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Abbreviations

CC	Corporate Citizenship
CC	Corporate Citizenship
CEO	Chief Executive Officer
CFP	Corporate Financial Performance
CG	Corporate Governance
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
KLD	Kinder, Lydenberg, Domini Inc.
p.a.	per annum
S&P 500	Equity Index comprising 500 US stocks
SRI	Socially Responsible Investing

Business has become, in the last half century, the most powerful institution on the planet. The dominant institution in any society needs to take responsibility for the whole...

Every decision that is made, every action that is taken, must be viewed in light of that responsibility.

(from David C. Korten, *Limits to the Social Responsibility of Business*, The People-Centered Development forum, article 19, release date: June 1, 1996.)

Abstract

This thesis analyzes the effects of socially responsible behavior of companies on their stock returns. First, I present a short overview of academic literature on the topic and discuss pro's and con's. Furthermore I point out the long-term perspective in Corporate Social Responsibility for corporations. With a certain screening methodology and data from Kinder Lydenberg Domini (KLD), I divide all companies in the S&P 500 index into deciles (from the most to the least socially responsible). Comparing their weekly average returns I cannot find a positive correlation between social and financial performance. To test if CSR-rankings can be used to explain stock returns I run several regressions. However, I cannot prove the hypothesis that CSR is an explaining variable for stock returns (like e.g. market beta) in a statistically significant way. I argue, however, that a sustainable way of running a business will indeed, in the long-run, lead to a superior financial performance and hence to a better stock return. This argumentation can also be found in various academic papers, which are subsequently presented.

1 Introduction

1.1 Motivation

Let me give a brief explanation why I wanted to look at the topic of Corporate Social Responsibility and its implications on stock returns.

One of the main reasons is that the capital shift from the public to the private sector (privatizations) in the last decades has not been reflected in a more socially responsible behavior of the majority of corporations. In the early decades of the century, most of today's social nets in Europe were created by state governments in order to build a social economy. The government was a major employer for the population and therefore took care of it by financing social measures in order to protect people from extreme poverty. During the last decades of the 20th century, most state-run companies were privatized. Nowadays, the world's largest 200 private companies account for more than a quarter of the world's economic activity¹. The social security of the people though, was continuing to be an issue for the state, without holding private companies accountable for any social responsibilities.

With the large wave of privatizations, social economies all over the world are more and more getting into the troubles of financing this social net. Examples can be found all over the western world in health care organizations and state pension systems (the most extreme case is Europe with its

¹ Lawrence et al. (2005, 47)

large social benefit programs). This development must lead to the conclusion that corporations in future have to do more for the well-being of the society as a whole in order to be accepted by it. In a recent survey conducted by McKinsey, a consultancy, CEOs think that society nowadays has higher expectations of business taking on public responsibilities than it did five years ago.² That's one of the reasons CSR is becoming such an important topic in doing business around the world.

1.2 Context of the thesis

Many papers have looked at the correlation between corporate social performance (CSP) and corporate financial performance (CFP) and most of them show a positive correlation.³ Nevertheless this thesis does not look at financial performance of companies in a strict accounting context but rather on their stock return, both of which of course will be correlated though are still not the same, taking into account other factors that motivate investors to invest in a certain company. Taking data from the S&P 500 Index this work is going to compare the stock return of high-CSP companies with the return of low-CSP companies in order to find a significant correlation between these two factors.

² Just good business, *The Economist*, Volume 386, Number 8563 (2008)

³ See Preston, O'Bannon (1997, 419-429)

It is important to note, however, that data measuring the “amount” of corporate social responsibility has not been readily available for a long period of time. Most of the companies started to think about and promote CSR only in the late 1990s and the first analyst firms started to measure the socially responsible behavior of companies only then. Therefore, the ranking of companies by their social behavior has not been done for more than 10 years, which leaves academia with the problem of trying to identify a long-term performance driver such as CSR with data that is not available for a long-enough time horizon. In the case of this thesis, I use CSR scorings from KLD, an analyst firm that specializes on CSR-research and provides a scoring methodology for publicly listed companies in the United States since the 1990s⁴. My dataset begins with scoring results for 2002 and ends in the year 2006. With 5 years of scoring data, however, one cannot identify long-term trends in a company’s stock, but rather mid-term effects. I hypothesize that using datasets containing 30 years of scoring data or more, the positive effects of sustainable and socially responsible business behavior could be shown much more clearly and significantly. However, this kind of data is not available.

The following parts of the thesis are structured as follows:

In section 2, I give a short introduction into the concept of Socially Responsible Investing (SRI) and explain how it evolved over time, in order to make clear the link between a socially responsible business behavior of a

⁴ See Appendix B for details on KLD and its screening methodology

company, its stock return and the investment patterns of investors trying to make use of this behavior. Afterwards, in section 2.3 I try to give a more precise explanation of the terms Corporate Social Responsibility (CSR) and Corporate Citizenship, as these are the concepts that KLD as an analyst firm tries to identify and measure. We see that there are many different definitions of CSR and I will therefore also describe how CSR developed over time.

In section 3 the thesis argues that CSR can only be seen as a long-term performance driver and embeds the following analysis of stock returns in section 4 into a set of similar research throughout academic literature. As mentioned above, section 4 provides a detailed description of the performed data analysis, which includes the comparison of average returns by ranked CSR-performance deciles and a Fama-Macbeth regression with a CSR factor-mimicking portfolio.

Section 5 finally concludes the findings and discusses possible alternatives for future research on this topic.

2 Socially Responsible Investing and the concept of CSR

2.1 Socially Responsible Investing (SRI)

Throughout the literature many definitions of socially responsible investing can be found. In the following section I would like to give some examples and would like to define what I understand under SRI in this thesis. Moreover I want to show the link between SRI, Corporate Citizenship and CSR.

Kinder (2005) describes SRI in the following way:

*“Socially responsible investing” is the incorporation of the investor’s social or ethical criteria in the investment decision-making process.*⁵

In 2005, the global Asset Management department of ABN-Amro, a large investment bank, came up with the following definition for SRI:

*An investment process in which sustainability criteria relating to a company’s social and/or environmental behavior play a decisive role in the admittance of that company’s stocks to the investment portfolio.*⁶

In 2005 a World Economic Forum report suggested this:

*Responsible investing is most commonly understood to mean investing in a manner that takes into account the impact of investments on wider society and the natural environment, both today and in the future.*⁷

⁵ Kinder (2005, 4)

⁶ ABN-Amro (2005, 3)

The differences between and among these definitions reflect SRI's expansion. New types of investors have brought new perspectives.⁸

Over the past 100 years, investment has taken on a passive character. It has become a mere financial transaction, like buying a certificate of deposit. SRI restores something of the former meaning of the term by affirming the investor's commitment to the company. In today's economy, that assertion takes on a crucial significance.⁹

SRI evolved out of the wish to actively influence investment decisions and started in some form in the 1950s. Formally, screened portfolio investing was first introduced in the early 1970s with the Pax World Fund¹⁰. Since then, SRI grew rapidly to what is today a multi-trillion dollar phenomenon.

The "2003 Report on Socially Responsible Investing Trends in the United States" reveals that the value of socially screened portfolios now exceeds \$2 trillion. This represents a 240% growth since 1995, 40% faster than all professionally managed assets. The report identifies 200 ethical mutual funds in operation in 2003 compared to 55 in 1995. This development

⁷ The World Economic Forum, *Mainstreaming Responsible Investment*. (2002, 7), cited in Kinder (2005, 4)

⁸ Kinder (2005, 4)

⁹ Kinder (2005, 6)

¹⁰ Kinder (2005, 8)

alone shows that SRI is a topic that will be of even larger importance in the future.¹¹

SRI is not just popular with private investors. Particularly large institutions like pension funds have started to invest in SRI Funds. These institutions are especially keen to invest in socially responsible companies because they are subject to public control on their investment strategies and don't want to end up investing heavily in arms, alcohol or tobacco – in short “sin” stocks.

Therefore the SRI Fund industry is growing very fast and is becoming more and more popular every day. For this reason in this work I want to take a closer look at Socially Responsible Investing and would like to investigate if a “social” behavior of a company does have a statistically relevant positive impact on its share price. If this is the case that would be a clear incentive for firms all over the world to rethink their position as “Corporate Citizens” and to do business in a holistic and sustainable way. As Chami et al. (2002) point out: “Ethical behavior can certainly be costly, but the consequences of ignoring ethics are costlier still, in terms of foregone opportunities as well as economic inefficiency “

Kinder (2005) states in his paper on SRI, that the different terms SRI and CSR may lead to confusion because people might assume that socially responsible investors buy only shares in socially responsible companies. Few people think that a socially responsible company is conceivable. So,

¹¹ See Boutin-Dufresne, Savaria (2004)

investment universes limited to socially responsible companies are quite rare. Therefore investors try to find securities, whose issuers do not fall below the investor's minimum standards for ethical behavior. Those standards will differ from one investor to the next and some have criticized Socially Responsible Investing for its lack of uniform standards. What is socially responsible in today's globalized world?

The question what socially responsible behavior of firms looks like in reality is quite complex. It can be understood in multiple ways. To avoid confusion, for this work I define a socially responsible behavior of companies by stating that a corporation must use its ownership of assets to reflect the best interests of people. This stakeholder-approach is consistent with the definition of corporate accountability in the 1940s.¹² A company is accountable for all its decisions within its environment – from the correct treatment of employees to making sure that its supply-chain businesses are also run fairly and sustainable.

However, in the next section I will take a glance at the evolution of SRI. Later in this thesis I will discuss the criteria for a company to be labeled “socially responsible” in my screening procedure of the S&P 500 in further detail.

¹² See Kinder (2005, 17)

2.2 The development of Socially Responsible Investing¹³

SRI began in the late 1960s in the US and Canada as what Kinder in his paper calls a “values-based” approach. It tried to align an investor’s portfolio holdings with his/her beliefs. Values-based investors came to SRI because they wanted consistency, alignment between their principles and their investments. Alongside of it and based on the same values developed shareholder activism or engagement.

By the late 1990s however, SRI had developed a second distinct approach which Kinder terms “value-seeking”. It seeks to identify social and environmental criteria which may affect financial performance and therefore share price. Investors don’t necessarily try to be ethical in the selection of the companies they invest in – the value-seeking investor simply tries to identify why companies which align themselves with ethical / social / environmental issues are more successful than companies that don’t and which non-financial screens have predictive value for stock performance.

The third approach to SRI is value-enhancing and is quite different from the values-based and value-seeking approaches in one regard: The value-enhancing investor tries to exert influence on the business directly through his/her ownership (shareholder activism). This kind of investor uses his/her potential to affect corporate policy for the good.

All three types or evolution stages of SRI have one factor in common: the fact that investment is more than just buying stock in a company. It is the

¹³ See Kinder (2005) for a very detailed overview

wish to use money in the best possible way and to ensure a sustainable behavior of corporations.

Although Kinder has a point in saying that socially responsible investors fall into these different categories, most people will have a common idea about SRI. Having read many articles in newspapers, journals, etc. and having talked with a lot of people about their views and opinions on SRI. I discovered that socially responsible investing is mainly seen by people as what Kinder calls the value-enhancing SRI. For many investors it is not sufficient any more just to buy any stock to earn money, many investors nowadays care about how the specific company uses this money. The investor will be more willing to invest in a firm that abides by certain “rules”, namely corporate social responsibility guidelines. For instance, Heinkel et al. (2001) show that 20% of fund investors would be necessary to create an incentive for polluting firms to reform their factories to make them “green”. This is because above this 20% level of green investors, the cost of capital for a polluting company rises because its stock is bought only by less than 80% of fund investors.¹⁴ In the year the paper was published, the percentage of green investors was nearly 10% and rising. I assume a similar effect for the rest of the SRI community. If there are more and more investors around the world that include SRI criteria into their investment decision, there will soon be enough capital invested in socially responsible companies in order to create an incentive for other corporations to do business in a more socially responsible and sustainable way.

¹⁴ See also Von Arx (2005) who builds on the paper of Heinkel et al. (2002)

What I want to point out clearly however, is that I assume the investor to have a utility function that maximizes a combination of wealth and social good. Adding a non-wealth criterion to the investment decision of an investor of course comes with a cost. This cost to socially responsible investing is also associated with a constrained optimization of the investment set where the constrained efficient frontier lies on the interior or tangent to the unconstrained frontier¹⁵.

Another important point I want to mention is, that there is no one guideline book which summarizes all the “socially responsible behavior-rules”. Every company and every single investor will have his own set of rules, his own ethical principles according to which he will invest in certain stocks and not in others.¹⁶ For some investors for instance, environmental care will be the biggest concern, whereas for others, human rights and the abortion of child labor will have top priority. As a result, socially responsible indices differ in the emphasis they place on social characteristics, too. For example the DS 400 Index is the strongest among all indices on the environment while the Calvert Index is strongest on Corporate Governance.¹⁷

In the literature there are many discussions if general guidelines of “how to do good business” should exist or not. The evolution of Corporate Go-

¹⁵ Anderson, Myers (2006, 4)

¹⁶ See Barracchini (2004) for a detailed discussion of an investors’ ethical choices

¹⁷ Statman (2005)

vernance codes leads into this direction and CG is already becoming a standard in the legislation of western economies. However, Corporate Governance rules do not go far enough for socially responsible investors. They are meant to represent a certain minimum standard of business behavior and are therefore also published as corporate law. Some companies might, however, want to go further and take truly socially responsible decisions in their businesses.

