SRI

Ethically Investing during the financial crisis

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- Abstract –

This paper tries to give a better insight in the performance of SRI funds during the crisis compared to conventional mutual funds. I found that conventional mutual funds do not outperform SRI funds. Region and size of the funds are not significant factors that affect the beta or the financial performance.

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1. Introduction

A lot has changed in the last recent years. People are more conscious about our world and our environment. People realize that something has to change if we want to give our children and grandchildren a future. Even (or especially) in the world of finance, ethics have become more important. Since the eighty's and particularly the early 90's, ethics grew very fast in the world of finance. Schwarz (2003) gives several reasons for this growth in social or ethical investing, for instance growing investor concerns about the environment, growing interest in business ethics and CSR, growing advertisement of ethical mutual funds and greater media exposure. But if individuals always prefer more wealth than less (Dobson, 1997), people only should invest in ethical funds if they outperform conventional funds. Even Markowitz suggested in 1952 that ethical investing will underperform in the long run, because of diversification problems; there are constraints to construct a portfolio (Bauer et al., 2006). So the question should be why investors invest in these funds, and why it is a growing market.

Also the financial crisis of 2008 influenced the way companies coop with business ethics. Lewis et al (2010) suggest that the cause of the crisis was partly due to the lack of business ethics. Some papers find results were ethical funds underperform normal funds, others find insignificant results. Due to the crisis, ethics are becoming more important as part of the firm. This paper is relevant because there are not many papers about this subject that contains the changes after the crisis.

This paper will examine if it is worth to invest in ethical funds or not. In other words, do they outperform conventional funds? There is some evidence that shows that they outperform, but there is also contradictory evidence. This paper tries to give a better insight. Besides that, the paper examines if the degree of ethics in a company is important to survive a crisis like the turmoil of 2008. There is some evidence that ethics as part of the strategy of the firm is becoming more important. The question is why companies do this. It could be because including ethics in your strategy could strengthen your company. This paper will investigate if ethical mutual funds are performing better than conventional funds before, during and after the 2007/2008 financial crisis.

There are different opinions about the outperformance of conventional funds compared to ethical funds. Many argue that conventional funds should outperform because of lack of diversification for the ethical funds. It also takes more time to screen the companies which to include in your portfolio.

This time cost money and therefore affects the financial performance negatively. Others suggest that SRI funds could outperform conventional funds, because often they have to be led by better management, they are more efficient and they can deal better with environmental issues, like a natural disaster. Also in times of crisis they should be more able to absorb shocks.

Results is in this paper shows that conventional funds do not outperform ethical funds. This holds for the period before, during and after the crisis. Also size and region does not matter. Significantly different are the CAPM betas of the SRI funds. These betas are significantly lower during the crisis than before the crisis and they are also lower than the betas of conventional mutual funds. After the crisis, the difference between the betas are again not significant different from zero. This indicates a strategy that is less market sensitive than the strategy of conventional funds.

This paper is organized as follows. Section 2 describes the literature review. It will contain the definition of ethics, who will invest in it and past results of other research. Section 3 describes the methodology and which data is used. Section 4 will explain the results of this research. Conclusions are drawn in section 5, where section 6 gives some limitations en recommendations of this research.

2. Literature Review

Definition and history of ethics in the field of finance

The field of ethics in finance has grown tremendously. From 1995 to 2000, the US market for ethical mutual funds rose from $12 billion to 153 billion dollar, while the European market was still in a stage of developing (Bauer 2005). But unless the significance of social responsible investing and ethics, there still is not a clear definition. For example, many concepts are used for social responsibility, such as ethical investing, green investing and corporate social responsibility. There are also different definitions of ethical investing; one of them is given by Cowton (1999): ‘a set of approaches which include social or ethical goals or constraints as well as more conventional financial criteria in decisions over whether to acquire, hold or dispose of a particular investment’. Below, in table 2.1, several more definitions are given. Through time, the definition of social responsible investment became more generalized.

Table 2.1 Definitions of Social Responsible Investing (SRI)

Mackenzie and Lewis (1999)	*all kinds of investments that mix ethical with ordinary financial motivations or objectives*
Cowton (1999)	*a set of approaches which include social or ethical goals or constraints as well as more conventional financial criteria in decisions over whether to acquire, hold or dispose of a particular investment*
Budde (2008)	*those investments strategies that consistently and explicitly considers social factors as part of the investment process*
Renneboog (2008)	*an investment process that integrates social, environmental, and ethical considerations into investment decision making*
World Economic Forum (Kinder, 2005)	*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*

Similar in all definitions is that the consideration in the decision making process includes social, environmental and ethical factors next to the financial motivations. But it is still not a generalized rule. In every culture this definitions could be interpreted differently.

So, as stated before, this market had grown massively. In the early 2000's, already over 13 % of all money under professional management in the US was invested socially (McVeigh, 2000). But also in Europe and Great-Britain there is a large demand for social responsible investments (Schwartz, 2003).

There is a large history of ethical investing. It started in the fifties of the last century in the US (Carroll, 1999). Before the war, there was little dominance of presence of large influencing companies or it was not noticed yet. An example of this is a quote of the CEO of General Motors, Charles E. Wilson (1952): 'What is good for General Motors is good for America.' So, if GM is profitable, GM will create jobs which are good for the society, which leads ultimately to a higher welfare in general. But Bowen already wrote in his book, in 1953, that the biggest hundred companies did have influence on the American society. He asked himself the question which responsibilities businessmen had towards society. During the 1960's, the idea of investing in corporate social responsibility grew further. More people, managers and investors started to realize that investing in CSR could pay off in the long run. The more social power you have, the more social responsibilities: the Iron Law of Responsibility (Davis, 1960). Or in other words, if you do not take your responsibility like society wants you to do; you will lose your power. In this decade, the first models were developed, with the central question how CSR could influence the way manager's act and what consequences it has on society.

