 0,519 |  |
| APERAM | Industrials | 0,018356 | 1,205 |  |
| ARCADIS | Industrials | 0,005048 | 0,466 |  |
| ARCELORMITTAL | Industrials | 0,005423 | 0,582 |  |
| ASM | Technology | 0,018473 | 1,470 |  |
| ASML | Technology | 0,030091 | 2,449 | \*\* |
| BAM | Industrials | 0,003094 | 0,220 |  |
| BINCKBANK | Financials | -0,011998 | -0,964 |  |
| BOSKALIS | Industrials | 0,001362 | 0,182 |  |
| BRUNEL | Consumer Service | -0,009849 | -0,903 |  |
| CORIO | Financials | 0,006606 | 0,539 |  |
| CSM | Consumer Goods | 0,005338 | 0,389 |  |
| DELTA LLOYD | Financials | -0,017758 | -1,768 | \*\*\* |
| DSM | Industrials | 0,023614 | 2,455 | \*\* |
| EUROCOMMERCIAL | Financials | 0,001427 | 0,152 |  |
| FUGRO | Industrials | 0,009647 | 0,701 |  |
| HEIJMANS | Industrials | 0,041145 | 2,574 | \*\* |
| HEINEKEN | Consumer Goods | 0,008904 | 1,047 |  |
| IMTECH | Technology | -0,026051 | -0,933 |  |
| ING | Financials | 0,004637 | 0,438 |  |
| KPN | Technology | 0,011106 | 0,347 |  |
| NIEUWE STEEN | Financials | 0,006612 | 0,448 |  |
| NUTRECO | Consumer Goods | 0,009661 | 1,471 |  |
| PHILIPS | Consumer Goods | -0,001563 | -0,175 |  |
| POSTNL | Consumer Service | -0,008664 | -0,479 |  |
| RANDSTAD | Consumer Service | 0,003000 | 0,248 |  |
| REED ELSEVIER | Consumer Service | 0,008891 | 1,242 |  |
| SBM OFFSHORE | Industrials | -0,013124 | -0,644 |  |
| SHELL | Industrials | -0,000630 | -0,138 |  |
| TEN CATE | Industrials | 0,004388 | 0,552 |  |
| TKH GROUP | Technology | 0,000504 | 0,071 |  |
| TNT-EXPRESS | Consumer Service | -0,002611 | -0,114 |  |
| TOM TOM | Consumer Goods | 0,004466 | 0,508 |  |
| UNIBAIL-RODAMCO | Financials | 0,005491 | 0,532 |  |
| UNILEVER | Consumer Goods | 0,005911 | 1,024 |  |
| UNIT FOUR | Consumer Service | 0,025734 | 2,381 | \*\* |
| USG PEOPLE | Consumer Service | 0,004332 | 0,433 |  |
| VASTNED RETAIL | Financials | 0,005350 | 0,735 |  |
| VOPAK | Industrials | 0,002987 | 0,289 |  |
| WERELDHAVE | Financials | 0,011398 | 1,262 |  |
| WESSANEN | Consumer Goods | -0,001448 | -0,117 |  |
| WOLTERS KLUWER | Consumer Goods | 0,007703 | 0,878 |  |
| \*, \*\*, \*\*\* represent respectively the 1%, 5% and 10% significance level | | | | |

Table 13 – Opening- and Closing share price and TB score for t=0 – t=3 in 2011

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Company | Index | Industry | Date | Opening Price | Closing Price | TB-score |
| AALBERTS | AMX | Industrials | 21-nov-11 | 10,56 | 10,13 | 81 |
| AALBERTS | AMX | Industrials | 22-nov-11 | 10,17 | 10,29 | 81 |
| AALBERTS | AMX | Industrials | 23-nov-11 | 10,17 | 10,01 | 81 |
| AALBERTS | AMX | Industrials | 24-nov-11 | 10,05 | 10,15 | 81 |
| AEGON | AEX | Financials | 21-nov-11 | 2,83 | 2,72 | 187,7 |
| AEGON | AEX | Financials | 22-nov-11 | 2,75 | 2,65 | 187,7 |
| AEGON | AEX | Financials | 23-nov-11 | 2,63 | 2,60 | 187,7 |
| AEGON | AEX | Financials | 24-nov-11 | 2,63 | 2,59 | 187,7 |
| AHOLD | AEX | Cons. Services | 21-nov-11 | 9,35 | 9,35 | 175,4 |
| AHOLD | AEX | Cons. Services | 22-nov-11 | 9,41 | 9,09 | 175,4 |
| AHOLD | AEX | Cons. Services | 23-nov-11 | 9,09 | 9,20 | 175,4 |
| AHOLD | AEX | Cons. Services | 24-nov-11 | 9,23 | 9,05 | 175,4 |
| AIRFRANCE-KLM | AEX | Cons. Services | 21-nov-11 | 4,08 | 3,82 | 170 |
| AIRFRANCE-KLM | AEX | Cons. Services | 22-nov-11 | 3,85 | 3,58 | 170 |
| AIRFRANCE-KLM | AEX | Cons. Services | 23-nov-11 | 3,56 | 3,48 | 170 |
| AIRFRANCE-KLM | AEX | Cons. Services | 24-nov-11 | 3,64 | 3,83 | 170 |
| AKZO-NOBEL | AEX | Industrials | 21-nov-11 | 33,54 | 32,44 | 192,6 |
| AKZO-NOBEL | AEX | Industrials | 22-nov-11 | 32,83 | 32,72 | 192,6 |
| AKZO-NOBEL | AEX | Industrials | 23-nov-11 | 32,36 | 32,70 | 192,6 |