In my opinion, the free will of companies to abide by certain socially responsible guidelines is an important factor when discussing general rules for business. Moreover, if the behavior of companies is being judged by their customers and by investors, I doubt that many companies can afford to stay low Corporate Social Performers.

In the coming section of the thesis I will look in more detail into how a company is expected to behave in order to get the label of "SRI"-compatibility. Therefore I present the scope and history of Corporate Social Responsibility (CSR), which nowadays is a broadly discussed issue in every company around the world.

2.3 A definition of CSR and Corporate Citizenship

Proponents of SRI typically argue that corporate social responsibility (CSR) represents management's long-term views on how a company should perform, which may be mispriced due to 'short-term thinking' within the fi-

nancial community. This stream of thought suggests SRI can be incrementally profitable over long-run horizons.¹⁸

In another sense, Corporate Social Responsibility means that a corporation should be held accountable for any of its actions that affect people, their communities, and their environment. It implies that harm to people and society should be acknowledged and corrected if at all possible¹⁹. This definition of CSR is quite broad and has many different possibilities of interpreting it. Nevertheless it conveys the important message that CSR is not all about philanthropy but about a sustainable way of doing business. This fact is of utmost importance considering the fact that I want to study the effects of CSR on stock performance. It suggests that operating your business in the most sustainable way will ensure long-term profits of the company and will therefore be visible in the stock price.

However, being socially responsible must not mean that a company abandons its other missions. Following the theory of Lawrence et al. (2005), a business has many responsibilities: economic, legal, and social. The challenge for the management of a company is the blending of these responsibilities into a comprehensive corporate strategy. Only if a corporation achieves to succeed in all three areas can it call itself effectively successful.²⁰

Whereas corporate social responsibility focuses more on the care of the public's resources and on doing good for the society as a whole, the idea

¹⁸ Derwall et al. (2004, 3)

¹⁹ Lawrence et al. (2005, 46)

²⁰ See Lawrence et al.(2005, 46)

of Corporate Citizenship focuses more on a responsible behavior towards the stakeholder of a company. Corporate Citizenship involves proactively addressing business and society issues, building stakeholder partnerships, discovering business opportunities through social strategic goals, and transforming a concern for financial performance into a vision of corporate financial and social performance²¹. In short it could be described with sustainability in all the company's actions and the building of long-term partnerships with its stakeholders.

In practice, the differences in the notion of CSR and Corporate Citizenship are often ambiguous. Therefore in this work I will not distinguish sharply between the two concepts and will use the term CSR from here onwards.

2.4 The History of CSR

The idea of corporate social responsibility first appeared in the United States at the beginning of the 20th century. Corporations were growing too big, too powerful and guilty of antisocial and anticompetitive practices and a lot of laws emerged at that period (antitrust, banking, consumer-protection). A few farsighted business executives decided to use the power of their corporations voluntarily for broad social purposes. Examples of those business leaders are Andrew Carnegie or Henry Ford, who became great philanthropists and gave a lot of their wealth to educational and charitable institutions and started to develop and introduce programs to

²¹ Lawrence et al. (2005, 64)

support the recreational and health needs of their employees²². These leaders believed that their business had a responsibility to society that went beyond or worked in parallel with their efforts to make profits.²³

This belief is still the core of the CSR spirit nowadays. Running businesses effectively and profitably is crucial for any society. Corporations employ people, pay taxes to finance the social systems in a country, grow the overall economy and create new technology, which benefits the whole society. By doing all that, corporations play an essential part in our society and are already taking a lot of responsibility. The modern idea of CSR is to extend this responsibility even further until a point where companies are responsible for all their stakeholder in a holistic and sustainable way. “Doing well by doing good” has become a fashionable mantra²⁴.

To get a better understanding of how CSR evolved throughout time let’s look at the last decades. Until the late 70s, CSR was derided as a joke, an oxymoron, and a contradiction in terms by the investment and business community²⁵.

²²The development of health-care programs for their employees could be seen as one of the first moves into the direction of Corporate Citizenship. The term CC itself was only used many years later.

²³ See Lawrence et al. (2005, 48)

²⁴ Just good business, *The Economist*, Volume 386, Number 8563 (2008)

²⁵ Lydenberg (2005) cited in Lee (2006, 2)

However, by the late 90s, CSR became almost universally sanctioned and promoted by all constituents in society from governments and corporations to non-governmental organizations and individual consumers. Most of the major international organizations such as United Nations, World Bank, Organization of Economic Co-operation and Development and International Labor Organization not only endorse CSR, but have also established guidelines and permanently staffed divisions to research and promote CSR²⁶. Also, in the late 90s, almost 90% of the Fortune 500 companies embraced CSR in their annual reports to be an important element of their corporate strategy.

This change in attitude of companies was not so much due to a more social society nowadays but rather to a different perception of CSR itself. When Henry Ford in 1917 stood in a courtroom defending his decision not to distribute the accumulated profits of his company to shareholders but rather to slash prices of T Model vehicles, he defined business in the following way: "To do as much as possible for everybody concerned, to make money and use it, give employment, and send out the car where the people can use it... and incidentally to make money.... Business is a service not a bonanza"²⁷.

Fords idea of business as a service was derided by shareholders and also by the court which ruled in 1919 that the maximum dividend had to be paid to shareholders.

²⁶ Lee (2006, 2)

²⁷ Lee (2006, 3)

Lee (2006) shows however, that in 1999, 80 years later, Henry Ford's great-grandson, William Clay Ford Jr. took the helm of the company and tried again to convince his company's stakeholders of the importance of business as a service to society: "We want to find ingenious new ways to delight consumers, provide superior returns to shareholders and make the world a better place for us all"²⁸. This time around, however, the younger Ford not only faced no lawsuits, but also received considerable support from various stakeholders of the company including shareholders.

Why have the reactions of stakeholders been so different in 1919 and 1999? The major reason is that at the beginning of the 20th century the concept of social responsibility of a corporation was completely separated from its financial performance. However, nowadays society is beginning to accept the idea that CSR and therefore a sustainable way of doing business could indeed produce financial performance and secure the existence of the corporation in the long-run. The difference in shareholders' attitude regarding CSR is therefore the change in their perception of the relationship between CSR and bottom-line performance of the organization.²⁹

The chapters to come are structured in the following way: in chapter 3, I will point out in more detail the transition of the CSR definition from a purely philanthropic to a holistic and integrated one, in order to explain nowadays' underlying theory of Corporate Social Responsibility and Corporate Citizenship as a way for companies to thrive and to ensure long-

²⁸ Lee(2006, 3)

²⁹ Lee (2006, 4)

term financial stability and performance. Moreover I will present existing research that has been done on the topic of financial performance vs. social performance. In section 4 I will describe the data I used to screen socially responsible companies in the S&P 500 and present the performance of my socially screened portfolio against various benchmarks. In Section 5 I will then conclude my findings and discuss possible ways of how the research in this field should be extended.

3 Social Responsibility as a long-term performance driver

The question that the financial community has been dealing with for many decades is: Do the benefits of CSR outweigh its costs? Many academics tried to find an answer to this question and have come up with a lot of different results. As Griffin and Mahon (1997, 5) put it, the result is “25 years of incomparable research”. The main problem analyzing the link between CSR and financial performance is the CSR part. There are hundreds of opinions on how the social behavior of corporations can be measured and if it can be measured at all.³⁰ Nevertheless in the following, I will shortly present an overview on academic research in this field.

3.1 How to measure Corporate Social Responsibility

In order to be able to analyze a possible relationship between social and financial performance the first issue is to measure social performance accurately. However, there is a lack of consensus throughout academic literature on which methodology is best suitable to measure Corporate Social Responsibility³¹. In many cases, indicators that are rather subjective, such as surveys from business students or business faculty members, are used to rank companies according to their corporate social performance (CSP).

³⁰ See Entine (2003)

³¹ See Tsoutsoura (2004)

In other cases, researchers use official corporate disclosures, such as annual reports or CSR reports. These data sources are, in a way, subjective as well, as there is no way to determine if companies under-report or over-report their social performance and only very few corporations have their CSR reports verified by external auditors.

The problem of accurately measuring Corporate Social Responsibility is one of the reasons why data linking social and financial performance is not readily available in the literature over longer time-horizons. In this thesis, I use data from an analyst company named Kinder Lydenberg Domini (KLD), which has one of the largest databases on corporate social performance of over 2000 US publicly listed companies. “KLD uses a combination of surveys: financial statements, articles on companies in the popular press, academic journals (especially law journals), and government reports in order to assess CSP along eleven dimensions. Based on this information, KLD constructed the Domini 400 Social Index (DSI 400), the functional equivalent of the Standard and Poors 500 Index, for socially responsible firms.”³² More details on the KLD screening procedure and on the used dimensions can be found in Appendix B.

Another controversy is how to measure financial performance correctly. Financial performance is definitely easier to measure than social performance, however, there is little consensus about which measure to apply. Some research uses accounting data provided by companies, others use

³² Tsoutsoura (2004, 10)

stock performance to find a link between CSP and financial performance. In this thesis I use stock returns to measure financial performance. One of the reasons I use this approach is that the stock price does not only reflect past financial performance (as accounting instruments do) but also reflects future potential performance which the investors attribute to a company. Therefore I argue that stock returns are better suitable to measure the long-term effect of Corporate Social Responsibility, also capturing the image-effects of CSR.

3.2 Social screening throughout the literature

The academic literature on this topic has analyzed socially responsible investing in both equity and bonds.³³ Angel and Rivoli (1997) found that “the reluctance of investors to invest in certain stocks can lead to an increase in these companies’ cost of equity. However, there are a large proportion of investors needed unwilling to invest in certain companies for the effect to be significant.” As mentioned in the introduction, research of Heinkel et al. (2001) leads to the same conclusion. If more people become SRI investors, companies not abiding by certain social standards will have a significantly higher cost of equity. Heinkel et al. (2001) also show that the percentage of SRI investors (in their special case “green investors”) is growing rapidly.

³³ Anderson, Myers (2006)

Research within the area of investing has led to inconclusive results. In general the vast majority of research finds that SRI stocks do not underperform the market. However, there are of course costs of diversification and information effects.³⁴ Guerard (1997) finds that returns for a socially screened universe do not differ significantly from an unscreened universe. Nevertheless, using multiple screens improves results. Jennings and Martin (2006) also report advantages using multiple screening techniques. They propose using factor-based models in SRI-screened investment universes to create “socially enhanced indexing”. Using commercial software and readily available portfolio screens, socially enhanced indexing offers mass customization of values based investment programs in an easy and cheap form and does indeed lead to outperformance.

Combining modern portfolio and stakeholder theories, Barnett and Salomon (2005) hypothesize that “the financial loss borne by an SRI fund due to poor diversification is offset as social screening intensifies because better managed and more stable firms are selected into its portfolio.” They find support for this hypothesis through an empirical test on a panel of 61 SRI funds from 1972-2000. The results show that as the number of social screens used by an SRI fund increases, financial returns decline at first, but then rebound as the number of screens reaches a maximum. That is, they find “a curvilinear relationship, suggesting that two long competing viewpoints may be complementary.”³⁵

³⁴ See Kurtz (1997)

³⁵ Barnett, Salomon (2005, 4)

Statman (2000) shows that socially responsible mutual funds did better than conventional funds. However, like in almost every other paper on this topic, the results are not statistically significant.

Schröder (2003 and 2005) looks at the performance of SRI indices in contrast to SRI funds. This has the advantage that the transaction costs of funds, the market-timing activities and the skill of the fund manager cannot distort the data, which “leads to a relatively direct measure of the performance effects of SRI screens”³⁶. However, Schröder cannot find a risk-adjusted outperformance of SRI indices over their respective benchmarks either.

One interesting paper from Tsoutsoura (2004) does not take stock returns as a proxy to measure financial performance but rather accounting data. In her study, “firm financial performance is measured by accounting variables. The financial data used are return on assets (ROA), return on equity (ROE), and return on sales (ROS). The survey covers the firms included in the S&P 500 index for the years 1996 - 2000.”³⁷ Using KLD data to measure the social performance, the study finds a positive relationship between CSP and financial performance, which is statistically significant.

We shall see later in this thesis that with my screened stock portfolio I cannot find a statistically significant difference to unscreened portfolios.