In the 1970's, the first models about how to include corporate social responsibility in firm's policy were developed. In this decade, there were not only concerns for the stockholder anymore, but also the stakeholder became more important. 'A responsible firm should also take into account the interests of employees, suppliers, dealers, local community and the nation' (Johnson, 1971). The goal of the firm was long-term profit maximization, with social programs included in the firm's policy. Already two third of the managers believed that their firm had a social obligation. Hiring minorities and reduce pollution became an everyday practice. But there was still distinction between the economic and social activities; it was not fully integrated yet. In the 80's CSR was included in policies and integrated in firm's processes. From now in, CSR grew exponentially.

There a lot of developments since the 1980's that have contributed to the growth of socially investing. Schwartz (2003) summarized these factors:

- growing investor concerns over issues such as the environment, labor, repressive regimes, product safety, and tobacco;
- growth of the business ethics and corporate social responsibility movement (e.g., corporate, academia, media, special interest groups, consulting activities, etc.);
- growing evidence that ethical funds produce attractive returns (or at least generate similar returns);
- growth of advertising of ethical mutual funds;
- greater media exposure;
- growth of sustainability indices that only include socially responsible companies; and
- growth of national social investment organizations and their related activities.

Other researchers (i.e. Schueth, 2003) suggest there are three main reasons for the growth of social responsibility. First, they suggest that the most important factor is the growth in education of the investor and the growing available information. Research shows that well-informed investors tend to be more responsible for what they do. The second reason of the rise of CSR is women. It is proven that nowadays around 60% of the social investors are women. Apparently, women have more interest in social responsibility than men. With the rising board positions of women, also CSR within the companies rose massively. Third, investors do not longer have to pay for ethical investments. Most research found that conventional funds do not outperform ethical ones. This will be discussed later in this chapter. Investors now realize that they are responsible for their own actions.

Notwithstanding this growth, there is also a lot of critic. Sparkes (2001) refers to several papers and comes up with more criticism. He questions whether social responsible investing and ethical investing have the same definition. Financial return is important, but so is it source. First critics came from Cowton (1994). Ethical investment products are nothing more than expansion of choice and just a form of product innovation. Anderson et al. (1996) goes even further. It is only labeled ethical to meet the customers. This implies that other investments are unethical. In general, SRI set out several activities of (historical) concerns like, alcohol, tobacco, gambling and pornography. Firms should not invest more than 5% in unacceptable investments (Sparkes, 2001). Ethical investment contains principles of altruism, self-sacrifice, of a normative and systematic code of conduct. Ethics means helping someone or somewhat else, even if it is harmful to yourself. The only problem Sparkes also admits, there is not a generally accepted code of ethics. Second, there is a lack of altruism. Companies are not doing it because they really want to do something good for the world, but because the world forces them. There are two main reasons why there are conflicts between society and companies. First, there could be differences between private and social costs and benefits. Second, different perceptions about fairness could occur (Heal, 2005).

Hellsten and Mallin (2006) also questioned if ethical investments are really social responsible. They concluded with four questions in their paper:

1) With the free market, there is an acceptance between rich and poor. For business it is survival of the fittest. Are ethical investments just a new marketing technique for this survival of the fittest in the more demanding markets? Is there a minimal degree of social responsible investment, society desires from companies?
2) Second, is ethical investing serious commitment of the business and finance world or is it just market rhetoric? Especially this is questionable if companies use their social corporate responsibility in their marketing campaign to attract investors.
3) It is hard to determine what is good and what is bad for the society, everyone has another opinion, due to individual value systems en different ideas. But also between countries there can be a large difference whether it is ethical or not. Therefore, it is hard to tell for a multinational if they invest ethically, because it depends on the country.
4) Fourth, can ethical investing make sure that everybody wins? How many sacrifices occur to get to an ethically acceptable world? Are their financial or personnel loses because of the increase of ethical investments? What is the price to maximize profits for shareholders? And what is the difference between a charity and a non-risk ethical investment?

Nowadays CSR or ethics is executed by almost every western stock-listed firm. The public forces them to include corporate social responsibility as part of the firm's policy. It is unthinkable that the company only take into account the interest of the shareholder. The stakeholder and the environment are essential for the continuity of the company. Ter Horst, Zhang, and Renneboog (2007) suggest, making corporate social responsibility workable, the corporate performance must be measurable.

Second, maximizing long-run firm value is in line with maximizing social welfare. It is important to take all stakeholders' welfare in consideration. Ignoring important stakeholders will not lead to maximization of the value of the firm. Last, when the management is protected from, for instance, takeovers, companies will be willing to sacrifice profits in return for higher corporate social responsibility. For example, a manager who invests based on positive screens will not invest in polluting companies. Due to this fact, the share price of these firms will drop, which causes a raise in their cost of capital. If this raise exceeds the raise in the cost of capital due to an increase in social responsible investing, the firm will be more ethical in the field of the environment. Negative screening will reduce the motivation to invest in social responsibility. Positive screens indicate strengths and negative screens indicate weaknesses of the firm. Screening will be explained further on in the paper.

As mentioned before, ethics are hard to measure, but measuring is essential to construct a good policy and to determine if a company can be rated as ethical. There are four important ways of measurements (Turker, 2009). The first category is reputation indices and databases. These are the most widely used methods. Examples are the Kinder, Lyndenberg, and Domini (KLD) Database and the Fortune Index. A second option is using single or multiple indicators to measure CSR. An example is to measure each company on the base of their pollution. This is done by the Council of Economic Priorities. A third method is content analysis and a last way to measure CSR is the use of individual perceptions.

Chatterji et al (2009) found that for example the KLD rating is a good indicator for future pollution. Firms that score low on the KLD rating are likely to have slightly more pollution than companies which scored well in the past. Though, there is no significant result on how firms will act in the future if they did well in the past.

Another question concerning ethics is how it influences corporate strategy. The more SRI grows in general the more power it has. It depends on how sensitive a firm is for a changing world. A more sensitive company would change their strategy more quickly, to respond to the investors (Michelson, 2004).