| AKZO-NOBEL | AEX | Industrials | 24-nov-11 | 32,93 | 32,68 | 192,6 |
| AMG | AMX | Industrials | 21-nov-11 | 8,45 | 7,85 | 82,4 |
| AMG | AMX | Industrials | 22-nov-11 | 7,96 | 7,29 | 82,4 |
| AMG | AMX | Industrials | 23-nov-11 | 7,25 | 7,00 | 82,4 |
| AMG | AMX | Industrials | 24-nov-11 | 7,06 | 7,18 | 82,4 |
| ARCADIS | AMX | Industrials | 21-nov-11 | 12,54 | 12,27 | 112 |
| ARCADIS | AMX | Industrials | 22-nov-11 | 12,29 | 11,94 | 112 |
| ARCADIS | AMX | Industrials | 23-nov-11 | 11,75 | 11,75 | 112 |
| ARCADIS | AMX | Industrials | 24-nov-11 | 11,73 | 12,00 | 112 |
| ASM | AMX | Technology | 21-nov-11 | 20,27 | 19,48 | 22,4 |
| ASM | AMX | Technology | 22-nov-11 | 19,59 | 19,32 | 22,4 |
| ASM | AMX | Technology | 23-nov-11 | 19,35 | 19,22 | 22,4 |
| ASM | AMX | Technology | 24-nov-11 | 19,29 | 18,93 | 22,4 |
| ASML | AEX | Technology | 21-nov-11 | 29,11 | 28,62 | 143 |
| ASML | AEX | Technology | 22-nov-11 | 28,98 | 28,40 | 143 |
| ASML | AEX | Technology | 23-nov-11 | 28,01 | 28,22 | 143 |
| ASML | AEX | Technology | 24-nov-11 | 28,52 | 28,31 | 143 |
| BAM | AMX | Industrials | 21-nov-11 | 2,37 | 2,21 | 185,9 |
| BAM | AMX | Industrials | 22-nov-11 | 2,23 | 2,14 | 185,9 |
| BAM | AMX | Industrials | 23-nov-11 | 2,12 | 2,11 | 185,9 |
| BAM | AMX | Industrials | 24-nov-11 | 2,13 | 2,23 | 185,9 |
| BINCKBANK | AMX | Financials | 21-nov-11 | 7,61 | 7,26 | 43,4 |
| BINCKBANK | AMX | Financials | 22-nov-11 | 7,28 | 7,20 | 43,4 |
| BINCKBANK | AMX | Financials | 23-nov-11 | 7,14 | 7,09 | 43,4 |
| BINCKBANK | AMX | Financials | 24-nov-11 | 7,10 | 7,04 | 43,4 |
| BOSKALIS | AEX | Industrials | 21-nov-11 | 21,68 | 20,66 | 111,4 |
| BOSKALIS | AEX | Industrials | 22-nov-11 | 20,89 | 20,40 | 111,4 |
| BOSKALIS | AEX | Industrials | 23-nov-11 | 20,22 | 20,32 | 111,4 |
| BOSKALIS | AEX | Industrials | 24-nov-11 | 20,51 | 20,68 | 111,4 |
| BRUNEL | AMX | Cons. Services | 21-nov-11 | 24,68 | 23,43 | 42,4 |
| BRUNEL | AMX | Cons. Services | 22-nov-11 | 23,52 | 23,14 | 42,4 |
| BRUNEL | AMX | Cons. Services | 23-nov-11 | 23,02 | 22,20 | 42,4 |
| BRUNEL | AMX | Cons. Services | 24-nov-11 | 22,38 | 22,50 | 42,4 |
| CORIO | AEX | Financials | 21-nov-11 | 29,20 | 27,92 | 126 |
| CORIO | AEX | Financials | 22-nov-11 | 28,64 | 27,92 | 126 |
| CORIO | AEX | Financials | 23-nov-11 | 27,74 | 26,88 | 126 |
| CORIO | AEX | Financials | 24-nov-11 | 27,10 | 26,78 | 126 |
| CSM | AMX | Cons. Goods | 21-nov-11 | 9,68 | 9,31 | 82,4 |
| CSM | AMX | Cons. Goods | 22-nov-11 | 9,29 | 9,07 | 82,4 |
| CSM | AMX | Cons. Goods | 23-nov-11 | 9,02 | 8,71 | 82,4 |
| CSM | AMX | Cons. Goods | 24-nov-11 | 8,76 | 8,64 | 82,4 |
| DELTA LLOYD | AMX | Financials | 21-nov-11 | 11,28 | 10,99 | 144 |
| DELTA LLOYD | AMX | Financials | 22-nov-11 | 11,04 | 11,12 | 144 |
| DELTA LLOYD | AMX | Financials | 23-nov-11 | 11,04 | 10,68 | 144 |
| DELTA LLOYD | AMX | Financials | 24-nov-11 | 10,75 | 10,63 | 144 |
| DSM | AEX | Industrials | 21-nov-11 | 34,85 | 33,83 | 198,5 |
| DSM | AEX | Industrials | 22-nov-11 | 34,24 | 33,58 | 198,5 |
| DSM | AEX | Industrials | 23-nov-11 | 33,45 | 33,55 | 198,5 |
| DSM | AEX | Industrials | 24-nov-11 | 33,76 | 33,22 | 198,5 |
| EUROCOMMERCIAL | AMX | Financials | 21-nov-11 | 24,31 | 23,37 | 35,4 |
| EUROCOMMERCIAL | AMX | Financials | 22-nov-11 | 23,50 | 23,41 | 35,4 |
| EUROCOMMERCIAL | AMX | Financials | 23-nov-11 | 23,41 | 22,66 | 35,4 |
| EUROCOMMERCIAL | AMX | Financials | 24-nov-11 | 23,05 | 22,77 | 35,4 |
| FUGRO | AEX | Industrials | 21-nov-11 | 36,10 | 34,51 | 72,4 |
| FUGRO | AEX | Industrials | 22-nov-11 | 34,98 | 34,19 | 72,4 |
| FUGRO | AEX | Industrials | 23-nov-11 | 33,87 | 33,84 | 72,4 |
| FUGRO | AEX | Industrials | 24-nov-11 | 34,00 | 33,73 | 72,4 |