³⁶ Schröder (2003, 5)

³⁷ Tsoutsoura (2004, 12)

3.3 The long-term effect of CSR on stock prices

Economic theory tells us that companies around the world seek to maximize their profits; “they will engage in whatever activity they believe will earn them the highest financial return.”³⁸ The merit of an activity is therefore only judged by the company by its financial reward. As a consequence, if “being good” or socially responsible turns out to be more profitable than being “bad” the corporation has a real incentive to do “good”.³⁹ “Firms are not in the first stance qualified to judge morality, they are in principle only designed to judge what is and is not profitable.”⁴⁰ Friedman (1970) stated that moral is better debated in public forums, not in companies’ boardrooms. “Firms should maximize returns to shareholders, and then allow these shareholders to spend the proceeds on whatever activities they deem appropriate.”⁴¹ However, this does not mean that firms should not behave morally. To attract resources efficiently companies must not satisfy only their stockholders but also their stakeholders, in other words, their social environment. Corporate Social Responsibility can improve the relationship between the corporation and its environment; therefore it can be regarded as an instrument for the procurement of resources.

³⁸ Barnett, Salomon (2003, 382)

³⁹ See Barnett, Salomon (2003)

⁴⁰ Barnett, Salomon (2003, 382)

⁴¹ Barnett, Salomon (2003, 382)

In my analysis of stock prices of socially responsible companies during 5 years between 2002 and 2006, I cannot prove any significant effect on returns of my screened portfolio that could possibly be attributed to a social behavior of companies. However, CSR is a long-term strategy and has to be analyzed accordingly. This would require a dataset on CSR which goes back to the 1950s or 60s, when the term CSR was first used for socially responsible investing and first screening procedures evolved.

Statman (2005) provides clear evidence for CSR being a long-term financial driver in his paper on SRI indices. He compares SRI indices to normal indices in the United States in a time horizon between 1990 and 2004 and finds an outperformance of SRI indices over those 15 years. However, the SRI indices do not outperform their benchmarks in every sub-period. In the sub period of 2002 to 2006 (the period of time I worked with in this thesis) he could not find an outperformance of SRI indices compared to traditional indices, for instance.

The arguments to look at CSR as a long-term strategy for companies and therefore see it as a performance driver of stock returns in the long-run are manifold. According to Heal (2004) CSR can act to improve corporate profits and guard against reputational risks. He argues that a socially responsible behavior can be seen as a hedge against reputational damage and therefore as an effective risk-management measure. This argument goes into the same direction of Barnett and Salomon (2003), who see CSR

as a tool to improve the relationship between the corporation and its social environment (its stakeholders). For example, "a firm that builds a reputation for maintaining a favorable work environment can decrease its hiring costs and increase its employee retention rate, decrease community opposition and legal costs when opening new factories, and may more easily lobby for tax breaks from local governments."⁴² As a consequence it makes much sense to view Corporate Social Responsibility as a long-term goal of companies.

In the following section of the thesis I will, nevertheless, look at a screened portfolio during a 5 years time horizon, from 2002 to 2006, in order to find out if the awareness of investors regarding social responsibility is already large enough to observe a positive return effect on stocks of socially responsible companies in the short run, too.

⁴² Barnett, Salomon (2003, 382)

4 Analysis of stock performance

4.1 Description of the data

In order to find out if there is something like a “social premium” in stock returns I construct a portfolio with stocks of companies that are doing very well in a social responsibility context. Then I compare the stock returns of these companies, corrected for CAPM⁴³ and Fama French factors, to the overall index – in my case the S&P 500 – and to a portfolio containing the least socially responsible companies within the S&P 500. In this section of the thesis I will describe the dataset I worked with and the screening procedure I used to identify “socially responsible” companies⁴⁴.

The data that I used to identify socially responsible companies were provided by KLD Research & Analytics, Inc.⁴⁵ KLD has a database which contains ratings on more than 3000 companies in the US. One of their products is KLD STATS (Statistical Tool for Analyzing Trends in Social and Environmental performance), which is a data set with annual snap-shots of the environmental, social, and governance performance of companies. Each KLD STATS spreadsheet contains identifying company information (Name and Ticker), Index Membership and Strength and Concern ratings

⁴³ For a detailed description of CAPM and general investment theory see Bodie et al. (2005)

⁴⁴ See Anderson, Myers (2006) for a similar screening methodology

⁴⁵ KLD Research & Analytics, Inc., 250 Summer street, 4th floor, Boston, Massachusetts 02210, Website: www.kld.com

for multiple indicators within seven qualitative issue areas. These issue areas cover approximately 80 indicators in areas including Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights and Product. In addition to this, KLD also provides exclusionary screening information for involvement in the following Controversial Business Issues: Alcohol, Gambling, Firearms, Military, Nuclear Power, and Tobacco. The qualitative indicators include both positive and negative ratings (strengths and concerns), while the controversial business indicators include negative ratings only. For a detailed overview of the issue areas and their indicators please refer to Appendix B.⁴⁶

The data presented in the KLD STATS spreadsheets is a binary summary of KLD's positive and negative ratings. Within each indicator, KLD assigns either a 1 for each company which has a strength or a concern in that area and a 0 if it doesn't. Moreover there are exclusionary factors in the dataset. A company gets a 1 at the exclusionary factor section, if it is active in one of the following controversial business areas: Alcohol, Gambling, Firearms, Military, Nuclear Power, and Tobacco. This exclusion criterion constitutes the opportunity to totally exclude certain companies from the rating. However, in my scoring I don't want to exclude these companies, as the focus of this work is on sustainable business behavior rather than on filtering out "sin stocks" (stocks of companies that do business in controversial business areas⁴⁷). Therefore the exclusionary categories are only

⁴⁶ See Hallerbach et al. (2002, 4) and Larson (2003) for similar screening methods.

⁴⁷ For the definition and more research on sin stocks see Hong, Kacperczyk (2007)

given a negative factor, which is treated like a normal concern in a qualitative business area.

In the spreadsheet I separated the strengths and the concerns and assigned them positive and negative factors respectively. Each strength and concern category is then assigned a specific weight. Because of the different impact of the categories on the sustainability of a companies' performance and to avoid data pooling with many companies getting the same score, each category gets its own weight factor. Consequently I assign the highest weightings to the categories Corporate Governance and Environment and the lowest weightings to Diversity⁴⁸. The weightings for the seven categories are as follows:

Table 1: Weights of KLD scores

weight of scores		
	strength	concern
Community	8%	-8%
Corporate Governance	25%	-25%
Diversity	5%	-5%
Employee Relations	20%	-20%
Environment	22%	-22%
Human rights	12%	-12%
Product	8%	-8%
SUM	100%	

⁴⁸ See Appendix B for the detailed explanations of categories

After weighting the categories I summed up the strength and the concern – ratings of every single company in order to rank them – from the most to the least points. To better understand the rating procedure, take a look at Table 2, where a simplified example of the procedure is shown.

Table 2: Illustration of the ranking procedure with KLD data

Company Information		Indicators			Scoring		
Company Name	Ticker	Corporate Governance	Pollution Prevention	...	Sum of strengths	Sum of concerns	FINAL SCORE
Hewlett-Packard Company	HPQ	34	13		184	43	141
International Business Machines Corporation	IBM	29	18		168	56	112
...							

After computing the score for each company I rank it according to its final score.

4.1 Positive vs. negative screening procedures

The objective of this work is to find out if socially responsible companies are creating value by operating in a sustainable way (which should be reflected in higher than average stock returns). Therefore, at the beginning

of my research I aimed at doing a positive screening, which means trying to find companies that do extraordinarily well in a social responsibility context, instead of excluding companies that do not (negative screening). Within the KLD dataset, however, there are positive and negative factors, called strengths and concerns. That means that I could combine the two scoring procedures and emphasize on positive factors but at the same time take into account negative factors (concerns). Moreover I didn't use the "exclusionary" factors as strict indicator to totally exclude certain companies, just because they are operating in a controversial business area. However, after doing the ranking, it can be seen that only one company of the TOP portfolio over the years 2002 – 2006 was active in a controversial business area and therefore got points subtracted in its final score.⁴⁹

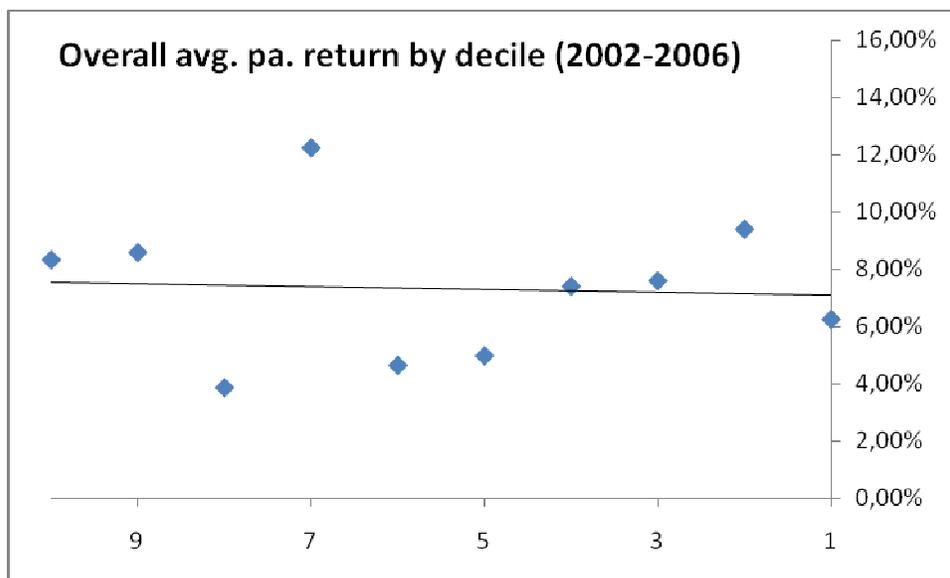
4.2 Average return comparison

To get a first idea of how returns vary with their CSR score, I divide the whole sample into 10 deciles. Every year from 2002 to 2006 I have return-data for approximately 500 companies. After ranking them by their CSR score I divide all companies into 10 deciles for every single year; the companies with the highest social performance go into decile 1, the ones with the worst social performance into decile 10. Each decile therefore contains the stocks of approximately 50 companies. Then I look at the average weekly return of every decile in each year from 2002 to 2006 and also form an overall average of the 5 years of data. According to my hypothesis that

⁴⁹ Agilent Technologies Inc. for Military Involvement

a socially responsible behavior should be reflected in better stock return, companies in the first deciles should have a consistently higher stock returns. However, in the below graph one can see that there is no meaningful correlation in the average returns from 2002-2006. However, I argue that due to the statistical effect of the returns averaging out over the whole time period of 5 years, graph 1 does not convey a meaningful impression.

Graph 1: Average returns by deciles from 2002 - 2006



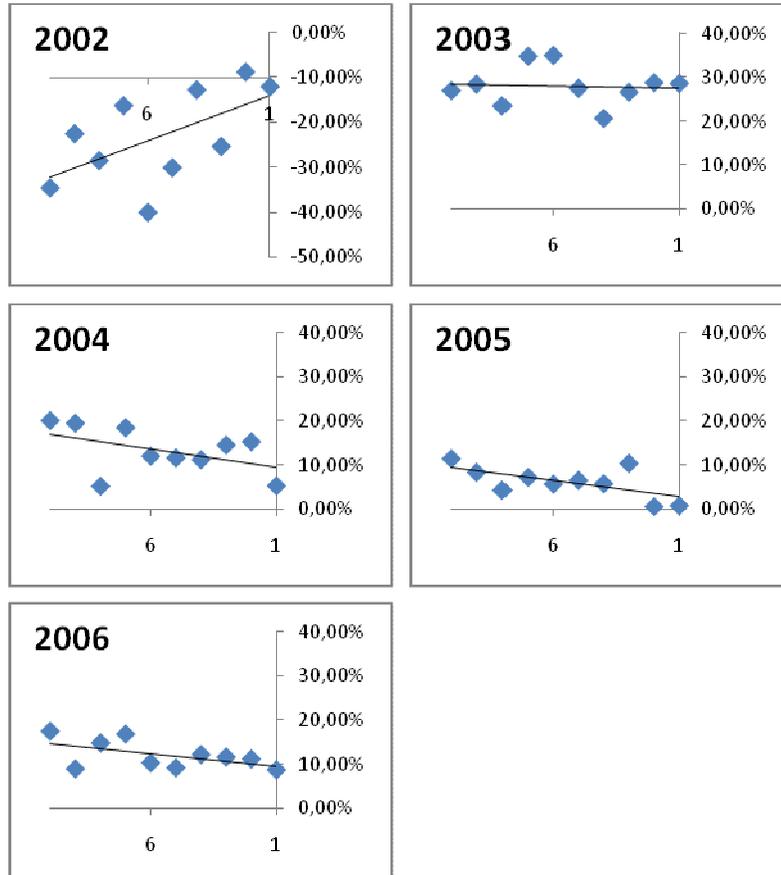
Looking at every single year's average weekly return by decile (Graph 2), one can see that in the first year (2002) the positive correlation between social and financial performance is quite strong and even statistically significant. In 2003 no link between the social and stock performance can be observed in a statistically significant way. However, in the years 2004 to 2006, the positive relationship is even reversed and gets negative, meaning that in the years from 2004 to 2006, socially responsible companies had, on average, lower stock returns than their less socially responsible competi-

tors. The effects of the internet bubble in 2000/2001 can still be observed in 2002's returns; therefore all returns in that year are negative.