To summarize, corporate social responsibility has grown a lot the last decades. It is hard to find one definition for this phenomenon. The definition given by Compton clarifies it well: 'a set of approaches which include social or ethical goals or constraints as well as more conventional financial criteria in decisions over whether to acquire, hold or dispose of a particular investment'. It should include a form of altruism; unselfish concern for the welfare of others. Interest in social responsible investing has grown in funds and companies by investors. The next part of this chapter will explain the process of how to construct a portfolio based on ethical investing and who will invest in social or ethical mutual funds and why investors do this.

Process of ethical investment

Over time, mechanisms to inform investors about ethical investments have gone through an evolution. This also holds for the simplest way to select companies into an investor's portfolio: screening. Screening is the practice of including or excluding particular companies into an investor's portfolio based on several social, ethical and environmental criteria (Michelson et al, 2004). There are basically two different screens: positive and negative screens. Negative screens are companies that are excluded in the investor's portfolio, due to the fact that they are not ethical. For example companies that harm the environment. The opposite are positive screens: companies that are included because these firms are performing well on corporate social responsibility, for example because these firm aid human health. Although the explanation of screening is very clear, it is still a subjective choice. It depends on the investor or manager which companies to include and which companies to exclude. Companies could be ranked against all companies or just within the industry. In this case, not an entire industry is excluded from the portfolio, the investor will chose the 'best-in-class'. So, for some is the behavior of the firm more important than the products they sell. This requires an active role of the investor, but could lead to a higher average return than just selecting companies in 'honest' industries (Michelsonet al, 2004).

But to realize this, companies have to be transparent (Michelson et al, 2004). For the investor it is important to know how his money is invested by the company and if this is in line with his values. Investors have to find out if the company is in line with their values. The problem is that these companies are not providing this information to investors always, or the information is untrustworthy. Or sometimes, the goals of a manager and an investor are divers, which could lead to dissatisfaction for the investor, if it turns out that his money is not invested how he wanted to be. This could also be the result of cultural differences. In most countries, tobacco and gambling is seen as a negative screen, but in some countries it is not. This could result in a conflict between manager and investor. Schueth (2003) argues that the perfect company does not exist and screening is about selecting the best managed company. Ultimately it would lead to an exclusion of all companies, because companies are involved with many other companies over the entire world. To avoid this, many companies have a maximum threshold of investment in companies with negative screens (Michelson, 2004). This means that a certain percentage of, for example, sales may be invested in companies that investors could screen negatively.

Nowadays screening is still popular. The portfolio is often defined by investments the investor did not make. We learn to create a portfolio based on several models and difficult calculations and stay away from the simple calculations. But still these simple ways to create a portfolio remains common (amongst others Angel & Rivoli, 1997). This is due to the following reasons:

1) It is cheap compared to more complex models. In general, the more complex the model is, the more expensive it is to create a portfolio. This is cheap because the investor starts with a list of potential investments and with screening the investor includes or excludes companies to his portfolio.
2) It allows the investor to focus tightly on particular issues. For ethical investors, ethical and social issues are always important. But some issues are above all other issues. A good example is the boycott of South Africa. Research showed however that this boycott did not affect the return.
3) Screening is possible with clear and simple decision rules. For example an exclusion of companies that invest in gambling activities could easily be done and it is a clear and simple decision to make, while good management and a good policy on product safety for example are harder to investigate.

Renneboog (2011) defines three different strategies that can be used by investors that invest socially responsible. (1) Screening is a strategy where companies are excluded or included, based on corporate social responsibility criteria. (2) The second strategy is shareholder advocacy, also shareholder activism. Investors take an active role in the company; dialogue with the firms, and submitting and voting resolutions. (3) Community investing is the last strategy. It provides capital for low-income people. For example, a small part of the investment will be invested in social projects. So, the easiest way to select investments is screening.

Profile of an ethical investor

With the upcoming CSR in business, there arose a market for ethical investing. Differences existed between conventional firms and firms that invest in CSR and actively participate in social programs. Invest ethically is a way of life. Lewis and MacKenzie (2000) find that 42% of ethical investors believe that their investment will underperform 'normal' investments and 19% consider them risky. 40% thinks that they will get the same return and almost 13% thinks that they will outperform ordinary funds. So, investors do not maximize their financial profits, but they have also other goals to achieve. They believe that they will benefit in the long-run, by investing ethically in the present. Kinder (2005) defines three different groups of social responsible investors.

1) <u>Value-based SRI</u>
   These are the 'oldest' investors. They create a portfolio based on their beliefs. At the same time shareholder activism was created.
2) <u>Value-seeking SRI</u>
   This group of investors arose at the end of the '90. These investors believed that they could get financial benefits by investing socially, due to ethical factors that could influence the share price.
3) <u>Value-enhancing SRI</u>
   Investors in this group use shareholder activism to achieve their goals to maintain or increase their investment.

It is a moral and psychological issue for these investors. Also Perez (2012) finds similar results, but based on 145 investors from Australia. More than 50% have more than half invested in ethical funds. In general, social responsible investors are middle-aged, most of the time female and with tertiary qualifications. They are not in the top income segment according to Rosen et al. (2005). Others, like Nilsson (2008) find similar results, accept for income.

An interesting finding is the risk tolerance is not important for investors who invest solely in ethical funds. For those investors risk is not important; more important is how social responsible the investments are. Also this group cares less about negative returns (Renneboog et al., 2011) than investors of conventional funds. SRI flows are less sensitive to past returns, which indicate that these investors are taking non-financial attributes in consideration.

But not all ethical investors are the same. According to Woodward (2000), only 7% of those investors really want to improve society, while 29% just want to avoid harming it. The other respondents had combined these two goals in their objectives. 78 % wants to have capital growth by investing ethically, by setting up a long-term investment. The main reason for this is that these investors are investing to save for the future and their retirement. They think that they are less risky than conventional funds in the long-run.