| HEIJMANS | AMX | Industrials | 21-nov-11 | 7,59 | 7,11 | 145 |
| HEIJMANS | AMX | Industrials | 22-nov-11 | 7,25 | 6,49 | 145 |
| HEIJMANS | AMX | Industrials | 23-nov-11 | 6,45 | 6,55 | 145 |
| HEIJMANS | AMX | Industrials | 24-nov-11 | 6,68 | 6,59 | 145 |
| HEINEKEN | AEX | Cons. Goods | 21-nov-11 | 33,30 | 32,45 | 172 |
| HEINEKEN | AEX | Cons. Goods | 22-nov-11 | 32,84 | 32,68 | 172 |
| HEINEKEN | AEX | Cons. Goods | 23-nov-11 | 32,52 | 32,22 | 172 |
| HEINEKEN | AEX | Cons. Goods | 24-nov-11 | 32,10 | 32,29 | 172 |
| IMTECH | AEX | Technology | 21-nov-11 | 18,25 | 17,54 | 109 |
| IMTECH | AEX | Technology | 22-nov-11 | 17,68 | 17,64 | 109 |
| IMTECH | AEX | Technology | 23-nov-11 | 17,54 | 17,57 | 109 |
| IMTECH | AEX | Technology | 24-nov-11 | 17,64 | 17,42 | 109 |
| ING | AEX | Financials | 21-nov-11 | 5,29 | 5,03 | 178,9 |
| ING | AEX | Financials | 22-nov-11 | 5,09 | 4,88 | 178,9 |
| ING | AEX | Financials | 23-nov-11 | 4,76 | 4,72 | 178,9 |
| ING | AEX | Financials | 24-nov-11 | 4,81 | 4,87 | 178,9 |
| KPN | AEX | Technology | 21-nov-11 | 5,56 | 5,45 | 192 |
| KPN | AEX | Technology | 22-nov-11 | 5,40 | 5,31 | 192 |
| KPN | AEX | Technology | 23-nov-11 | 5,26 | 5,22 | 192 |
| KPN | AEX | Technology | 24-nov-11 | 5,24 | 5,14 | 192 |
| NUTRECO | AMX | Cons. Goods | 21-nov-11 | 22,91 | 22,53 | 167 |
| NUTRECO | AMX | Cons. Goods | 22-nov-11 | 22,70 | 23,01 | 167 |
| NUTRECO | AMX | Cons. Goods | 23-nov-11 | 22,95 | 22,73 | 167 |
| NUTRECO | AMX | Cons. Goods | 24-nov-11 | 22,80 | 22,95 | 167 |
| PHILIPS | AEX | Cons. Goods | 21-nov-11 | 12,72 | 12,41 | 193,9 |
| PHILIPS | AEX | Cons. Goods | 22-nov-11 | 12,53 | 12,45 | 193,9 |
| PHILIPS | AEX | Cons. Goods | 23-nov-11 | 12,31 | 12,32 | 193,9 |
| PHILIPS | AEX | Cons. Goods | 24-nov-11 | 12,36 | 12,27 | 193,9 |
| POSTNL | AEX | Cons. Services | 21-nov-11 | 2,16 | 2,08 | 191,8 |
| POSTNL | AEX | Cons. Services | 22-nov-11 | 2,10 | 2,02 | 191,8 |
| POSTNL | AEX | Cons. Services | 23-nov-11 | 2,00 | 1,94 | 191,8 |
| POSTNL | AEX | Cons. Services | 24-nov-11 | 1,93 | 1,88 | 191,8 |
| RANDSTAD | AEX | Cons. Services | 21-nov-11 | 21,77 | 20,72 | 102 |
| RANDSTAD | AEX | Cons. Services | 22-nov-11 | 20,92 | 20,55 | 102 |
| RANDSTAD | AEX | Cons. Services | 23-nov-11 | 20,35 | 20,23 | 102 |
| RANDSTAD | AEX | Cons. Services | 24-nov-11 | 20,31 | 20,19 | 102 |
| REED ELSEVIER | AEX | Cons. Services | 21-nov-11 | 8,45 | 8,35 | 124,4 |
| REED ELSEVIER | AEX | Cons. Services | 22-nov-11 | 8,36 | 8,29 | 124,4 |
| REED ELSEVIER | AEX | Cons. Services | 23-nov-11 | 8,19 | 8,16 | 124,4 |
| REED ELSEVIER | AEX | Cons. Services | 24-nov-11 | 8,20 | 8,16 | 124,4 |
| SBM OFFSHORE | AEX | Industrials | 21-nov-11 | 14,43 | 13,76 | 138,4 |
| SBM OFFSHORE | AEX | Industrials | 22-nov-11 | 13,89 | 13,70 | 138,4 |
| SBM OFFSHORE | AEX | Industrials | 23-nov-11 | 13,52 | 13,64 | 138,4 |
| SBM OFFSHORE | AEX | Industrials | 24-nov-11 | 13,73 | 13,65 | 138,4 |
| SHELL | AEX | Industrials | 21-nov-11 | 25,66 | 24,97 | 143,4 |
| SHELL | AEX | Industrials | 22-nov-11 | 25,07 | 24,67 | 143,4 |
| SHELL | AEX | Industrials | 23-nov-11 | 24,53 | 24,54 | 143,4 |
| SHELL | AEX | Industrials | 24-nov-11 | 24,55 | 24,10 | 143,4 |
| TEN CATE | AMX | Industrials | 21-nov-11 | 19,32 | 18,68 | 61,4 |
| TEN CATE | AMX | Industrials | 22-nov-11 | 18,73 | 18,67 | 61,4 |
| TEN CATE | AMX | Industrials | 23-nov-11 | 18,62 | 18,32 | 61,4 |
| TEN CATE | AMX | Industrials | 24-nov-11 | 18,41 | 18,73 | 61,4 |
| TKH GROUP | AMX | Technology | 21-nov-11 | 14,45 | 13,60 | 68,4 |
| TKH GROUP | AMX | Technology | 22-nov-11 | 13,86 | 13,50 | 68,4 |
| TKH GROUP | AMX | Technology | 23-nov-11 | 13,55 | 13,24 | 68,4 |