Table 3: Average returns by decile (2002-2006)

Average returns (p.a.) by decile (2002-2006)							
		year					
		2002	2003	2004	2005	2006	Overall avg.
decile	1	-12,10%	28,64%	5,18%	0,79%	8,67%	6,24%
	2	-8,87%	28,83%	15,25%	0,57%	11,14%	9,38%
	3	-25,31%	26,64%	14,52%	10,47%	11,59%	7,58%
	4	-12,80%	20,64%	11,14%	5,81%	12,16%	7,39%
	5	-30,01%	27,54%	11,58%	6,58%	9,14%	4,96%
	6	-39,89%	35,09%	11,98%	5,73%	10,27%	4,63%
	7	-16,30%	34,88%	18,46%	7,26%	16,80%	12,22%
	8	-28,44%	23,49%	5,11%	4,33%	14,77%	3,85%
	9	-22,49%	28,49%	19,49%	8,42%	8,91%	8,57%
	10	-34,46%	26,99%	20,08%	11,53%	17,42%	8,31%

Graph 2: Average returns by deciles by year



4.3 Portfolio construction of best vs. worst in class

After this first impression of the link between social responsibility and stock performance I construct a portfolio containing the stocks of 10 companies, which got the highest final score in the ranking. I call this portfolio TOP, because it contains the 10 best performing companies in a socially responsible sense. By the same logic I construct a portfolio called LEAST, containing the 10 worst performing companies in a social responsibility context. The described procedure is iterated for every year. The data supplied by KLD contains rating data on S&P 500 companies from 1.1.2002 to 31.12.2006. Therefore I construct one LEAST and one TOP portfolio every year and rebalance my holdings of stocks every end of year. As the rating agency rates companies not only on the year's performance in a social context but rather includes historical data and behavior of the companies on a longer period of time the portfolio holdings are not lagged.

As an example I would invest in a company with a very high KLD rating score already at the beginning of 2002, even though the rating procedure takes place at different times during the year 2002 for different companies. KLD ensures to review its ratings at least once a year; however their ratings on a specific company are not very volatile. If a company gets a high score on social responsibility in 2001 it is very likely to get a similarly high rating again in 2002. For this reason I use snapshots of KLD rankings at the end of each year, starting with 2002 but already invest in the highest ranked companies at the beginning of 2002 in order to be able to work with a longer return series. This does not distort results, as the portfolio

holdings are very constant over time, meaning that over the period of 5 years, the portfolio composition did not change a lot.⁵⁰

The number of companies for which there is data available in the KLD dataset is supposed to be 500 every year, as the S&P 500 contains 500 stocks at every point in time. However, KLD only rates companies that formed part of the index during a whole year. As the composition of the S&P 500 can change every day and KLD doesn't take these changes in composition into account, it only rates companies that were part of the S&P 500 during the whole year. As a result, in the dataset that I work with there is a universe of less than 500 companies rated every year, whose number also varies slightly over the years. This is the reason why it is necessary to take an absolute amount of stocks into my portfolios (in my case 10 stocks) rather than the top and bottom percentile of companies.

4.4 Portfolio Performance against the benchmark

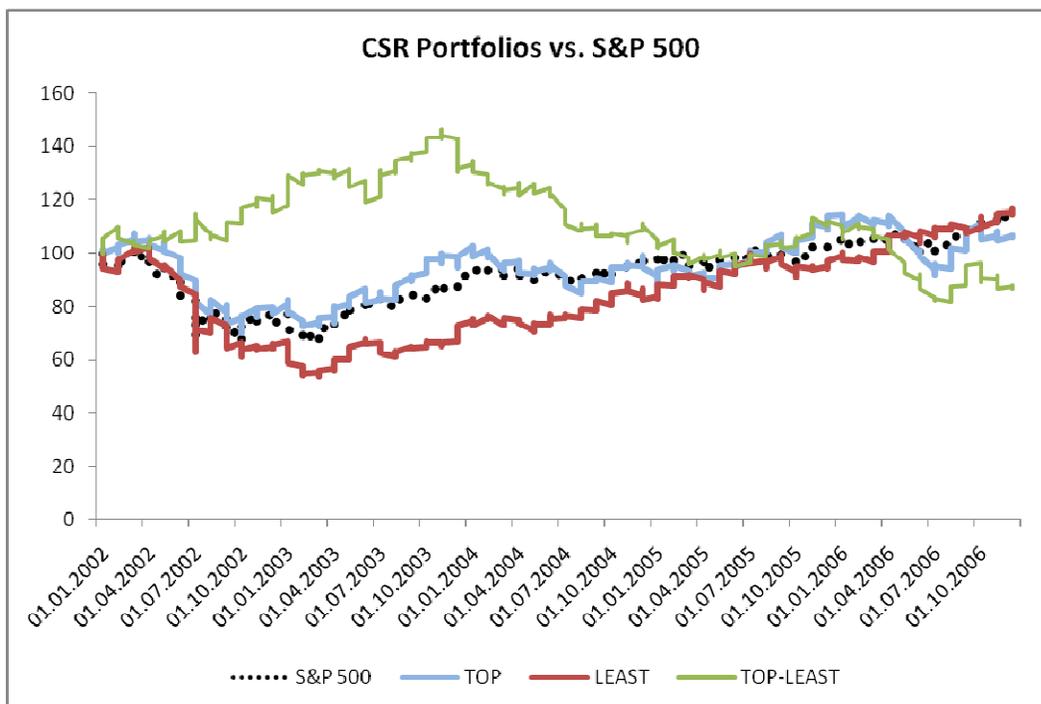
After having constructed two groups of 10 stocks (the best and the least performing companies in a social responsibility context) for each year from 2002 to 2006 I constructed three portfolios. One portfolio contains only the best performing companies of each year, therefore was long in 10 stocks at every point in time. From here onward I will call it the TOP portfolio. Another portfolio contains the 10 "least socially performing" companies in every year. Because it is invested in stocks of these most socially

⁵⁰ See Appendix A for a complete list of TOP and LEAST portfolio holdings from 2002 to 2006

irresponsible companies it is called the LEAST portfolio. Finally I combine the two portfolios by holding a long position in the TOP portfolio and a short position in the LEAST portfolio, therefore being market-neutral in the TOP-LEAST portfolio. However, as the portfolios are only rebalanced at the end of each year, the market neutrality only holds for the newly rebalanced long-short portfolio.

By comparing the returns of these portfolios with the S&P 500 index, I try to find out if the more socially responsible companies were able to earn a premium regarding their stock return because of their more sustainable way of doing business. Take a look at graph 3 to see how the portfolios performed from January 2002 until December 2006.

Graph 3: Performance of the constructed portfolios compared with the benchmark index



4.5 Fama-French regression of returns

As one can see from the first impression that graph 3 gives, the strategy of going long into socially responsible companies and short into “socially irresponsible” ones yielded a great profit in the first two years from 2002 until the beginning of 2004. With the TOP-LEAST portfolio we observe an outperformance of the S&P 500 of up to 40% p.a. in the first year. However, this trend reverses sharply in the year 2004 and the gap between the TOP and the LEAST portfolio begins to close. After the full time horizon of 5 years, the S&P 500 index has outperformed all three portfolios.

However, an important observation can be made, which will be discussed in more detail later: The TOP portfolio outperforms the LEAST portfolio consistently nearly over the whole time period until mid 2006.

Seeing this graph only, one cannot see if there is any significant effect observable, different from already known factors influencing stock returns such as the CAPM beta or Fama French factors⁵¹.

In order to test this I run several regressions with the log returns of the TOP portfolio, as the TOP-LEAST portfolio is market neutral and it does not make any sense to regress its returns on market data. To explain the stock returns I first use the classical CAPM factor, therefore only correcting for market beta and taking it as the independent variable in the regression. As the dependent variable I take the excess returns of my TOP portfolio over the risk-free rate. I calculate it using the weekly log returns of

⁵¹ See Fama, French (1992)

the portfolio over 5 years corrected with the risk free rate – taken from French’s homepage as well. The risk-free rate used is the US T-bill weekly rate that, over four weeks, compounds to the 1-month T-Bill rate from Ibbotson and Associates, Inc.⁵² As a result, the first regression equation looks like follows:

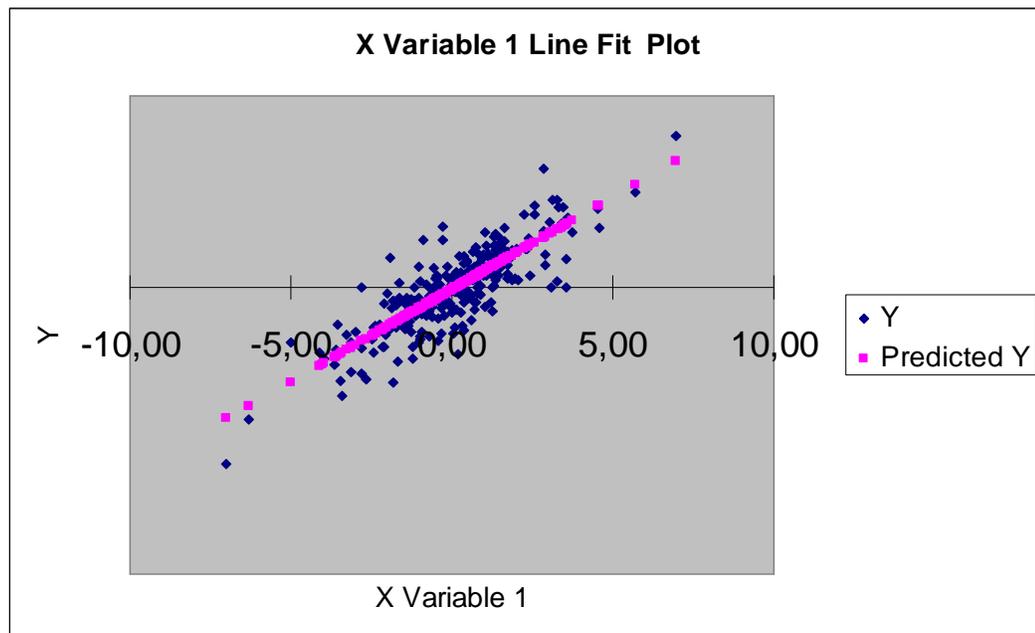
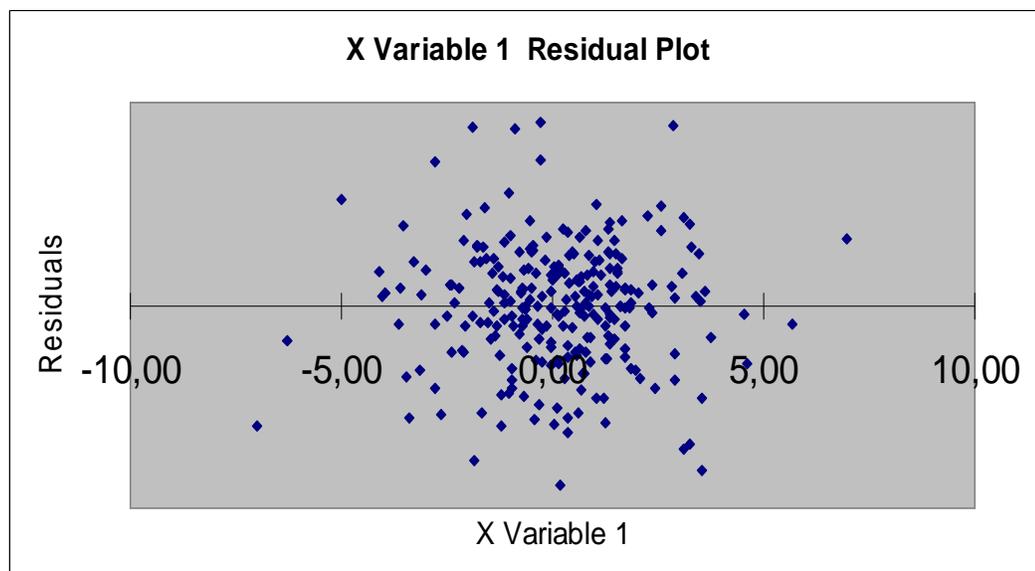
$$(1) \quad r_{TOP} - r_f = \alpha + \beta^*(r_M - r_f) + \varepsilon$$

For this regression the result is presented in the following table:

Table 4: Result of regression 1

SUMMARY OUTPUT			
<i>Regression Statistics</i>			
Multiple R		0,834460321	
R Square		0,696324027	
Adjusted R Square		0,695146988	
Standard Error		0,012036644	
Observations		260	
ANOVA			
	<i>df</i>	<i>SS</i>	<i>MS</i>
Regression	1	0,085709996	0,085709996
Residual	258	0,037379245	0,000144881
Total	259	0,123089241	
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>
Intercept	-0,001494992	0,000747849	-1,999054982
Market beta	0,009635283	0,000396145	24,32261849

⁵² See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html; downloaded on 03/04/08.