Nowadays, more than 50% of an investor's portfolio is invested in social responsible products (Woodward, 2000), while Lewis and Mackenzie (2000) find 31%. But 80% have a mixed portfolio with conventional and social responsible funds and 20% invest in a portfolio consist out of 100% ethical funds. In the long run they believe that these funds will outperform conventional funds (20%), or at least perform equally as well (52%). In the long run the majority of the investors also think it is not more risky to invest ethically as invest in conventional funds. It must be noticed that most ethical fund investors are not well trained investors. They are influenced by the marketing efforts of those funds or the media attention particular funds get (Renneboog et al, 2011).

A portrait of an ethical investor could also be tested by an experiment. This is what Webley amongst others did in 2001. 56 Investors took part in the experiment. The group existed out of 28 ethical investors and 28 conventional investors. On average they invest 75.000 pounds. The experiment was split into two parts. In these separate parts they face different scenarios about ethical and conventional investments. There was a difference between the portfolios of the ethical investors and the conventional investors. The 'normal' investor invested more and invested in more risky assets than the ethical investor. They showed that ethical investors respond more strongly to improved performance of ethical funds than conventional investors. But also if an ethical fund underperformed their benchmark, ethical investors increased their stake in those particular funds in steads of decreasing it. Conventional investors also raise their stake into a particular trust if it performs well, but they decrease their stake if the trust performs poorly. A possible explanation for this phenomenon is given by De Bondt (1998). He argues that it could be profitable to buy value shares when they drop in price. Webley et al (2001) concluded from this experiment that it is not just financial motives why ethical investors invest in SRI. Also ideology and the identity of the investor are important factors when these investors construct their portfolio.

To summarize, there a two different group of social investors. The first group is investing according to their own personal values. They are satisfied with themselves by investing holding a socially responsible portfolio. These people have screening as their dominant strategy. The other group of investors really wants to change the quality of life. They seek for a way to improve the society as a whole. The last group has shareholder advocacy and community investing as most important strategies.

Are ethical mutual funds out- or underperforming conventional funds?

There are many kinds of investors with all different goals. For some investors, profit maximization is the most important, for others it is corporate social responsibility. Financial advisors have to take into account these goals while constructing a portfolio, even if this is not the optimal portfolio. There are two opposite theories about the return on social investments. First, conventional funds will outperform socially responsible funds, which will be discussed first. Second, conventional funds will not outperform funds which are focused on CSR. The first theory is stated in the 1950's and was developed by Markowitz (1952). According to Markowitz ethical investing must be underperform conventional funds over the long run because these portfolios are a subset of the market portfolio. With other words, there is a diversification problem. Because the diversification is not optimal, this portfolio will always underperform conventional funds. Heal (2005) questioned in his paper: 'If companies make products that consumers value and price them affordably, making money in the process, what is the need for corporate social responsibility (CSR)?' Bauer et al (2006) find other cost that could make it more expensive and less profitable, to invest in socially responsible investments. Screening the companies takes time; this investment in time is costly. Due to these costs, the return should be lower in comparison with investors who do not have these costs. So screening could have a negative impact on the overall return of the investment. Also Carhart (1997) found these conclusions. He found a negative correlation between the performance of a fund and fund expenses. But Kreander et al (2005) found that there is not any difference between conventional and SRI funds. They calculated the average return and betas of different funds. Their result was a weekly return of 0.13%, which was identical to the return of the conventional funds. But they found a slightly lower beta for the ethical funds, compared to the non-ethical ones. With a significance level of 5%, they concluded that social responsible funds were less risky than conventional funds. These results were also found by amongst others Mallin et al (1995). With a paired sample, they found that 10 ethical funds outperformed their non-ethical partner, while in 9 cases it was visa versa. The reason why these ethical funds underperformed could be due to diversification. Funds that were less internationally diversified performed worse than funds with an internationally diversified portfolio. Kreander et al (2005) found the four most important factors that influence the performance of ethical mutual funds: fund size, fund age, load charge of the fund and the management fee. Nevertheless, in their research not one of the factors was significant.

But also Renneboog et al (2008) found that SRI funds are underperforming its benchmark. This study contained the US, UK and many continental Europe and Asia-Pacific countries. The funds underperformed by 2.2% to 6.5%. However, these risk-adjusted returns are not significantly different form conventional funds. In this paper two arguments are proposed to explain the underperformance.

First, due to the fact that some financial opportunities are rejected because there are 'not socially responsible', the overall return of the portfolio is lower than the return on a conventional portfolio. So, companies with a positive expected return are excluded from the portfolio. Second, because of the earlier mentioned screening, more companies will be excluded from you portfolio, which lead to a suboptimal portfolio. Bauer and Koedijk (2005) also found a slightly difference in return between conventional and ethical funds, due to screening. Next to this, the riskiness of the two different portfolios may not be fully captured by the used benchmarks (Renneboog et al, 2008). There is not an ethical factor when using the capital asset pricing model (CAPM) or the four factors of Fama-French when calculating the expected return. For this reason, the alpha could be different; it may reflect the expected return associated with the 'ethical' factor. Another reason could be that the stocks of companies that have a high investment in social corporate responsibility are overpriced because of high standards. A second explanation for the overpricing is a high demand for these stocks. Investors could have an aversion to companies that do not invest enough in social corporate responsibility, what drives the price up. A more simplistic reason is given by Michelson (2004); due to higher transaction cost, ethical mutual funds underperform conventional funds, because they are smaller and more specialized.

The second theory argues that ethical investments should at least not underperform conventional ones. If these ethical funds underperform conventional funds, then why should an investor invest in these stocks? One would expect that the large investors of social funds would walk away, because they have the highest stakes in those companies, and they have the highest risk and the highest potential profit loss. Lewis and Mackenzie (2000) investigated this, and found that there was not enough evidence to prove this. They explain this phenomenon with moral commitment. This could also be because ethical funds and stocks do not underperform conventional portfolios. Bauer (2006) investigated this for the Australian market. He found no evidence for the period 1992-2003 that ethical funds underperformed conventional ones. Only domestic ethical funds in the period 1992-1996 underperformed there benchmark, but this could be due to diversification problems, because it was a growing and new market at the beginning of the 1990's. After this period, also the domestic funds were catching up. In 2005, Bauer did as well a study in the field of corporate responsibility. With a database containing the US, UK and Germany, they found no significant difference between the return of a conventional portfolio and an ethical fund, also after controlling for size, book-to-market and momentum. There are several reasons why this hypothesis should hold.