| TKH GROUP | AMX | Technology | 24-nov-11 | 13,24 | 13,94 | 68,4 |
| TOM TOM | AMX | Cons. Goods | 21-nov-11 | 2,75 | 2,67 | 45,4 |
| TOM TOM | AMX | Cons. Goods | 22-nov-11 | 2,70 | 2,56 | 45,4 |
| TOM TOM | AMX | Cons. Goods | 23-nov-11 | 2,52 | 2,49 | 45,4 |
| TOM TOM | AMX | Cons. Goods | 24-nov-11 | 2,48 | 2,55 | 45,4 |
| UNIBAIL-RODAMCO | AEX | Financials | 21-nov-11 | 128,00 | 125,50 | 146 |
| UNIBAIL-RODAMCO | AEX | Financials | 22-nov-11 | 126,65 | 127,70 | 146 |
| UNIBAIL-RODAMCO | AEX | Financials | 23-nov-11 | 126,35 | 124,40 | 146 |
| UNIBAIL-RODAMCO | AEX | Financials | 24-nov-11 | 126,40 | 125,40 | 146 |
| UNILEVER | AEX | Cons. Goods | 21-nov-11 | 24,14 | 23,81 | 160,6 |
| UNILEVER | AEX | Cons. Goods | 22-nov-11 | 24,04 | 24,20 | 160,6 |
| UNILEVER | AEX | Cons. Goods | 23-nov-11 | 24,05 | 23,68 | 160,6 |
| UNILEVER | AEX | Cons. Goods | 24-nov-11 | 23,77 | 23,32 | 160,6 |
| UNIT FOUR | AMX | Cons. Services | 21-nov-11 | 17,58 | 17,15 | 56 |
| UNIT FOUR | AMX | Cons. Services | 22-nov-11 | 17,16 | 17,00 | 56 |
| UNIT FOUR | AMX | Cons. Services | 23-nov-11 | 16,91 | 16,86 | 56 |
| UNIT FOUR | AMX | Cons. Services | 24-nov-11 | 16,69 | 16,94 | 56 |
| USG PEOPLE | AMX | Cons. Services | 21-nov-11 | 4,93 | 4,71 | 45,4 |
| USG PEOPLE | AMX | Cons. Services | 22-nov-11 | 4,74 | 4,54 | 45,4 |
| USG PEOPLE | AMX | Cons. Services | 23-nov-11 | 4,51 | 4,51 | 45,4 |
| USG PEOPLE | AMX | Cons. Services | 24-nov-11 | 4,44 | 4,50 | 45,4 |
| VASTNED RETAIL | AMX | Financials | 21-nov-11 | 31,02 | 29,98 | 52,4 |
| VASTNED RETAIL | AMX | Financials | 22-nov-11 | 30,07 | 29,35 | 52,4 |
| VASTNED RETAIL | AMX | Financials | 23-nov-11 | 29,05 | 29,44 | 52,4 |
| VASTNED RETAIL | AMX | Financials | 24-nov-11 | 29,69 | 28,81 | 52,4 |
| VOPAK | AMX | Industrials | 21-nov-11 | 39,10 | 38,04 | 132,4 |
| VOPAK | AMX | Industrials | 22-nov-11 | 38,74 | 37,94 | 132,4 |
| VOPAK | AMX | Industrials | 23-nov-11 | 37,77 | 37,76 | 132,4 |
| VOPAK | AMX | Industrials | 24-nov-11 | 37,97 | 37,43 | 132,4 |
| WERELDHAVE | AMX | Financials | 21-nov-11 | 50,50 | 48,60 | 47 |
| WERELDHAVE | AMX | Financials | 22-nov-11 | 49,15 | 48,22 | 47 |
| WERELDHAVE | AMX | Financials | 23-nov-11 | 48,22 | 47,20 | 47 |
| WERELDHAVE | AMX | Financials | 24-nov-11 | 47,33 | 47,24 | 47 |
| WESSANEN | AMX | Cons. Goods | 21-nov-11 | 3,16 | 3,11 | 98,4 |
| WESSANEN | AMX | Cons. Goods | 22-nov-11 | 2,92 | 2,83 | 98,4 |
| WESSANEN | AMX | Cons. Goods | 23-nov-11 | 2,84 | 2,65 | 98,4 |
| WESSANEN | AMX | Cons. Goods | 24-nov-11 | 2,69 | 2,74 | 98,4 |
| WOLTERS KLUWER | AEX | Cons. Goods | 21-nov-11 | 12,27 | 12,01 | 133,8 |
| WOLTERS KLUWER | AEX | Cons. Goods | 22-nov-11 | 12,06 | 11,84 | 133,8 |
| WOLTERS KLUWER | AEX | Cons. Goods | 23-nov-11 | 11,73 | 11,63 | 133,8 |
| WOLTERS KLUWER | AEX | Cons. Goods | 24-nov-11 | 11,70 | 11,57 | 133,8 |

Table 14 - Opening- and Closing share price and TB score for t=0 – t=3 in 2012

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Company | Index | Industry | Date | Opening Price | Closing Price | TB-score |
| AALBERTS | AMX | Industrials | 22-nov-12 | 13,71 | 13,79 | 75 |
| AALBERTS | AMX | Industrials | 23-nov-12 | 13,75 | 13,93 | 75 |
| AALBERTS | AMX | Industrials | 26-nov-12 | 13,90 | 13,91 | 75 |
| AALBERTS | AMX | Industrials | 27-nov-12 | 14,01 | 14,05 | 75 |
| AEGON | AEX | Financials | 22-nov-12 | 4,18 | 4,24 | 173 |
| AEGON | AEX | Financials | 23-nov-12 | 4,25 | 4,29 | 173 |
| AEGON | AEX | Financials | 26-nov-12 | 4,25 | 4,25 | 173 |
| AEGON | AEX | Financials | 27-nov-12 | 4,28 | 4,26 | 173 |
| AHOLD | AEX | Cons. Services | 22-nov-12 | 9,24 | 9,38 | 164 |
| AHOLD | AEX | Cons. Services | 23-nov-12 | 9,51 | 9,61 | 164 |