Graph 4: Market beta in classical CAPM regression 1**Graph 5: Residuals of CAPM regression 1**

As we can see, variable 1 which I call beta in (1) is highly significant on a 95% confidence interval and positive. As can be seen graphically in the variable 1 fit line plot as well, the beta relationship is quite strong and the residuals don't seem to have much structure. The beta in the regression is from weekly returns – therefore if you annualize it you get a beta of 0,501 to the S&P 500. The intercept (in my regression equation (1) called alpha) is also significant on a 95% interval and negative. Getting a significant alpha means that the independent variable (in this case only beta) is not enough to explain the returns of my TOP portfolio. In this regression the alpha is the factor independent return component, comprising all other effects that influence the stock return.

Knowing that the CAPM using only market beta to explain stock returns was proven wrong or, more precisely, improved by Fama and French⁵³ who then introduced two more factors – namely a small firm factor and a book-to-market factor – I expand the regression equation (1) with two Fama/French factors. The stock return of my TOP portfolio is now explained by the three independent variables market beta, *s* and *h*, as illustrated in regression equation (2). Alpha still constitutes the factor independent variable, comprising effects that could be explained with other factors (e.g. a more socially responsible behavior).

$$(2) \quad r_{TOP} - r_f = \alpha + \beta * (r_M - r_f) + s * SMB + h * HML + \varepsilon$$

⁵³ Fama, French (1992)

Beta represents the market beta as in the former CAPM regression, s is the variable for the “small-minus-big” market capitalization and h is the variable for the “high-minus-low” book-to-market value. See Fama, French (1992) for a detailed description of the SMB and HML factors.

In order to run regression (2) I download the excess market returns ($r_M - r_f$), the SMB and HML factors and the risk-free rate from 2002 to 2006 from Kenneth French’s homepage. The dependent variable of regression (2) are the excess returns of my TOP portfolio. The result of the regression is shown below:

Table 5: Result of regression 2

SUMMARY OUTPUT

<i>Regression Statistics</i>			
Multiple R		0,843808598	
R Square		0,712012951	
Adjusted R Square		0,708638102	
Standard Error		0,011767292	
Observations		260	

ANOVA			
	<i>df</i>	<i>SS</i>	<i>MS</i>
Regression	3	0,087641133	0,029213711
Residual	256	0,035448107	0,000138469
Total	259	0,123089241	

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>
Intercept	-0,00103413	0,000748995	-1,38068795
Market beta	0,009067926	0,000416965	21,74743271
Size	0,000958023	0,000651928	1,469521422
Book to Market	-0,00309039	0,000884982	-3,49203292

In this second regression I get a slightly higher R^2 , which means that regressing the returns on three factors is slightly better than relying only on market beta. However the R^2 is still quite low compared to Fama and French's research where they can explain up to 95% of the stock returns with three factors. There are probably several reasons for the bad fit. One reason is the short period of return series that I run my regression on (only 5 years). The second reason is the time frame. In 2002, still a lot of distortions from the burst of the internet bubble and the terror attacks on the World Trade Center are incorporated into stock returns. Another factor could be the weekly data I'm working with, which contains much more noise than monthly data, for instance.

Taking a look at the different variables we see that beta (variable 1 in the regression table) is positive and highly significant, which is not surprising. The very high value of the t-statistic (21,75) can be explained by looking at the TOP portfolio holdings: it contains mainly large caps which are highly correlated with the S&P500 index. The s (variable 2 in the regression table), expressing the small firm effect is positive as well, but only significant on the 90% confidence interval. This means that the small size effect during this period was not really observable. Variable 3 standing for h, the factor explaining the value stock effect is indeed negative and highly significant even on the 95% confidence interval. That means that in my sample, value stocks tended to underperform growth stocks significantly by a factor of -0,1607 (annualized). Again, I think that the short period of time for which I could test my regression is too short and the noise in the weekly data too

strong to get the value-outperformance effect observed by Fama and French.⁵⁴

A quite interesting observation from the regression is the insignificant alpha on a 95% confidence interval. As the alpha still constitutes the factor independent variable, an alpha significantly different from zero could point to the fact that CSR can explain a part of the TOP portfolio returns. If I take into account the 90% confidence interval, the alpha becomes significant indeed. However, the observed alpha is again negative. The interpretation of this negative alpha is difficult because we do not know which other factors could have an influence on the TOP portfolio return. To analyze in more detail if CSR could be a determining factor to explain stock returns I run a Fama-MacBeth regression in chapter 4.6, introducing a fourth factor into my factor-model from regression (2). This factor is CSR.

Against the argument that the time frame of my analysis is already too short because of the lack of more data, I also run the regression of the TOP portfolio on the three Fama French factors only over the first two years (January 2002 to December 2003). As can be seen in graph 3, the TOP portfolio clearly outperforms both the index and the LEAST portfolio during this time period. As a result one could expect a significant and positive alpha running the regression in this time horizon. However, this is not the case. Alpha, h and s are all three insignificant during these two years and

⁵⁴ Fama, French (1992)

market beta is the only significant factor able to explain the stock returns. This is intuitively easy to understand, as global equity markets rallied within the period from 2002 to 2004.

4.6 Fama-Macbeth regression of returns⁵⁵

In order to measure the effect of CSR on the stock returns of my TOP portfolio and see if CSR can explain a part of the returns, I run another regression, named after Fama and Macbeth. So far we have only seen that even with 3 different factors (Fama-French), the stock returns of the TOP portfolio could not be fully explained and the alpha is still significant on a 90% confidence interval. I now include a 4th factor named CSR, with its corresponding factor loading c and regress each single company's return on the 4 factors. Therefore, my regression is of the following form:

$$(3) \quad r_i - r_f = \alpha + \beta^*(r_M - r_f) + s^*SMB + h^*HML + c^*CSR + \varepsilon$$

The factors CSR, HML and SMB in this regression are all calculated with a mimicking-portfolio, in the case of CSR, subtracting the return of the 10 worst socially responsible performers from the return of the 10 best CSR-abiding companies in every year from 2002 - 2006. For the factors HML and SMB the book to market value and the market capitalization are used respectively. Note an important difference to the last regressions: Now I do not only run one regression, namely the TOP portfolio return on the

⁵⁵ See Fama, Macbeth (1973)

different factors, but rather 500 regressions. Each company's return is regressed on the 4 different factors (market excess return, SMB, HML and CSR) and a constant (set to 1). As a result I get 4 factor loadings (β , s, h, c) for each of the 500 companies forming part of the S&P 500. The average betas are presented in table 6:

Table 6: Average factors from regression (3)

	alpha	capm b	s	h	c
Average betas 02	-0,0010	0,9912	0,0196	-0,0048	0,0035
Average betas 02-03	-0,0007	0,9368	0,0197	-0,0038	0,0033
Average betas 02-04	-0,0008	0,8937	0,0239	-0,0056	0,0059
Average betas 02-05	-0,0004	0,8508	0,0243	-0,0053	0,0040
Average betas 02-06	-0,0005	0,8062	0,0252	-0,0041	0,0075

The alphas are, on average negative, which is not surprising as it was also the case in the former regressions. CAPM beta is the only highly significant factor in the regression, being close to 1 on average (the market has a beta of 1 and the average of 500 companies' betas is therefore already a good proxy for the market portfolio). The average of the other factors (s, h, c) is insignificant, however, the average of these factors cannot be interpreted in a meaningful way. Therefore, with the factor loadings from regression (3) I run a second regression which has the following form:

$$(4) \quad R_{i,t} = \gamma_{0,t} + \gamma_{1,t} * \beta_i + \gamma_{2,t} * s_i + \gamma_{3,t} * h_i + \gamma_{4,t} * c_i + \eta_{i,t}$$

For each of the 500 companies I calculated alpha, beta, s, h and c. These factor loadings are now regressed on the return of the corresponding

company. As a result, regression (4) yields the risk premia ($\gamma_1, \gamma_2, \gamma_3, \gamma_4$) for the 4 factors from regression (3). The annualized risk premia can be seen in the table below:

Table 7: Results of regression (4)

2002	risk premium (weekly)	risk premium (annualized)	standard error	t-statistic
Delta 1 (capm)	-0,0057	-0,2985	0,0045	-1,2727
Delta 2 (size)	-0,0679	-3,5296	0,0465	-1,4599
Delta 3 (ptbv)	-0,0250	-1,2983	0,0307	-0,8144
Delta 4 (csr)	0,0192	0,9970	0,0348	0,5507

2002-2003	risk premium (weekly)	risk premium (annualized)	standard error	t-statistic
Delta 1 (capm)	-0,0008	-0,0414	0,0048	-0,1651
Delta 2 (size)	-0,0087	-0,4510	0,0625	-0,1388
Delta 3 (ptbv)	0,0291	1,5129	0,0524	0,5556
Delta 4 (csr)	0,0281	1,4631	0,0460	0,6115

2002-2004	risk premium (weekly)	risk premium (annualized)	standard error	t-statistic
Delta 1 (capm)	-0,0002	-0,0104	0,0051	-0,0393
Delta 2 (size)	0,0027	0,1396	0,0664	0,0404
Delta 3 (ptbv)	0,0268	1,3927	0,0616	0,4346
Delta 4 (csr)	0,0163	0,8485	0,0509	0,3208

2002-2005	risk premium (weekly)	risk premium (annualized)	standard error	t-statistic
Delta 1 (capm)	-0,0006	-0,0301	0,0053	-0,1083
Delta 2 (size)	0,0187	0,9734	0,0696	0,2688
Delta 3 (ptbv)	0,0231	1,2020	0,0673	0,3433
Delta 4 (csr)	0,0103	0,5349	0,0574	0,1793

2002-2006	risk premium (weekly)	risk premium (annualized)	standard error	t-statistic
Delta 1 (capm)	-0,0005	-0,0279	0,0057	-0,0945
Delta 2 (size)	0,0193	1,0049	0,0706	0,2737
Delta 3 (ptbv)	0,0219	1,1369	0,0768	0,2846
Delta 4 (csr)	0,0066	0,3416	0,0620	0,1060

What I observe in the above regression is that none of the risk premia is statistically significant. Even on a 90% confidence interval, which has a critical value of 1,282, none of the deltas is significant (except from the size risk premium in the year 2002). During the tested time period, none of the risk factors seem to be statistically significant, which is surprising.

I can therefore neither prove the relevance of a CSR factor when explaining stock returns with the Fama MacBeth method. This result is consistent with most of the existing literature on this topic.

4.7 Thoughts on the regression results

Looking back at the performance chart (graph 3) one can see that the LEAST portfolio clearly did not outperform the TOP portfolio. It did indeed underperform both the benchmark index and the TOP portfolio throughout most of time. A commonly used theory within CSR discussions is that active CSR costs the company money and possibly diminishes its productivity. If this would be the case one should clearly see a discount in socially responsible corporations' stock returns because it would mean that companies abiding by CSR guidelines are less efficient than others. An important point is, that this "cost" of being good cannot be observed within my dataset. Again, the time frame is not long enough to give us valuable evidence. However, the data suggests that even over a short time horizon not being socially responsible as a company does not add value to its stock.

Addressing the problem of a small time horizon I thought about extending the return series to earlier years. Holding the same stocks than the ones in the TOP portfolio in 2002 already in 2000 would be possible and make sense – as the social responsibility of a company doesn't change from one year to another but is rather a long-term strategy for a company. Nevertheless the synthetic extension of my TOP portfolio to earlier years would be extremely distorted by the burst of the internet bubble in the years 2000 and 2001 and the terror attacks on the World Trade Center on the 11th September 2001. Taking a look at the TOP portfolio holdings (see Appendix A), there are many companies in the IT business such as IBM, Intel or Dell. Therefore extending the dataset synthetically to former years would not make sense as the distortion of these events on the TOP portfolio return would be large and the gain of data points in the sample not valuable.

An extension of the dataset to the year 2007 is not valuable either because of the subprime crisis in the US, triggered by the fall of US house prices. In the year 2007 this crisis made equity indices around the world tumble and does not make it recommendable to include the year in my analysis, as stock prices don't behave normally during these kinds of crises.

5 Conclusion

In this thesis I have looked at the social behavior of corporations and how it is linked to financial performance and hence reflected in stock prices. Companies nowadays seem to think that CSR can possibly pay, as can be seen from many CSR initiatives in companies around the globe and the emergence of more and more literature on the topic.

Beginning in the 1950s social responsibility of firms has been discussed not only in the boardrooms of large corporations but also in academia. Since then, it has always been a very controversial topic and still nowadays is regarded as the only way to long-term prosperity by some and a terrible way to misspend money by others. Academics and finance professionals have been trying to resolve these conflicting theories and to find some form of common understanding in the last decades. However, there is still no definitive answer to the question: Is CSR favorable for a companies' financial performance?

This question can be posed from two different angles. At one hand, CSR comes at a certain cost. If you look at the financial performance of a firm in a single year, CSR measures will definitely cut some piece out of the firms' profits. Nevertheless, if you extend your horizon to 5 or even 10 or 15 years, the firm may be better off with CSR than without. The argument for this is, that socially responsible behavior reduces risks; from the risk of being sued to the risk to lose employees to the risk to get negative press

there are many possible “dangers” that can possibly be avoided by the investment in CSR.⁵⁶ Moreover, consumer studies have shown that people in industrialized economies more and more begin to consider “soft” facts as social responsibility when buying everyday consumer goods.