But there are also investors who believe ethical funds can outperform conventional ones. Renneboog (2008) gives two explanations in his paper why an ethical fund could even outperform. It requires high managerial quality for a company to be socially corporate responsible. The high quality management could lead to a better financial performance. Second, during a disaster a company faces very high costs. Screening could reduce these costs. If the market undervalues these costs, ethical funds may outperform their benchmark. It is important to notice that the stocks are mispriced due to incomplete information, which could lead to outperformance in the long run. Klassen and McLaughlin (1996) find positive abnormal returns after a company wins an award for environmental performance and negative returns during an environmental crisis. Konar and Cohen (2001) found a negative correlation between poor environmental performance and the value of intangible assets. Next, it could be because the asset pricing models like the CAPM and Fama-French four factor model do not capture a premium for ethics. Because of these missing risk factors the abnormal expected return could be different than reality. In the paper of Renneboog et al (2007) stated that in general good corporate governance, sufficient environmental standards and a good management which take the interest of all stakeholders into account can create value for the firm and shareholder. Kempf and Osthoff (2007) wanted to investigate what happens if they implement social responsible screens into their investment. They based their strategy on the ratings of the KLD database. They bought stocks with high socially responsible ratings and sell the ones with a low rating. There result was an 8.7% positive abnormal return per year. The highest return is acquired by employing the best-in class screening method; using a combination of different socially responsible screens and restricts themselves to stocks with extreme high ratings. Even when including transaction costs, they still get a positive abnormal return.

There a more reasons for this phenomenon which are often discussed in papers (Heal, 2005): reducing risk, reducing waste, improving relations with regulators, generating brand equity, improved human relations and employee productivity. Non-governmental organizations (NGO) can be very aggressive. Including CSR in the company's strategy reduces the chance on conflicts between NGO's and companies. The chance, that the share price will fall declines. Reducing waste can lead to significant (non-cash) savings. A nice example is BP; in 1997 they started a corporate social responsibility program to reduce the greenhouse gas emission. It cost BP almost nothing, but the benefit due to this program was an increase of $600 million. In this case, the social benefits are higher than the private costs (Heal, 2005). Third, a good relation with the regulators could also lead to financial benefits. For example an oil company who will get the preference over another company, due to its good reputation. Also with a good image, a company can attract customers. Therefore, especially in a fast chancing market, that a company generates brand equity. Fifth, CSR can increase the productivity of the employees. If the employee is proud of the company he works for, his productivity will increase. Another aspect is that employees work harder when there salary is higher. Due to CSR, a company could have several financial benefits as mentioned and therefore could increase their salary budget.

Maybe the simplest reason is argued by Geunster et al (2011). It is similar to the arguments of amongst others Heal (2005). Companies that are aware of social corporate responsibility pay attention to their inputs and waste of their operations, which leads to more efficiency. One of the leading companies in corporate social responsibility is Wal-Mart. This company tested several corporate social responsibility projects (Humes, 2011). He found that due to their sustainability programs, Wal-Mart increased their financial result. For instance, Wal-Mart reduced the size of their packages, which resulted in a saving of $2.4 million per year.

More reasons are given by Michelson (2004). It could be that the outperformance of ethical funds could occur due to the adoption of social screening practices. Ethical firms give a positive signal to investors, because these firms focus on sustainability and good management. The strategy is based on a long term plan. It is proven that older ethical mutual funds outperform younger funds. So, on the long term, government policies and customer trends could lead to relative more social responsible firms.

The performance of funds could also depend on the corporate global environmental standards of a specific company (Dowel et al, 2000). With Tobin's Q they investigate if higher environmental standards cause increases in market value. They find a positive relation between the market value of a company and the environmental standards. When a firm adopts higher environmental standards, the market value will rise quickly. Higher quality firms pollute less than lower quality firms. However, it cannot predict the future if environmental standards will go up.

Not only the companies that perform well on corporate social responsibility benefits, also companies that lack CSR faces disadvantages (Derwall, 2005). Like other researchers, they also found a higher return (more than 6%) for the best-in-class companies compared to the worst-in-class companies based on corporate social responsibility. Next to that, Chava (2011) concluded that the profile of the firm has also a relation with the cost of capital. Not only the investors but also lenders take into account the policy of the firm concerning environmental issues, which lead to a higher cost of equity and a higher cost of debt, and therefore a higher cost of capital. Most important issue seems to be the greenhouse effect. Companies dealing with this climate problem and do not take action about it have a relatively higher cost of equity and debt than companies with other environmental issues. Lenders charge lower interest rates on loans for companies that produce products that are beneficial for the environment. This positive relation between stock returns and environmental concerns are partly driven by social responsible investors and environmentally sensitive lenders.

But also the opposite occurs. A nice example is Monsanto, located in the United States. Monsanto was a company which produces crops. With their new invention, modified crops, the vegetable became more productive and there was less insecticide needed to produce them. Nevertheless, they went bankrupt, because customers did not want modified food. So it does not always hold that CSR leads to financial benefits. A firm has to take into account the wishes of all their stakeholders. Also, companies have to be careful if they do not overinvest in corporate social responsibility. It could be financial beneficial for companies, but to what end? If you invest too much, the benefits for the shareholders will be diminished (Kim & Statman, 2012). They found that nowadays this is not yet the case. Their research resulted in a conclusion of positive financial benefits due to corporate social responsibility programs. Managers still act in the favor of the shareholders. Both companies that increased and reduced CSR in their companies performed better than companies that did not change their corporate social responsibility.