| AHOLD | AEX | Cons. Services | 26-nov-12 | 9,58 | 9,66 | 164 |
| AHOLD | AEX | Cons. Services | 27-nov-12 | 9,68 | 9,72 | 164 |
| AIRFRANCE-KLM | AEX | Cons. Services | 22-nov-12 | 6,67 | 6,78 | 169 |
| AIRFRANCE-KLM | AEX | Cons. Services | 23-nov-12 | 6,77 | 6,85 | 169 |
| AIRFRANCE-KLM | AEX | Cons. Services | 26-nov-12 | 6,89 | 7,20 | 169 |
| AIRFRANCE-KLM | AEX | Cons. Services | 27-nov-12 | 7,30 | 7,21 | 169 |
| AKZO-NOBEL | AEX | Industrials | 22-nov-12 | 41,86 | 41,89 | 198 |
| AKZO-NOBEL | AEX | Industrials | 23-nov-12 | 41,92 | 42,54 | 198 |
| AKZO-NOBEL | AEX | Industrials | 26-nov-12 | 41,90 | 42,34 | 198 |
| AKZO-NOBEL | AEX | Industrials | 27-nov-12 | 42,85 | 43,23 | 198 |
| AMG | AMX | Industrials | 22-nov-12 | 6,04 | 6,09 | 85 |
| AMG | AMX | Industrials | 23-nov-12 | 6,09 | 6,12 | 85 |
| AMG | AMX | Industrials | 26-nov-12 | 6,11 | 6,11 | 85 |
| AMG | AMX | Industrials | 27-nov-12 | 6,17 | 6,04 | 85 |
| APERAM | AEX | Industrials | 22-nov-12 | 10,85 | 10,80 | 64 |
| APERAM | AEX | Industrials | 23-nov-12 | 10,83 | 11,03 | 64 |
| APERAM | AEX | Industrials | 26-nov-12 | 10,99 | 10,89 | 64 |
| APERAM | AEX | Industrials | 27-nov-12 | 11,00 | 11,11 | 64 |
| ARCADIS | AMX | Industrials | 22-nov-12 | 17,35 | 17,90 | 135 |
| ARCADIS | AMX | Industrials | 23-nov-12 | 17,71 | 17,86 | 135 |
| ARCADIS | AMX | Industrials | 26-nov-12 | 17,74 | 17,89 | 135 |
| ARCADIS | AMX | Industrials | 27-nov-12 | 17,71 | 17,92 | 135 |
| ARCELORMITTAL | AEX | Industrials | 22-nov-12 | 11,68 | 11,59 | 104 |
| ARCELORMITTAL | AEX | Industrials | 23-nov-12 | 11,64 | 11,71 | 104 |
| ARCELORMITTAL | AEX | Industrials | 26-nov-12 | 11,66 | 11,53 | 104 |
| ARCELORMITTAL | AEX | Industrials | 27-nov-12 | 11,68 | 11,48 | 104 |
| ASM | AMX | Technology | 22-nov-12 | 26,56 | 26,77 | 20 |
| ASM | AMX | Technology | 23-nov-12 | 26,26 | 26,82 | 20 |
| ASM | AMX | Technology | 26-nov-12 | 26,75 | 26,45 | 20 |
| ASM | AMX | Technology | 27-nov-12 | 26,58 | 26,38 | 20 |
| ASML | AEX | Technology | 22-nov-12 | 44,37 | 44,55 | 150 |
| ASML | AEX | Technology | 23-nov-12 | 44,50 | 46,00 | 150 |
| ASML | AEX | Technology | 26-nov-12 | 45,46 | 45,88 | 150 |
| ASML | AEX | Technology | 27-nov-12 | 46,11 | 47,27 | 150 |
| BAM | AMX | Industrials | 22-nov-12 | 2,66 | 2,73 | 189 |
| BAM | AMX | Industrials | 23-nov-12 | 2,74 | 2,75 | 189 |
| BAM | AMX | Industrials | 26-nov-12 | 2,74 | 2,80 | 189 |
| BAM | AMX | Industrials | 27-nov-12 | 2,82 | 2,79 | 189 |
| BINCKBANK | AMX | Financials | 22-nov-12 | 5,73 | 5,75 | 78 |
| BINCKBANK | AMX | Financials | 23-nov-12 | 5,74 | 5,68 | 78 |
| BINCKBANK | AMX | Financials | 26-nov-12 | 5,70 | 5,68 | 78 |
| BINCKBANK | AMX | Financials | 27-nov-12 | 5,71 | 5,69 | 78 |
| BOSKALIS | AEX | Industrials | 22-nov-12 | 29,49 | 29,80 | 164 |
| BOSKALIS | AEX | Industrials | 23-nov-12 | 29,83 | 29,95 | 164 |
| BOSKALIS | AEX | Industrials | 26-nov-12 | 29,47 | 29,88 | 164 |
| BOSKALIS | AEX | Industrials | 27-nov-12 | 30,02 | 30,45 | 164 |
| BRUNEL | AMX | Cons. Services | 22-nov-12 | 35,90 | 35,63 | 54 |
| BRUNEL | AMX | Cons. Services | 23-nov-12 | 35,75 | 35,40 | 54 |
| BRUNEL | AMX | Cons. Services | 26-nov-12 | 35,35 | 35,25 | 54 |
| BRUNEL | AMX | Cons. Services | 27-nov-12 | 35,26 | 35,61 | 54 |
| CORIO | AEX | Financials | 22-nov-12 | 30,10 | 30,28 | 157 |
| CORIO | AEX | Financials | 23-nov-12 | 30,37 | 30,57 | 157 |
| CORIO | AEX | Financials | 26-nov-12 | 30,44 | 30,39 | 157 |
| CORIO | AEX | Financials | 27-nov-12 | 30,61 | 30,81 | 157 |
| CSM | AMX | Cons. Goods | 22-nov-12 | 14,80 | 14,87 | 143 |
| CSM | AMX | Cons. Goods | 23-nov-12 | 14,94 | 15,00 | 143 |
| CSM | AMX | Cons. Goods | 26-nov-12 | 14,97 | 14,79 | 143 |