On the other hand, you could also look at the cost of equity of a company. If there are enough investors caring about the social engagement of the firms they invest their money in (see Heinkel et al. (2001) – they show that this percentage is already at 10% and growing), firms will have to start worrying about their financing costs on the equity market. In my opinion this development will still pick up speed and will possibly be a threat to socially “irresponsible” companies in some years.

As we could see in section 4, there seems to be no significant effect of a social responsibility screen on stock performance in the short-term yet. As pointed out earlier in my thesis, the main problem of statistical insignificance seems to be the short period of time which I got data for. There are papers, however, that analyze the stock performance of socially responsible companies over a longer time horizon. Statman (2005), for instance, finds a significant outperformance in SRI funds from 1990 to 2004 and can show that the performance of SRI funds depends heavily on the quality of their screening procedures. Social responsibility is still very hard to assess and to measure – therefore social screens differ a lot in their results. As Guerard (1997) and Jennings and Martin (2006) could show, the quality of

⁵⁶ See Barnett, Salomon (2003, 382) and Heal (2004)

screens and screens within a socially responsible universe improve the performance of social portfolios significantly. As a consequence one can conclude that as the quality of screening procedures and the availability of those screenings improve, the outperformance of socially responsible companies' stocks will become more visible.

Future research should therefore focus more on assessing and measuring the social engagement of the corporation. Given that academics will find new ways to make real corporate citizenship more transparent (instead of trusting marketing departments of large companies), the link between social and financial performance can probably be shown more exactly.

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Appendix A

Portfolio holdings from 2002 to 2006 (List of companies):

2002			
TOP 10			
	Ticker	Name	Score
1	INTC	Intel Corporation	105
2	LUV	Southwest Airlines Co.	78
3	CINF	Cincinnati Financial Corporation	68
4	NKE	NIKE, Inc.	66
5	APA	Apache Corporation	62
6	XRX	Xerox Corporation	58
7	PG	Procter & Gamble Company	58
8	ITT	ITT Industries, Inc.	51
9	HPQ	Hewlett-Packard Company	50
10	WHR	Whirlpool Corporation	50

WORST 10			
	Ticker	Name	Score
1	CMS	CMS Energy Corporation	-122
2	DUK	Duke Energy Corporation	-125
3	LMT	Lockheed Martin Corporation	-126
4	EP	El Paso Corporation	-126
5	WMI	Waste Management, Inc.	-127
6	CAT	Caterpillar Inc.	-133
7	COP	ConocoPhillips	-140
8	XOM	Exxon Mobil Corporation	-145
9	OXY	Occidental Petroleum Corporation	-152
10	FE	FirstEnergy Corporation	-169

2003			
TOP 10			
	Ticker	Name	Score
1	LUV	Southwest Airlines Co.	83
2	INTC	Intel Corporation	81
3	CINF	Cincinnati Financial Corporation	73
4	FNM	Fannie Mae	68
5	NKE	NIKE, Inc.	58

6	BAX	Baxter International, Inc.	54
7	TXN	Texas Instruments Incorporated	48
8	TLAB	Tellabs, Inc.	46
9	RF	Regions Financial Corp	45
10	MAR	Marriott International, Inc.	44

WORST 10

	Ticker	Name	Score
1	WMT	Wal-Mart Stores, Inc.	-115
2	AEP	American Electric Power Company, Inc.	-116
3	CMS	CMS Energy Corporation	-128
4	CAG	ConAgra Foods, Inc.	-129
5	TYC	Tyco International Ltd.	-131
6	XOM	Exxon Mobil Corporation	-148
7	COP	ConocoPhillips	-152
8	DUK	Duke Energy Corporation	-165
9	OXY	Occidental Petroleum Corporation	-172
10	FE	FirstEnergy Corporation	-184

2004

TOP 10

	Ticker	Name	Score
1	INTC	Intel Corporation	129
2	LUV	Southwest Airlines Co.	83
3	WHR	Whirlpool Corporation	68
4	GE	General Electric Company	62
5	FHN	First Horizon National Corporation	61
6	XRX	Xerox Corporation	56
7	TLAB	Tellabs, Inc.	56
8	BAX	Baxter International, Inc.	54
9	MAR	Marriott International, Inc.	52
10	TXN	Texas Instruments Incorporated	48

WORST 10

	Ticker	Name	Score
1	HAL	Halliburton Company	-120
2	DUK	Duke Energy Corporation	-125
3	NEM	Newmont Mining Corporation	-127
4	XEL	Xcel Energy, Inc.	-132
5	RAI	Reynolds American, Inc.	-133
6	TYC	Tyco International Ltd.	-146
7	COP	ConocoPhillips	-152
8	DYN	Dynegy Inc.	-161
9	XOM	Exxon Mobil Corporation	-162
10	FE	FirstEnergy Corporation	-214

2005**TOP 10**

	Ticker	Name	Score
1	INTC	Intel Corporation	152
2	MOT	Motorola, Inc.	146
3	ECL	Ecolab Inc.	112
4	TXN	Texas Instruments Incorporated	110
5	A	Agilent Technologies, Inc.	109
6	EK	Eastman Kodak Company	104
7	LUV	Southwest Airlines Co.	103
8	AMD	Advanced Micro Devices, Inc.	102
9	HPQ	Hewlett-Packard Company	92
10	JNJ	Johnson & Johnson	89

WORST 10

	Ticker	Name	Score
1	XEL	Xcel Energy, Inc.	-123
2	BNI	Burlington Northern Santa Fe Corp.	-125
3	ADM	Archer-Daniels-Midland Company	-130
4	SHLD	Sears Holdings Corporation	-135
5	COP	ConocoPhillips	-144
6	TSN	Tyson Foods, Inc.	-145
7	AEP	American Electric Power Company, Inc.	-149
8	DYN	Dynegy Inc.	-167
9	FE	FirstEnergy Corporation	-191
10	XOM	Exxon Mobil Corporation	-195

2006**TOP 10**

	Ticker	Name	Score
1	A	Agilent Technologies, Inc.	159
2	INTC	Intel Corporation	152
3	HPQ	Hewlett-Packard Company	149
4	MOT	Motorola, Inc.	146
5	AMD	Advanced Micro Devices, Inc.	129
6	AMAT	Applied Materials, Inc.	124
7	XRX	Xerox Corporation	119
8	NKE	NIKE, Inc.	112
9	TXN	Texas Instruments Incorporated	110
10	SBUX	Starbucks Corporation	102

WORST 10

	Ticker	Name	Score
1	RAI	Reynolds American, Inc.	-141

2	CVX	Chevron Corporation	-142
3	SHLD	Sears Holdings Corporation	-150
4	COP	ConocoPhillips	-160
5	DYN	Dynegy Inc.	-162
6	FE	FirstEnergy Corporation	-169
7	TSN	Tyson Foods, Inc.	-170
8	ADM	Archer-Daniels-Midland Company	-172
9	WMT	Wal-Mart Stores, Inc.	-191
10	XOM	Exxon Mobil Corporation	-220

Appendix B

KLD STATS dataset description and indicator details⁵⁷

KLD STATS (STATISTICAL TOOL FOR ANALYZING TRENDS IN SOCIAL AND ENVIRONMENTAL PERFORMANCE) is a data set with annual snap-shots of the environmental, social, and governance performance of companies rated by KLD Research & Analytics, Inc.

Summary of Data Contained in each Annual KLD STATS spreadsheet:

- Identifying Company information (Name, Ticker, CUSIP)
- Index Membership (DS400, S&P 500, LCS, Russell 1000, BMS, Russell 2000)
- Strength and Concern ratings for multiple indicators within seven qualitative issue areas
- Concerns for six controversial business issues
- Summary Counts for each of these 13 areas

Strength and Concern Ratings:

KLD covers approximately 80 indicators in seven major Qualitative Issue Areas including Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights and Product. In addition to this, KLD also provides exclusionary screening information for involvement in the following Controversial Business Issues: Alcohol, Gambling, Firearms, Military, Nuclear Power, and Tobacco. The qualitative indicators include both positive and negative ratings (strengths and concerns), while the controversial business indicators include negative ratings only.

⁵⁷ Appendix B – the dataset description and indicator details - is directly copied from KLD's Rating Explanation document.

KLD's Research:

The data are gathered through several research processes, which result in a full profile of the company's performance based on Environment, Social, and Governance (ESG) factors. KLD's social research is distributed in **SOCRATES** - The Corporate Social Ratings database program that provides access to KLD's ratings and other data pertaining to the social records of over 3000 publicly traded U.S. companies.

For more information about KLD's Research methodology, visit www.KLD.com.

Spreadsheet Presentation/Layout:

The data presented in **KLD STATS** is a binary summary of KLD's positive and negative ratings. In each case, if KLD assigned a rating in a particular issue (either positive or negative) KLD indicates this with a 1 in the corresponding cell. If the company did not have a strength or concern in that issue, this is indicated with a 0. The data are separated into spreadsheets based on year of data. Each year, KLD freezes its ratings and index membership to reflect the data at calendar year end. Each table contains identifying information about the company, index membership, a listing of strengths and concerns, involvement in controversial business issues, and total counts for each area.

Each year's spreadsheet includes all strength, concern, count, and index membership fields regardless of whether the data were available. In the case that a rating was not tracked in a particular year, KLD indicates this with "NR", meaning "Not Rated." In the case that the index membership was not covered, KLD indicates this with "NA", meaning "Not Available." For each year's spreadsheet, there is a separate sheet that provides a brief description of the codes located in the column headings. The Key also provides any information about ratings that KLD has changed, added, deleted, renamed, or moved to another category. The following descriptions provide more detailed information about these ratings.

Additionally, at the end of each spreadsheet is a summary count of all strengths and concerns the company received in a general category (either Qualitative Issue Area or Controversial Business Issue) in that year.

QUALITATIVE ISSUE AREAS

COMMUNITY (COM-)

STRENGTHS

Charitable Giving (COM-str-A). The company has consistently given over 1.5% of trailing three-year net earnings before taxes (NEBT) to charity, or has otherwise been notably generous in its giving. In 2002, KLD renamed the Generous Giving Strength as Charitable Giving.

Innovative Giving (COM-str-B). The company has a notably innovative giving program that supports nonprofit organizations, particularly those promoting self-sufficiency among the economically disadvantaged. Companies that permit nontraditional federated charitable giving drives in the workplace are often noted in this section as well.

Non-US Charitable Giving (COM-str-F). The company has made a substantial effort to make charitable contributions abroad, as well as in the U.S. To qualify, a company must make at least 20% of its giving, or have taken notably innovative initiatives in its giving program, outside the U.S.

Support for Housing (COM-str-C). The company is a prominent participant in public/private partnerships that support housing initiatives for the economically disadvantaged, e.g., the National Equity Fund or the Enterprise Foundation.

Support for Education (COM-str-D). The company has either been notably innovative in its support for primary or secondary school education, particularly for those programs that benefit the economically disadvantaged, or the company has prominently supported job-training programs for youth. In 1994, KLD added the Support for Education Strength.

Indigenous Peoples Relations (COM-str-E). The company has established relations with indigenous peoples in the areas of its proposed or current operations that respect the sovereignty, land, culture, human rights, and intellectual property of the indigenous peoples. KLD began assigning this strength in 2000. In 2002 KLD moved this strength rating into the Human Rights area.

Volunteer Programs (COM-str-G). The company has an exceptionally strong volunteer program. In 2005, KLD added the Volunteer Programs Strength.

Other Strength (COM-str-X). The company has either an exceptionally strong in-kind giving program or engages in other notably positive community activities.

CONCERNS

Investment Controversies (COM-con-A). The company is a financial institution whose lending or investment practices have led to controversies, particularly ones related to the Community Reinvestment Act.

Negative Economic Impact (COM-con-B). The company's actions have resulted in major controversies concerning its economic impact on the community. These controversies can include issues related to environmental contamination, water rights disputes, plant closings, "put-or-pay" contracts with trash incinerators, or other company actions that adversely affect the quality of life, tax base, or property values in the community.

Indigenous Peoples Relations (COM-con-C). The company has been involved in serious controversies with indigenous peoples that indicate the company has not respected the sovereignty, land, culture, human rights, and intellectual property of indigenous peoples. KLD began assigning this concern in 2000. In 2002 KLD moved this strength rating into the Human Rights area.

Tax Disputes (COM-con-D). The company has recently been involved in major tax disputes involving Federal, state, local or non-U.S. government authorities, or is involved in controversies over its tax obligations to the community. In 2005, KLD moved Tax Disputes from Corporate Governance to Community.

Other Concern (COM-con-X). The company is involved with a controversy that has mobilized community opposition, or is engaged in other noteworthy community controversies.

CORPORATE GOVERNANCE (CGOV-)

In 2002 KLD renamed the Other category to Corporate Governance in order to better communicate the intent and content of these ratings.