To summarize, there are different theories about the under- or outperformance of ethical mutual funds compared to conventional funds. Proponents of the theory that conventional funds outperform ethical ones argue that this is the case due to the fact that it takes time to screen all ethical funds, there are less diversification possibilities, overpricing of ethical stocks or the exclusion of well performing companies because there are not social responsible. There are also researchers that concluded that ethical funds could outperform conventional funds. Reasons for this phenomenon are high quality management, less chance for high cost during a disaster, reducing risk, improve efficiency or better corporate social responsibility standards which can lead to a higher market value.

With the theories mentioned before, I propose two hypotheses. The first hypothesis that will be tested is that ethical companies are less exposed to the market than conventional ones. So, I expect that SRI funds are less market sensitive.

H1: Ethical (socially responsible) mutual funds have a lower beta than conventional mutual funds

H2: Ethical (socially responsible) mutual funds do not underperform conventional mutual funds

The second hypothesis that will be tested is concerning the out- or underperformance of ethical mutual funds, compared to conventional funds. Despite the higher screening cost and the diversification problem, I expect that ethical mutual funds do not underperform conventional funds; the abnormal return will not be significantly different. The volatility of ethical funds could be slightly lower, because those firms are able to withstand a corporate crisis, which will indicate a lower volatility. This can cause a lower beta for ethical firms. Since SRI funds mainly invest in ethical firms, overall the beta will be lower than the beta of conventional funds. Therefore I expect SRI funds to be less market sensitive. The lower beta could also have other reasons than firms with a lower beta. I will test this by comparing the betas of the ethical and conventional funds.

Ethics and the financial crisis of 2008

In a perfect market, social corporate responsibility does not matter. The financial crisis shows something different. It shows that managers also need to take into account different interests, risk and efficiency to allocate assets to match with liabilities. Not only long-term goals are important. The first signs of the financial crisis were noticeable in 2006; there was a higher mortgage default rate than usual. As of 2007-2008 the entire developed financial world is facing one of the largest turmoil since the beginning of modern economy. Many companies faced bankruptcy or had liquidity problems. Worldwide people were insecure about the economy and a recession was a fact. Companies saw their profits being reduced and had to cut in their budgets. This has as a consequence that also the budget for corporate social responsibility had to shrink. Corporate social responsibility is one of the first areas where a firm saves money, because there is no short term result. And because the chance of liquidity problems is larger during a crisis, companies will save on projects where the costs exceed the revenues on short term. According to Giannarakis and Theotokas (2011) CSR is in the eyes of most companies a threat for survival, because of the extra costs for social projects. It cost a lot to take into account all interests of all stakeholders. Karaibrahimoğlu, Y. Z. (2010) found out based on a research of 100 Fortune 500 companies that there was a reduction in number and size of corporate social responsibility projects. Friedman also concluded that CSR only reduces the company's profit. "The greatest social responsibility this year is to keep the companies alive" (Yelkikalan, 2012). Also due to the tech bubble of 2001 could have an impact on ethical mutual funds. Ethical investors had many technological firms in their portfolio, because they were relatively social responsible, because these companies had relatively low pollution (Michelson, 2004).

But there are papers that assume the opposite. The financial crisis affects the whole economy, and therefor almost each company has to take the consequences of this crisis into account. The economic and financial systems have failed. This is the time to reconsider these value systems. During a crisis reputation is important. According to Schnietz and Epstein (2005), managers respond more and more to the demand of investors, therefor also on the ethics of the firm. They find that a good reputation for social responsibility have tangible financial benefits for a company. So during a crisis, there is could be a positive relation between financial performance and corporate social responsibility. This is because companies increase their CSR performance to build or sustain their brand name, consumers' trust and redefine the relationship between companies and society (Giannarakis and

Theotokas, 2011). Godfrey et al. (2009) shows that there is an ‘insurance-like’ benefit, when participating in technical CSR’s. This increases the value of the shareholder. Others suggest the CSR is even a must, like Smith (2003). It is very important for your reputational risk and other pressures of the contemporary business environment. In summary, there is a rising demand for corporate social responsibility. During a crisis, a firm could benefit from the reputation they build in the years before. This could lead to a positive relation between firms in a crisis and CSR. Karake (1998) investigated more than 150 companies who were downsizing between 1990 and 1992. Karake found that companies with better corporate social responsibility performed better than companies that scored worse on CSR. CSR was measured by a reputation index. Return on equity was used to measure the performance of the firm in that period. This is interesting because it is comparable with firms during a crisis, when firms also downsizing.

Corporate social responsibility is most of the time seen as a threat for companies. But, as mentioned before, during a crisis it could also be an opportunity for the firm. Yelkikalan (2012) proposes a model with both contains the opportunities as the threats. First the components of the model will be explained. The frame work is based on different definitions. It is important to know the distinction between protecting and improving the welfare (Carroll & Buchholtz, 2011). Protecting the welfare means not harming it, while improving contains the creation of positive contribution to the society. According to this paper, several factors are important for CSR:

1. Organizations have to consider the effects of all their actions on everything else seriously
2. Leaders have the obligation to improve and protect the welfare of the society
3. Bringing together legal and economic responsibilities and moving beyond these responsibilities

The last definition the framework uses is the definition of CSR according to Kotler en Lee (2005): "an obligation undertaken in order to improve the welfare of the society through on-demand business applications and contributions of corporate resources". The model is divided into four responsibility dimensions: economic responsibility, legal responsibility, ethical responsibility, and voluntary responsibility.