| CSM | AMX | Cons. Goods | 27-nov-12 | 14,85 | 14,86 | 143 |
| DELTA LLOYD | AMX | Financials | 22-nov-12 | 10,63 | 10,73 | 146 |
| DELTA LLOYD | AMX | Financials | 23-nov-12 | 10,81 | 10,63 | 146 |
| DELTA LLOYD | AMX | Financials | 26-nov-12 | 10,61 | 10,59 | 146 |
| DELTA LLOYD | AMX | Financials | 27-nov-12 | 10,68 | 10,56 | 146 |
| DSM | AEX | Industrials | 22-nov-12 | 42,39 | 42,17 | 199 |
| DSM | AEX | Industrials | 23-nov-12 | 42,13 | 43,23 | 199 |
| DSM | AEX | Industrials | 26-nov-12 | 42,84 | 43,10 | 199 |
| DSM | AEX | Industrials | 27-nov-12 | 43,11 | 43,50 | 199 |
| EUROCOMMERCIAL | AMX | Financials | 22-nov-12 | 28,52 | 28,23 | 38 |
| EUROCOMMERCIAL | AMX | Financials | 23-nov-12 | 28,30 | 28,33 | 38 |
| EUROCOMMERCIAL | AMX | Financials | 26-nov-12 | 28,34 | 28,30 | 38 |
| EUROCOMMERCIAL | AMX | Financials | 27-nov-12 | 28,38 | 28,56 | 38 |
| FUGRO | AEX | Industrials | 22-nov-12 | 40,14 | 40,64 | 69 |
| FUGRO | AEX | Industrials | 23-nov-12 | 40,77 | 41,26 | 69 |
| FUGRO | AEX | Industrials | 26-nov-12 | 41,29 | 40,92 | 69 |
| FUGRO | AEX | Industrials | 27-nov-12 | 41,20 | 41,91 | 69 |
| HEIJMANS | AMX | Industrials | 22-nov-12 | 6,10 | 6,18 | 164 |
| HEIJMANS | AMX | Industrials | 23-nov-12 | 6,18 | 6,45 | 164 |
| HEIJMANS | AMX | Industrials | 26-nov-12 | 6,45 | 6,63 | 164 |
| HEIJMANS | AMX | Industrials | 27-nov-12 | 6,66 | 6,45 | 164 |
| HEINEKEN | AEX | Cons. Goods | 22-nov-12 | 48,98 | 49,10 | 193 |
| HEINEKEN | AEX | Cons. Goods | 23-nov-12 | 49,16 | 49,67 | 193 |
| HEINEKEN | AEX | Cons. Goods | 26-nov-12 | 49,46 | 49,58 | 193 |
| HEINEKEN | AEX | Cons. Goods | 27-nov-12 | 49,66 | 50,60 | 193 |
| IMTECH | AEX | Technology | 22-nov-12 | 16,13 | 16,98 | 139 |
| IMTECH | AEX | Technology | 23-nov-12 | 17,20 | 16,77 | 139 |
| IMTECH | AEX | Technology | 26-nov-12 | 16,82 | 16,65 | 139 |
| IMTECH | AEX | Technology | 27-nov-12 | 16,73 | 16,46 | 139 |
| ING | AEX | Financials | 22-nov-12 | 6,88 | 6,86 | 185 |
| ING | AEX | Financials | 23-nov-12 | 6,89 | 6,94 | 185 |
| ING | AEX | Financials | 26-nov-12 | 6,90 | 6,87 | 185 |
| ING | AEX | Financials | 27-nov-12 | 6,92 | 6,84 | 185 |
| KPN | AEX | Technology | 22-nov-12 | 2,60 | 2,57 | 194 |
| KPN | AEX | Technology | 23-nov-12 | 2,57 | 2,60 | 194 |
| KPN | AEX | Technology | 26-nov-12 | 2,63 | 2,71 | 194 |
| KPN | AEX | Technology | 27-nov-12 | 2,72 | 2,56 | 194 |
| NIEUWE STEEN | AMX | Financials | 22-nov-12 | 6,08 | 6,04 | 51 |
| NIEUWE STEEN | AMX | Financials | 23-nov-12 | 6,02 | 6,05 | 51 |
| NIEUWE STEEN | AMX | Financials | 26-nov-12 | 6,05 | 5,95 | 51 |
| NIEUWE STEEN | AMX | Financials | 27-nov-12 | 6,00 | 6,09 | 51 |
| NUTRECO | AMX | Cons. Goods | 22-nov-12 | 30,04 | 30,50 | 178 |
| NUTRECO | AMX | Cons. Goods | 23-nov-12 | 30,41 | 30,75 | 178 |
| NUTRECO | AMX | Cons. Goods | 26-nov-12 | 30,72 | 30,69 | 178 |
| NUTRECO | AMX | Cons. Goods | 27-nov-12 | 30,70 | 31,02 | 178 |
| PHILIPS | AEX | Cons. Goods | 22-nov-12 | 19,22 | 19,33 | 195 |
| PHILIPS | AEX | Cons. Goods | 23-nov-12 | 19,37 | 19,39 | 195 |
| PHILIPS | AEX | Cons. Goods | 26-nov-12 | 19,28 | 19,21 | 195 |
| PHILIPS | AEX | Cons. Goods | 27-nov-12 | 19,36 | 19,46 | 195 |
| POSTNL | AEX | Cons. Services | 22-nov-12 | 2,48 | 2,49 | 179 |
| POSTNL | AEX | Cons. Services | 23-nov-12 | 2,51 | 2,48 | 179 |
| POSTNL | AEX | Cons. Services | 26-nov-12 | 2,48 | 2,50 | 179 |
| POSTNL | AEX | Cons. Services | 27-nov-12 | 2,52 | 2,47 | 179 |
| RANDSTAD | AEX | Cons. Services | 22-nov-12 | 24,01 | 23,92 | 120 |
| RANDSTAD | AEX | Cons. Services | 23-nov-12 | 23,97 | 24,08 | 120 |
| RANDSTAD | AEX | Cons. Services | 26-nov-12 | 23,95 | 24,00 | 120 |