STRENGTHS

Limited Compensation (CGOV-str-A). The company has recently awarded notably low levels of compensation to its top management or its board members. The limit for a rating is total compensation of less than \$500,000 per year for a CEO or \$30,000 per year for outside directors.

Ownership Strength (CGOV-str-C). The company owns between 20% and 50% of another company KLD has cited as having an area of social strength, or is more than 20% owned by a firm that KLD has rated as having social strengths. When a company owns more than 50% of another firm, it has a controlling interest, and KLD treats the second firm as if it is a division of the first.

Transparency Strength (CGOV-str-D). The company is particularly effective in reporting on a wide range of social and environmental performance measures, or is exceptional in reporting on one particular measure. In 2005, KLD added the Transparency Strength, which incorporates information from the former Environment: Communications Strength (ENV-str-E) as part of its content.

Political Accountability Strength (CGOV-str-E). The company has shown markedly responsible leadership on public policy issues and/or has an exceptional record of transparency and accountability concerning its political involvement in state or federal-level U.S. politics, or in non-U.S. politics. In 2005, KLD added the Political Accountability Strength.

Other Strength (CGOV-str-X). The company has a unique and positive corporate culture, or has undertaken a noteworthy initiative not covered by KLD's other corporate governance ratings.

CONCERNS

High Compensation (CGOV-con-B). The company has recently awarded notably high levels of compensation to its top management or its board members. The limit for a rating is total compensation of more than \$10 million per year for a CEO or \$100,000 per year for outside directors.

Ownership Concern (CGOV-con-F). The company owns between 20% and 50% of a company KLD has cited as having an area of social concern, or is more than 20% owned by a firm KLD has rated as having areas of concern. When a company owns more than 50% of another firm, it has a controlling interest, and KLD treats the second firm as if it is a division of the first.

Accounting Concern (CGOV-con-G). The company is involved in significant accounting-related controversies. In 2005, KLD added the Accounting Concern.

Transparency Concern (CGOV-con-H). The company is distinctly weak in reporting on a wide range of social and environmental performance measures. In 2005, KLD added the Transparency Concern.

Political Accountability Concern (CGOV-con-I). The company has been involved in noteworthy controversies on public policy issues and/or has a very poor record of transparency and accountability concerning its political involvement in state or federal-level U.S. politics, or in non-U.S. politics. In 2005, KLD added the Political Accountability Concern.

Other Concern (CGOV-con-X). The company is involved with a controversy not covered by KLD's other corporate governance ratings.

DIVERSITY (DIV-)

STRENGTHS

CEO (DIV-str-A). The company's chief executive officer is a woman or a member of a minority group.

Promotion (DIV-str-B). The company has made notable progress in the promotion of women and minorities, particularly to line positions with profit-and-loss responsibilities in the corporation.

Board of Directors (DIV-str-C). Women, minorities, and/or the disabled hold four seats or more (with no double counting) on the board of directors, or one-third or more of the board seats if the board numbers less than 12.

Work/Life Benefits (DIV-str-D). The company has outstanding employee benefits or other programs addressing work/life concerns, e.g. childcare, elder care, or flextime. In 2005, KLD renamed this strength from Family Benefits Strength.

Women & Minority Contracting (DIV-str-E). The company does at least 5% of its subcontracting, or otherwise has a demonstrably strong record on purchasing or contracting, with women-and/or minority-owned businesses.

Employment of the Disabled (DIV-str-F). The company has implemented innovative hiring programs; other innovative human resource programs for the disabled, or otherwise has a superior reputation as an employer of the disabled.

Gay & Lesbian Policies (DIV-str-G). The company has implemented notably progressive policies toward its gay and lesbian employees. In particular, it provides benefits to the domestic partners of its employees. In 1995, KLD added the Gay & Lesbian Policies Strength, which was originally titled the Progressive Gay/Lesbian Policies strength.

Other Strength (DIV-str-X). The company has made a notable commitment to diversity that is not covered by other KLD ratings.

CONCERNS

Controversies (DIV-con-A). The company has either paid substantial fines or civil penalties as a result of affirmative action controversies, or has otherwise been involved in major controversies related to affirmative action issues.

Non-Representation (DIV-con-B). The company has no women on its board of directors or among its senior line managers.

Other Concern (DIV-con-X). The company is involved in diversity controversies not covered by other KLD ratings.

EMPLOYEE RELATIONS (EMP-)

STRENGTHS

Union Relations (EMP-str-A). The company has taken exceptional steps to treat its unionized workforce fairly. KLD renamed this strength from Strong Union Relations.

No-Layoff Policy (EMP-str-B). The company has maintained a consistent no-layoff policy. KLD has not assigned strengths for this issue since 1994.

Cash Profit Sharing (EMP-str-C). The company has a cash profit-sharing program through which it has recently made distributions to a majority of its workforce.

Employee Involvement (EMP-str-D). The company strongly encourages worker involvement and/or ownership through stock options available to a majority of its employees; gain sharing, stock ownership, sharing of financial information, or participation in management decision-making.

Retirement Benefits Strength (EMP-str-F). The company has a notably strong retirement benefits program. KLD renamed this strength from Strong Retirement Benefits.

Health and Safety Strength (EMP-str-G). The company has strong health and safety programs.

Other Strength (EMP-str-X). The company has strong employee relations initiatives not covered by other KLD ratings.

CONCERNS

Union Relations (EMP-con-A). The company has a history of notably poor union relations. KLD renamed this concern from Poor Union Relations.

Health and Safety Concern (EMP-con-B). The company recently has either paid substantial fines or civil penalties for willful violations of employee health and safety standards, or has been otherwise involved in major health and safety controversies.

Workforce Reductions (EMP-con-C). The company has made significant reductions in its workforce in recent years.

Retirement Benefits Concern (EMP-con-D). The company has either a substantially under funded defined benefit pension plan, or an inadequate retirement benefits program. In 2004, KLD renamed this concern from Pension/Benefits Concern.

Other Concern (EMP-con-X). The company is involved in an employee relations controversy that is not covered by other KLD ratings.

ENVIRONMENT (ENV-)

STRENGTHS

Beneficial Products and Services (ENV-str-A). The company derives substantial revenues from innovative remediation products, environmental services, or products that promote the efficient use of energy, or it has developed innovative products with environmental benefits. (The term “environmental service” does not include services with questionable environmental effects, such as landfills, incinerators, waste-to-energy plants, and deep injection wells.)

Pollution Prevention (ENV-str-B). The company has notably strong pollution prevention programs including both emissions reductions and toxic-use reduction programs.

Recycling (ENV-str-C). The company either is a substantial user of recycled materials as raw materials in its manufacturing processes, or a major factor in the recycling industry.

Clean Energy (ENV-str-D). The company has taken significant measures to reduce its impact on climate change and air pollution through use of renewable energy and clean fuels or through energy efficiency. The company has demonstrated a commitment to promoting climate-friendly policies and practices outside its own operations. KLD renamed the Alternative Fuels strength as Clean Energy Strength.

Communications (ENV-str-E). The company is a signatory to the CERES Principles, publishes a notably substantive environmental report, or has notably effective internal communications systems in place for environmental best practices. KLD began assigning strengths for this issue in 1996, and then incorporated the issue with the Corporate Governance: Transparency rating (CGOV-str-D), which was added in 2005. In all spreadsheets it is incorporated into the Transparency rating.

Property, Plant, and Equipment (ENV-str-F). The company maintains its property, plant, and equipment with above average environmental performance for its industry. KLD has not assigned strengths for this issue since 1995.

Other Strength (ENV-str-X). The company has demonstrated a superior commitment to management systems, voluntary programs, or other environmentally proactive activities.

CONCERNS

Hazardous Waste (ENV-con-A). The company's liabilities for hazardous waste sites exceed \$50 million, or the company has recently paid substantial fines or civil penalties for waste management violations.

Regulatory Problems (ENV-con-B). The company has recently paid substantial fines or civil penalties for violations of air, water, or other environmental regulations, or it has a pattern of regulatory controversies under the Clean Air Act, Clean Water Act or other major environmental regulations.

Ozone Depleting Chemicals (ENV-con-C). The company is among the top manufacturers of ozone depleting chemicals such as HCFCs, methyl chloroform, methylene chloride, or bromines.

Substantial Emissions (ENV-con-D). The company's legal emissions of toxic chemicals (as defined by and reported to the EPA) from individual plants into the air and water are among the highest of the companies followed by KLD.

Agricultural Chemicals (ENV-con-E). The company is a substantial producer of agricultural chemicals, *i.e.*, pesticides or chemical fertilizers.

Climate Change (ENV-con-F). The company derives substantial revenues from the sale of coal or oil and its derivative fuel products, or the company derives substantial revenues indirectly from the combustion of coal or oil and its derivative fuel products. Such companies include electric utilities, transportation companies with fleets of vehicles, auto and truck manufacturers, and other transportation equipment companies. In 1999, KLD added the Climate Change Concern.

Other Concern (ENV-con-X). The company has been involved in an environmental controversy that is not covered by other KLD ratings.

HUMAN RIGHTS (HUM-)

In 2002 KLD reorganized the presentation of data in the Non-U.S. Operations and Community category. Ratings in the Human Rights area were mostly taken from the former Non-U.S. Operations category.

STRENGTHS

Positive Record in South Africa (HUM-str-A). The company's social record in South Africa is noteworthy. KLD assigned strengths in this category in 1994 and 1995.

Indigenous Peoples Relations Strength (HUM-str-D). The company has established relations with indigenous peoples near its proposed or current operations (either in or outside the U.S.) that respect the sovereignty, land, culture, human rights, and intellectual property of indigenous peoples. In 2000, KLD added the Indigenous Peoples Relations Strength. In 2004, KLD moved the Indigenous Peoples Relations Strength from Community to Human Rights.

Labor Rights Strength (HUM-str-G). The company has outstanding transparency on overseas sourcing disclosure and monitoring, or has particularly good union relations outside the U.S., or has undertaken labor rights-related initiatives that KLD considers outstanding or innovative. In 2002, the Labor Rights Strength was added.

Other Strength (HUM-str-X). The company has undertaken exceptional human rights initiatives, including outstanding transparency or disclosure on human rights issues, or has otherwise shown industry leadership on human rights issues not covered by other KLD human rights ratings.

CONCERNS

South Africa (HUM-con-A). The company faced controversies over its operations in South Africa. KLD assigned concerns for this issue from 1991 to 1994.

Northern Ireland (HUM-con-B). The company has operations in Northern Ireland. KLD assigned concerns for this issue from 1991 to 1994.

Burma Concern (HUM-con-C). The company has operations or direct investment in, or sourcing from, Burma. KLD started assigning concerns for this issue in 1995.

Mexico (HUM-con-D). The company's operations in Mexico have had major recent controversies, especially those related to the treatment of employees or degradation of the environment. KLD assigned concerns for this issue from 1995 to 2002.

Labor Rights Concern (HUM-con-F). The company's operations have had major recent controversies primarily related to labor standards in its supply chain. KLD started assigning concerns for this issue in 1998, and subsequently renamed it from International Labor Concern. KLD subsequently created the Labor Rights Concern using data from the International Labor Concern. KLD started assigning concerns for this issue in 1998.

Indigenous Peoples Relations Concern (HUM-con-G). The company has been involved in serious controversies with indigenous peoples (either in or outside the U.S.) that indicate the company has not respected the sovereignty, land, culture, human rights, and intellectual property of indigenous peoples. KLD started assigning concerns for this issue in 2000.

Other Concern (HUM-con-X). The company's operations have been the subject of major recent human rights controversies not covered by other KLD ratings.

PRODUCT (PRO-)

STRENGTHS

Quality (PRO-str-A). The company has a long-term, well-developed, company-wide quality program, or it has a quality program recognized as exceptional in U.S. industry.

R&D/Innovation (PRO-str-B). The company is a leader in its industry for research and development (R&D), particularly by bringing notably innovative products to market.

Benefits to Economically Disadvantaged (PRO-str-C). The company has as part of its basic mission the provision of products or services for the economically disadvantaged.

Other Strength (PRO-str-X). The company's products have notable social benefits that are highly unusual or unique for its industry.

CONCERNS

Product Safety (PRO-con-A). The company has recently paid substantial fines or civil penalties, or is involved in major recent controversies or regulatory actions, relating to the safety of its products and services.

Marketing/Contracting Concern (PRO-con-D). The company has recently been involved in major marketing or contracting controversies, or has paid substantial fines or civil penalties relating to

advertising practices, consumer fraud, or government contracting. (Formerly: Marketing/Contracting Controversy)

Antitrust (PRO-con-E). The company has recently paid substantial fines or civil penalties for antitrust violations such as price fixing, collusion, or predatory pricing, or is involved in recent major controversies or regulatory actions relating to antitrust allegations.

Other Concern (PRO-con-X). The company has major controversies with its franchises, is an electric utility with nuclear safety problems, defective product issues, or is involved in other product-related controversies not covered by other KLD ratings.