The first dimension is economic responsibility. This is the first responsibility in the pyramid of corporate social responsibility (figure 2.1). With the provided return, new jobs are created, the wealth of shareholders will be improved, employees are being paid, new resources could be discovered, and

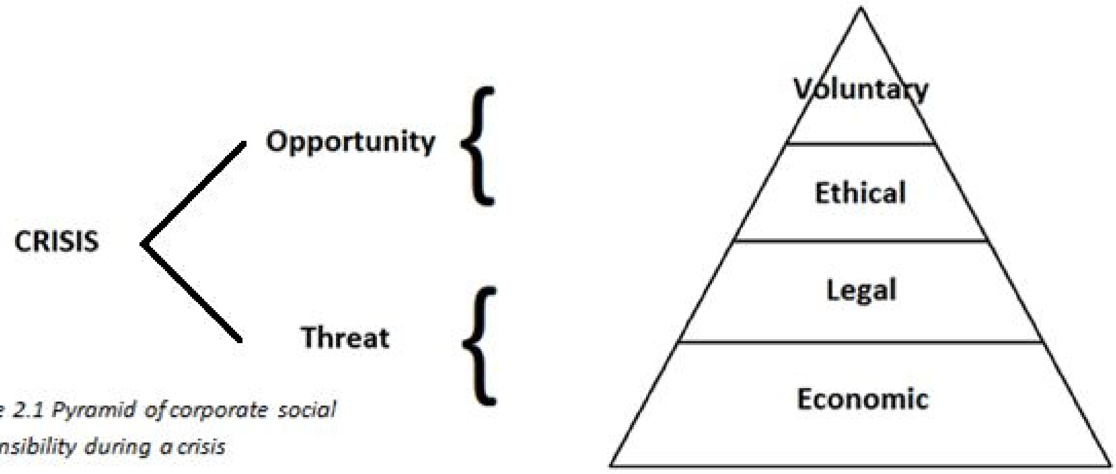

Figure 2.1 Pyramid of corporate social responsibility during a crisis

processes can be innovated and there can be invested in technological improvements. Legal responsibility is the second layer of the pyramid. Companies have to act within the laws which are determined by the government, society and other organizations. In other words, the society gives the firm permission to be the manufactory within that society. Next to these laws that give restrictions to the company, there are also laws to encourage corporate social responsibility. Third in the pyramid is the ethical responsibility. These are activities of the company which are not restricted or encouraged by the law, but by society. Within this layer, firms can build a reputation. CSR should be integrated in the company's policy and should represent certain norms, standards and expectations like justice, equality and the protection of different stakeholders. The distinction between this dimension and the first two is that this one is not mandatory, but wanted. Where it is hard for a firm to differentiate at the first and second dimension, it is easier with ethical responsibility. The last dimension on the top of the pyramid is voluntary (charitable) responsibility. The core of this dimension is philanthropy. Where the ethical dimension is wanted, this dimension fulfills the needs of the people. It gives the society more than it expects the company to give. Examples are projects in the field of education or culture. The main difference with the lower levels of the pyramid is that these responsibilities are not necessary. Not many companies can reach the top of the pyramid, since it requires to firm to produce on a large scale (Yelkikalan, 2012).

Like mentioned before, there are economists that suggest that CSR is only profit-reducing, like Friedman and his followers. But the company has responsibilities towards the society; firms are obligated to start CSR projects. This can lead to a higher firm value and even a higher welfare of the community in the area the firm acts. With the definitions and the pyramid of corporate social responsibility, the model can be developed. Some companies are looking to CSR as a threat, for others it is an opportunity. Many companies cut their budgets to save money on CSR, while others invest, hoping it will improve their reputation en therefor coming stronger out of the crisis than the firms that save on CSR.

So, the crisis has positive and negative effects on CSR. The financial crisis has also effect on the pyramid of corporate social responsibility. Since the crisis, the unemployment rate is rising in most western countries. Firms that fired many employees due to reorganizations as a consequence of the crisis decreased their reputation. Because of this, social projects for the community have great effect for the image of the firm. Therefore, in times of a downsizing economy, the first to layers of the pyramid are a threat for the company, while the ethical and voluntary responsibilities are opportunities for the firm. A firm can give herself through the third and fourth dimension better a better fundament to survive the crisis. While the crisis is a very turbulent period, with CSR firms can make themselves more stable (Yelkikalan, 2012). According to Yelkikalan it could strengthen your business strategy, enlarge your market share and stabilize or improve the confidence of the investor. It also stimulates to improve the risk management of the firm. Giannarakis and Theotokas found the CSR grew in the period 2007-2010, except for the period 2009-2010, when the crisis was peaked. In figure 2.1 is the model shown in a figure. In summary, during a crisis are the voluntary and ethical responsibilities an opportunity for the firm, and are the legal and economic responsibilities a threat.

One lesson learned from the crisis is that we have to take our responsibility, to prevent this from happening again in the future. There are several trends where a manager has to react sufficient enough to manage a company during a crisis. The current trends are globalization, increasing transparency, increasing scarcity of natural resources and growing social inequality (Peters, 2009). Along with these trends there are several opportunities and risks. Peters suggest that with CSR you can transform these social risks in to strategic opportunities. This takes place into three areas; outside and within the market and improving the market conditions. Outside the market is the involvement of companies into the society. Although these activities are far from their core activity a company could benefit from it due to the fact that they can acquire the interests of all stakeholders, provides new partnerships and acquire a potential new expertise. The influence on society is minimal. The influence is more evident within the market. This could be accomplished by sustainable innovation in processes, products and management. Large companies can also join together or lobby for better market conditions.

The 2008 financial crisis has not only effect on the corporate social responsibility of companies, but also on the research about CSR. In the first years after start of the crisis, the amount of research on CSR dropped significantly. But after two years, in 2010, new subjects were introduced concerning CSR and ethics. For example, the relation between the cost of capital and the environmental policy of company is further investigated. As mentioned before, there is a negative relation between the cost of capital and social responsibility records (Chava, 2011). A consequence of this is also a lower return for the investor. The question is if the investor is compensated for this, by for example reduced risk. As mentioned before this is possible, due to reduce the chance on an environmental disaster. Also, after 20 years of successful ethical investing, the question rises if ethical investing has come to an end. Nowadays, the market is not satisfied yet, but nobody can predict the future.