| RANDSTAD | AEX | Cons. Services | 27-nov-12 | 24,13 | 24,23 | 120 |
| REED ELSEVIER | AEX | Cons. Services | 22-nov-12 | 10,57 | 10,65 | 126 |
| REED ELSEVIER | AEX | Cons. Services | 23-nov-12 | 10,65 | 10,77 | 126 |
| REED ELSEVIER | AEX | Cons. Services | 26-nov-12 | 10,71 | 10,79 | 126 |
| REED ELSEVIER | AEX | Cons. Services | 27-nov-12 | 10,80 | 10,86 | 126 |
| SBM OFFSHORE | AEX | Industrials | 22-nov-12 | 8,09 | 8,02 | 132 |
| SBM OFFSHORE | AEX | Industrials | 23-nov-12 | 8,07 | 7,99 | 132 |
| SBM OFFSHORE | AEX | Industrials | 26-nov-12 | 7,99 | 8,06 | 132 |
| SBM OFFSHORE | AEX | Industrials | 27-nov-12 | 8,37 | 8,30 | 132 |
| SHELL | AEX | Industrials | 22-nov-12 | 25,83 | 25,65 | 120 |
| SHELL | AEX | Industrials | 23-nov-12 | 25,71 | 25,77 | 120 |
| SHELL | AEX | Industrials | 26-nov-12 | 25,65 | 25,72 | 120 |
| SHELL | AEX | Industrials | 27-nov-12 | 25,79 | 25,68 | 120 |
| TEN CATE | AMX | Industrials | 22-nov-12 | 17,36 | 17,59 | 89 |
| TEN CATE | AMX | Industrials | 23-nov-12 | 17,55 | 17,62 | 89 |
| TEN CATE | AMX | Industrials | 26-nov-12 | 17,71 | 17,56 | 89 |
| TEN CATE | AMX | Industrials | 27-nov-12 | 17,62 | 17,63 | 89 |
| TKH GROUP | AMX | Technology | 22-nov-12 | 16,84 | 17,14 | 49 |
| TKH GROUP | AMX | Technology | 23-nov-12 | 17,00 | 17,00 | 49 |
| TKH GROUP | AMX | Technology | 26-nov-12 | 17,00 | 17,20 | 49 |
| TKH GROUP | AMX | Technology | 27-nov-12 | 17,22 | 17,00 | 49 |
| TNT-EXPRESS | AEX | Cons. Services | 22-nov-12 | 7,17 | 7,29 | 160 |
| TNT-EXPRESS | AEX | Cons. Services | 23-nov-12 | 7,28 | 7,27 | 160 |
| TNT-EXPRESS | AEX | Cons. Services | 26-nov-12 | 7,21 | 7,42 | 160 |
| TNT-EXPRESS | AEX | Cons. Services | 27-nov-12 | 7,46 | 7,56 | 160 |
| TOM TOM | AMX | Cons. Goods | 22-nov-12 | 3,50 | 3,56 | 70 |
| TOM TOM | AMX | Cons. Goods | 23-nov-12 | 3,56 | 3,57 | 70 |
| TOM TOM | AMX | Cons. Goods | 26-nov-12 | 3,57 | 3,57 | 70 |
| TOM TOM | AMX | Cons. Goods | 27-nov-12 | 3,60 | 3,56 | 70 |
| UNIBAIL-RODAMCO | AEX | Financials | 22-nov-12 | 169,90 | 169,80 | 131 |
| UNIBAIL-RODAMCO | AEX | Financials | 23-nov-12 | 170,10 | 171,45 | 131 |
| UNIBAIL-RODAMCO | AEX | Financials | 26-nov-12 | 170,80 | 170,90 | 131 |
| UNIBAIL-RODAMCO | AEX | Financials | 27-nov-12 | 171,95 | 172,35 | 131 |
| UNILEVER | AEX | Cons. Goods | 22-nov-12 | 28,49 | 28,48 | 147 |
| UNILEVER | AEX | Cons. Goods | 23-nov-12 | 28,51 | 28,74 | 147 |
| UNILEVER | AEX | Cons. Goods | 26-nov-12 | 28,61 | 28,74 | 147 |
| UNILEVER | AEX | Cons. Goods | 27-nov-12 | 28,74 | 29,02 | 147 |
| UNIT FOUR | AMX | Cons. Services | 22-nov-12 | 19,56 | 19,89 | 58 |
| UNIT FOUR | AMX | Cons. Services | 23-nov-12 | 19,95 | 20,48 | 58 |
| UNIT FOUR | AMX | Cons. Services | 26-nov-12 | 20,53 | 20,57 | 58 |
| UNIT FOUR | AMX | Cons. Services | 27-nov-12 | 20,32 | 20,87 | 58 |
| USG PEOPLE | AMX | Cons. Services | 22-nov-12 | 5,03 | 5,05 | 77 |
| USG PEOPLE | AMX | Cons. Services | 23-nov-12 | 5,05 | 5,08 | 77 |
| USG PEOPLE | AMX | Cons. Services | 26-nov-12 | 5,07 | 5,05 | 77 |
| USG PEOPLE | AMX | Cons. Services | 27-nov-12 | 5,07 | 5,10 | 77 |
| VASTNED RETAIL | AMX | Financials | 22-nov-12 | 32,11 | 32,51 | 30 |
| VASTNED RETAIL | AMX | Financials | 23-nov-12 | 32,51 | 32,67 | 30 |
| VASTNED RETAIL | AMX | Financials | 26-nov-12 | 32,75 | 32,74 | 30 |
| VASTNED RETAIL | AMX | Financials | 27-nov-12 | 33,01 | 33,05 | 30 |
| VOPAK | AMX | Industrials | 22-nov-12 | 55,03 | 55,91 | 136 |
| VOPAK | AMX | Industrials | 23-nov-12 | 56,05 | 56,34 | 136 |
| VOPAK | AMX | Industrials | 26-nov-12 | 56,30 | 56,37 | 136 |
| VOPAK | AMX | Industrials | 27-nov-12 | 56,50 | 57,54 | 136 |
| WERELDHAVE | AMX | Financials | 22-nov-12 | 45,16 | 44,95 | 54 |
| WERELDHAVE | AMX | Financials | 23-nov-12 | 44,80 | 45,31 | 54 |