CONTROVERSIAL BUSINESS ISSUES

KLD's Controversial Business Issues ratings differ from the qualitative ratings described in the above issues: the only type of rating for these issues is a concern rating as they are primarily used as exclusionary lists.

After 2002, KLD listed companies for only one type of involvement in any business issue. Because of this, all types are coded as AREA-con-A. A few legacy concerns remain and are described below, but are all noted as "not rated" in the spreadsheets post-2002.

ALCOHOL (ALC-con-A)

Licensing. The company licenses its company or brand name to alcohol products.

Manufacturers. Companies that are involved in the manufacture alcoholic beverages including beer, distilled spirits, or wine.

Manufacturers of Products Necessary for Production of Alcoholic Beverages. Companies that derive 15% or more of total revenues from the supply of raw materials and other products necessary for the production of alcoholic beverages.

Retailers. Companies that derive 15% or more of total revenues from the distribution (wholesale or retail) of alcoholic beverages.

Ownership by an Alcohol Company. The company is more than 50% owned by a company with alcohol involvement.

Ownership of an Alcohol Company. The company owns more than 20% of another company with alcohol involvement. (When a company owns more than 50% of company with alcohol involvement, KLD treats the alcohol company as a consolidated subsidiary.)

Alcohol Other Concern (ALC-con-X). The company derives substantial revenues from the activities closely associated with the production of alcoholic beverages. KLD assigned concerns in this category through 2002.

GAMBLING (GAM-con-A)

Licensing. The company licenses its company or brand name to gambling products.

Manufacturers. Companies that produce goods used exclusively for gambling, such as slot machines, roulette wheels, or lottery terminals.

Owners and Operators. Companies that own and/or operate casinos, racetracks, bingo parlors, or other betting establishments, including casinos; horse, dog, or other race tracks that permit wagering; lottery operations; on-line gambling; pari-mutuel wagering facilities; bingo; Jai-alai; and other sporting events that permit wagering.

Supporting Products or Services. Companies that provide services in casinos that are fundamental to gambling operations, such as credit lines, consulting services, or gambling technology and technology support.

Ownership by a Gambling Company. The company is more than 50% owned by a company with gambling involvement.

Ownership of a Gambling Company. The company owns more than 20% of another company with gambling involvement. (When a company owns more than 50% of company with gambling involvement, KLD treats the gambling company as a consolidated subsidiary.)

Gambling Other Concern (GAM-con-X). The company derives substantial revenues from the activities closely associated with the production of goods and services closely related to the gambling industry or lottery industries. KLD assigned concerns in this category through 2002.

TOBACCO (TOB-con-A)

Licensing. The company licenses its company name or brand name to tobacco products.

Manufacturers. The company produces tobacco products, including cigarettes, cigars, pipe tobacco, and smokeless tobacco products.

Manufacturers of Products Necessary for Production of Tobacco Products. The company derives 15% or more of total revenues from the production and supply of raw materials and other products necessary for the production of tobacco products.

Retailers. The company derives 15% or more of total revenues from the distribution (wholesale or retail) of tobacco products.

Ownership by a Tobacco Company. The company is more than 50% owned by a company with tobacco involvement.

Ownership of a Tobacco Company. The company owns more than 20% of another company with tobacco involvement. (When a company owns more than 50% of company with tobacco involvement, KLD treats the tobacco company as a consolidated subsidiary.)

Tobacco Other Concern (TOB-con-X). The company derives substantial revenues from the production of tobacco products. KLD assigned concerns in this category through 2002.

FIREARMS (FIR-con-A)

Manufacturers. The company is engaged in the production of small arms ammunition or firearms, including, pistols, revolvers, rifles, shotguns, or sub-machine guns. KLD added this coverage in 1999.

Retailers. The company derives 15% or more of total revenues from the distribution (wholesale or retail) of firearms and small arms ammunition. KLD added this coverage in 1999.

Ownership by a Firearms Company. The company is more than 50% owned by a company with firearms involvement. KLD added this coverage in 1999.

Ownership of a Firearms Company. The company owns more than 20% of another company with firearms involvement. (When a company owns more than 50% of company with firearms involvement, KLD treats the firearms company as a consolidated subsidiary.) KLD added this coverage in 1999.

MILITARY (MIL-con-A)

Manufacturers of Weapons or Weapons Systems. Companies that derive more than 2% of revenues from the sale of conventional weapons or weapons systems, or earned \$50 million or more from the sale of conventional weapons or weapons systems, or earned \$10 million or more from the sale of nuclear weapons or weapons systems.

Manufacturers of Components for Weapons or Weapons Systems. Companies that derive more than 2% of revenues from the sale of customized components for conventional weapons or weapons systems, or earned \$50 million or more from the sale of customized components for conventional weapons or weapons systems, or earned \$10 million or more from the sale of customized components for nuclear weapons or weapons systems.

Ownership by a Military Company. The company is more than 50% owned by a company with military involvement.

Ownership of a Military Company. The company owns more than 20% of another company with military involvement. (When a company owns more than 50% of company with military involvement, KLD treats the military company as a consolidated subsidiary.)

Minor Weapons Contracting Involvement (MIL-con-B). The company has minor involvement in weapons-related contracting. In the most recent fiscal year for which information is available, it derived \$10 to \$50 million in conventional weapons-related prime contracts (when that figure is less than 2% of revenue), or \$1 to \$10 million from nuclear weapons-related prime contracts. KLD assigned concerns in this category from 1991 through 2002.

Major Weapons-related Supplier (MIL-con-C). During the last fiscal year, the company received from the Department of Defense more than \$50 million for fuel or other supplies related to weapons. KLD assigned concerns in this category from 1991 through 2002.

Military Other Concern (MIL-con-X). The company has substantial involvement in weapons-related contracting. In the most recent fiscal year for which information is available, it derived more than 2% of sales or \$50 million from weapons-related contracting, or it received more than \$10 million in nuclear weapons-related prime contracts. KLD assigned concerns in this category through 2002.

NUCLEAR POWER (NUC-con-A)

The rating does not include companies that store, dispose, or reprocess nuclear fuel waste nor does it include manufacturers of general power plant parts unless the part is specifically and uniquely made for the production of nuclear power.

Construction & Design of Nuclear Power Plants. The company designs, engineers, and constructs nuclear power plants and nuclear reactors for use in nuclear power plants; including companies that design nuclear reactors and engineer and/or construct nuclear power plants.

Nuclear Power Fuel and Key Parts. The company supplies nuclear fuel material and key parts used in nuclear plants and reactors. Fuel includes mining of uranium and conversion, enrichment, and fabrication of uranium. Key parts include manufacture or sale of specialized parts for use in nuclear power plants including but not exclusive to steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation & controls.

Nuclear Power Service Provider. The company is involved in the transport of nuclear power materials and nuclear plant maintenance.

Ownership of Nuclear Power Plants. The company has an ownership interest or operates nuclear power plant(s). Does not include publicly traded companies that are an owner or operator of a nuclear plant that has shut down and is being decommissioned.

Ownership by a Nuclear Power Company. The company is more than 50% owned by a company with nuclear power involvement.

Ownership of a Nuclear Power Company. The company owns more than 20% of another company with nuclear power involvement. If company ownership of company with nuclear power involvement is greater than 50%, KLD treats subsidiary as a consolidated subsidiary.

Design (NUC-con-C). The company derives identifiable revenues from the design of nuclear power plants. This category does not include companies providing construction or maintenance services for nuclear power plants. KLD assigned concerns in this category through 2002; the rating was re-instated as *Construction & Design of Nuclear Power Plants* under the code NUC-con-A in 2005.

Fuel Cycle/Key Parts (NUC-con-D). The company mines, processes, or enriches uranium, or is otherwise involved in the nuclear fuel cycle. Or, the company derives substantial revenues from the sale of key parts or equipment for generating power through using nuclear fuels. KLD assigned concerns in this category through 2002. KLD assigned concerns in this category through 2002; the rating was re-instated as *Nuclear Power Fuel and Key Parts* under the code NUC-con-A in 2005.

Nuclear Power Other Concern (NUC-con-X). The company is involved in the production of Nuclear Power. KLD assigned concerns in this category through 2002.

Abstract (Deutsch)

In dieser Arbeit untersuche ich die Auswirkungen von sozialem Verhalten von Unternehmen auf Aktienkurse. Der erste Teil der Diplomarbeit enthält eine Literaturzusammenfassung zu diesem Thema. Im zweiten Teil der Arbeit untersuche ich Aktienrenditen sozial agierender Unternehmen und vergleiche sie mit Renditen weniger sozialer Firmen. Dazu verwende ich Daten der Analystenfirma KLD um durch ein soziales Screening des S&P 500 Aktienindex ein CSR-Portfolio zu bilden. Über den Zeitraum von 2002 bis 2006 teile ich die Unternehmen des Index in Decile und vergleiche zunächst ihre durchschnittliche Rendite. Dabei ist weder ein negativer, noch ein positiver Zusammenhang zwischen sozialer und finanzieller Performance festzustellen. Darüberhinaus teste ich in mehreren Regressionsanalysen, ob CSR ein Rendite-erklärender Faktor sein könnte. Diese These kann ich jedoch nicht statistisch signifikant nachweisen. Ich argumentiere jedoch, dass Corporate Social Responsibility auf längere Sicht eine Strategie darstellt, die sich positiv auf den finanziellen Erfolg eines Unternehmens auswirkt und damit auch dessen Aktienkurse beeinflusst.

CURRICULUM VITAE

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Date of Birth: August 16th, 1985
Citizenship: Austrian

Education

08/06 – 02/07	Joint-Studies at the Singapore Management University
09/04 – 11/08	Studies of International Business Administration (Mag. rer. soc. oec.) at the University of Vienna ; for the year 2005/2006 special honours from the University of Vienna (dean's list, 2 nd place) – specialisation in Finance (Asset Management)
09/04 – 07/06	Studies of Mathematics (1 st fragment) at the University of Vienna
09/03 – 09/04	Studies of International Business Administration and Studies of Mathematics at the Karl-Franzens University in Graz
09/00 – 07/03	Lycée Danube in Linz; Austrian Matura with merits
07/96 – 07/00	"Colegio Humboldt" in Caracas/Venezuela

Extra-Curricular Activities

Since 11/07	Founding member and President of Talents Austria - Association for the promotion of talented students, Vienna (www.talenteoesterreich.at)
Since 10/07	Coach, Business@School , Project of <i>The Boston Consulting Group</i> , (www.business-at-school.de)
09/07 – 07/08	Member of Talent Circle 07/08 (High-Potential Curriculum, University of Vienna, www.talentcircle.eu)
01/06 – 11/07	Marketing for student-newspaper "Hörsaal 10" (volunteer), Vienna
10/05 – 06/07	Buddy for incoming exchange students (University of Vienna)
03/02 – 07/03	Member of The European Youth Parliament (EYP) International Sessions in Raach (Austria), Augsburg (Germany) and Oxford (UK)

Work Experience

- since 11/08 **Associate** at *The Boston Consulting Group*, Dubai, United Arab Emirates (www.bcg.com)
- 06/08 – 07/08 **Intern Macro Research** at *Deutsche Bank*, Corporate and Investment Bank, Frankfurt am Main (www.db.com)
- 07/07 – 09/07 **Visiting Associate** at *The Boston Consulting Group*, Vienna (Project in Telecom Practice Area, Romania). Offer for Associate position.
- Support of the Project Management Office (PMO)
 - Implementation of project-controlling tool
 - Preparation of analyses, recommendations and presentations of intermediate and final project results for a wider procurement initiative
 - Conduct of client interviews
- 09/06 – 06/08 **Portfolio Manager** in the *Portfolio-Management-Programme* of the Institute of Capital Markets Research (cooperation University of Vienna and ZZ Vermögensverwaltungs GmbH), Vienna
- 2 year curriculum educating students to become professional Asset Managers
 - Management of a real portfolio (EUR 0,33 Mio. per group of 4 students)
 - Personal Mentor: Dipl. Ing. Dr. Peter Pühringer (CIO, ZZ Funds)
- 08/05 – 09/05 **Internship** at *OMV Solutions GmbH*, Vienna
- Construction and implementation of a hotel database for travel department
 - Market analysis for various new flight destinations
- 07/05 – 08/05 **Active promotions agent** for the German "*Bund Naturschutz in Bayern*
- and 08/04 – 09/04 *e.V.*" (an NGO) as **team-leader** (teams of 8-12 people), Germany
- 07/03 – 08/03 Active promotions agent for the German "*Bund Naturschutz in Bayern e.V.*"
- 07/02 – 08/02 Internship at *Voest Alpine Intertrading*, IT department, Linz
- Help-desk support for company staff
 - Assistance IT Services
- 07/01 – 08/01 Internship at the *Sparkasse Bank*, Assistant position, credit department, Linz

Skills

Languages:

German, English, Spanish (all fluent), French (good spoken and written)

IT Skills:

Microsoft Office, Matlab, EViews, HTML, JavaScript, Bloomberg, Reuters, Datastream

Interests and Hobbies

Sports: Tennis, Skiing, Golf, Dancing

Interests: piano concertos, travelling, investments, reading