| WERELDHAVE | AMX | Financials | 26-nov-12 | 45,07 | 45,14 | 54 |
| WERELDHAVE | AMX | Financials | 27-nov-12 | 45,38 | 45,34 | 54 |
| WESSANEN | AMX | Cons. Goods | 22-nov-12 | 2,17 | 2,19 | 175 |
| WESSANEN | AMX | Cons. Goods | 23-nov-12 | 2,20 | 2,20 | 175 |
| WESSANEN | AMX | Cons. Goods | 26-nov-12 | 2,19 | 2,22 | 175 |
| WESSANEN | AMX | Cons. Goods | 27-nov-12 | 2,22 | 2,26 | 175 |
| WOLTERS KLUWER | AEX | Cons. Goods | 22-nov-12 | 14,21 | 14,36 | 126 |
| WOLTERS KLUWER | AEX | Cons. Goods | 23-nov-12 | 14,37 | 14,51 | 126 |
| WOLTERS KLUWER | AEX | Cons. Goods | 26-nov-12 | 14,38 | 14,54 | 126 |
| WOLTERS KLUWER | AEX | Cons. Goods | 27-nov-12 | 14,57 | 14,45 | 126 |

1. In this thesis the different type of reports are used interchangeably as these reports are all aimed at disclosing non-financial information about the company. [↑](#footnote-ref-1)
2. <https://www.globalreporting.org/Pages/default.aspx> [↑](#footnote-ref-2)
3. ‘*An investment theory that states it is impossible to "beat the market" because stock market efficiency causes existing share prices to always incorporate and reflect all relevant information.’* <http://www.investopedia.com/terms/e/efficientmarkethypothesis.asp> [↑](#footnote-ref-3)
4. ‘*KLD Research & Analytics, Inc. (KLD) is the leading authority on social research for institutional investors. To meet the needs of social investors, KLD provides research, benchmarks, compliance, and consulting services analogous to those provided by financial research service firms.’* <http://www.kellogg.northwestern.edu/rc/kld.htm> [↑](#footnote-ref-4)
5. <http://www.wbcsd.org/home.aspx> [↑](#footnote-ref-5)
6. <http://www.wbcsd.org/work-program/business-role/previous-work/corporate-social-responsibility.aspx> [↑](#footnote-ref-6)
7. <http://ec.europa.eu/enterprise/policies/sustainable-business/corporate-social-responsibility/index_en.htm> [↑](#footnote-ref-7)
8. <https://www.globalreporting.org/information/about-gri/Pages/default.aspx> [↑](#footnote-ref-8)
9. <http://www.iso.org/iso/home.html> [↑](#footnote-ref-9)
10. <http://www.sustainability-indices.com> [↑](#footnote-ref-10)
11. DSM Annual Report 2011: <http://annualreport2011.dsm.com/pages/EN/Homepage.html> [↑](#footnote-ref-11)
12. <http://www.transparantiebenchmark.nl> [↑](#footnote-ref-12)
13. As a reminder; this concerns social -, environmental -, CSR -, sustainability -, integrated reports, etc. [↑](#footnote-ref-13)
14. ‘*Richtlijn 400’* is the Dutch guidance on what information has to be taken up in the annual report for all companies that are mandatory by law to provide a yearly report. [↑](#footnote-ref-14)
15. For more information on the exact criteria used to score a company’s disclosure, please refer to: <http://www.transparantiebenchmark.nl/sites/default/files/fotos/Criteria%20transparency%20benchmark-2012%20EN.pdf> [↑](#footnote-ref-15)
16. ISO 26000 provides guidance and helps clarify what social responsibility is. It helps businesses and organizations translate principles into effective actions and shares best practices relating to social responsibility. <http://www.iso.org/iso/home/standards/iso26000.htm> [↑](#footnote-ref-16)
17. The Predictive Validity Framework, also known as a Libby box, is useful as a starting point for a research study and its design. The first link is the theoretical part of the hypothesized relation, or, what is the predicted effect of concept one on concept two. The second – and third link expresses the operationalization of the two concepts. The fourth link is the relation we actually want to test. [↑](#footnote-ref-17)
18. DataStream is part of Thomson Reuters [↑](#footnote-ref-18)