In summary, there are different theories concerning corporate social responsibility in times of crisis. The first theory is that CSR is a threat for the survival of the companies. Companies have to cut their budgets and 'the greatest social responsibility this years is to keep the companies alive'. On the other hand there a researchers who argue that CSR can help companies to survive during a (financial, economic) crisis. Reason for this is amongst others the reputation a company has where they can build on during a crisis.

H3: The difference between the betas of ethical (socially responsible) funds and conventional funds is different during a worldwide crisis compared to 'normal' times

H4: The difference between the returns of ethical (socially responsible) funds and conventional funds is different during a worldwide crisis compared to 'normal' times

I expect the difference between the returns of ethical and conventional funds will be greater, because these companies could absorb a shock better. During the beginning of the crisis there should not be great differences, because it needs time to see results from investor behavior. I expect that after a view years after the beginning of the crisis the differences are between ethical and conventional funds are more different than during or before the 2007 financial crisis. Second, because firms that include CSR in their strategy are able to absorb shocks better, I expect them to be less volatile compared to the market. Therefore I expect more differences during and after the crisis compared to before the crisis. For this reason I expect the beta of SRI funds is lower than the beta of conventional funds and therefor to be less market sensitive.

3. Research Methodology

3.1 Sample selection

This paper investigates whether ethical (social responsible) mutual funds outperform conventional mutual funds. Next to that, I want to include the 2008 financial crisis to see if the volatility during a crisis is lower for ethical mutual funds than for conventional fund. This gives the following hypotheses:

H1: Ethical (socially responsible) mutual funds have a lower beta than conventional mutual funds

H2: Ethical (socially responsible) mutual funds do not underperform conventional mutual funds

H3: The difference between the betas of ethical (socially responsible) funds and conventional funds is different during a worldwide crisis compared to 'normal' times

H4: The difference between the returns of ethical (socially responsible) funds and conventional funds is different during a worldwide crisis compared to 'normal' times

To test these hypotheses, I used data from DataStream. There are 445 ethical mutual funds selected for this thesis. A part of the funds are funds that are also selected by EIRIS. EIRIS is 'a leading global provider of research into corporate environmental, social and governance performance'[1]. It is a non-profit, independent organization who helps investors and asset managers develop the market. There were 70 (mostly UK) mutual funds selected from the EIRIS database. Another source for the list of mutual funds is Bloomberg, from which 118 mutual funds were selected. Mutual funds that are selected are listed under the category Sector Fund-Environment Friendly Funds. The database consists out of 445 mutual funds, form the UK, continental Europe and the United States.

A lot of the European mutual funds are listed on the Luxembourgian market. The reason why there are many funds listed in Luxembourg, is due to a new law (2007). It was easier for funds to set up an investment. Another source for SRI funds is the social responsible investing group. They select their funds with 'positive screening for corporate governance, environment, labor, diversity, & community.'[2] So in these three databases, funds were selected based on corporate social responsibility,

[1] http://www.eiris.org/
[2] http://socialresponsibleinvest.blogspot.nl/

ethics, the environment, community sharing and religion. These three databases were merged which completed the dataset.

The sample period is from the first of January 2001 until the 31st of March 2013. With this time frame the returns and volatilities before, during and after the 2008 financial crisis can be compared. There was also a smaller crisis, the tech bubble, starting at the end of the 90's and ended abruptly in 2002. I will not take this crisis into account, because there is less data available of ethical mutual funds of the period before this crisis. For the dataset, mutual funds that have data from at least the first of January 2001 are selected. But also mutual funds that have data later than the first of January are included in the dataset. Also funds that are not active anymore, so called dead funds, are included to the dataset to minimize the survivorship bias. The survivorship bias is the tendency to exclude mutual funds that are performing badly, what could result in a biased dataset. This will overestimate the past return of the mutual funds. Some funds do not have data during the active period of those funds. In this case, the fund is included but the period with no data will have a return of zero.

The dataset is divided in three periods, as mentioned before; before the crisis, during the crisis and after the crisis. The first period contains the first of January 2001 until the 6th of August 2007. As start of the 2007-2008 financial crisis, the seventh of August 2007 is taken. The reason for this is that on this date BNP Paribas ended the withdrawals of three hedge funds, due to insufficient liquidity of those funds. The end of the crisis in this paper is the 30th of April 2011. This date is seen as the turning point of the economic crisis in the United States. Although there is not an exact date for the end of the crisis, in this paper it will be assumed that this is the date the worst periods of the crisis were over. This hold not for every country, but this assumption will be made to test the hypotheses. The last period is from the first of May 2011 until the 31st of March 2013. This period will be considered as the time after the crisis. This is the period when the market stabilize, but still faces the consequences of the crisis.

The dataset is divided in three areas: i) US, ii) UK, and iii) Continental Europe, including Ireland. Other countries are Austria, Belgium, Denmark, Finland, France, Germany, Italy, Liechtenstein, Luxembourg, The Netherlands, Norway, Sweden, Switzerland and Spain. As could be seen in table 1, the data consists out of 75% European funds, 11% fund from the United States and 15% funds from the United Kingdom.

Table 3.1 Number of funds, grouped per country

Region	Country	# SRI funds	% SRI funds
Region i		**49**	**11,0%**
	United States	49	24,8%
Region ii		**63**	**14,2%**
	United Kingdom	63	20,9%
Region iii		**333**	**74,8 %**
	Luxembourg	189	42,5%
	Austria	50	11,2%
	France	36	8,1%
	Belgium	22	4,9%
	Liechtenstein	6	1,3%
	The Netherlands	6	1,3%
	Germany	4	0,9%
	Sweden	4	0,9%
	Switzerland	4	1,7%
	Germany	4	0,9%
	Ireland	3	0,7%
	Italy	3	0,7%
	Finland	2	0,4%
	Norway	2	0,4%
	Denmark	1	0,2%
	Spain	1	0,2%
Total		**445**	**100%**

In DataStream, the daily prices and returns of the mutual funds were obtained. The data is denoted in the local currency. Table 3.1 gives a summary about the mutual funds. The data of these funds are transformed into weekly data. Monthly data minimize the bid-ask bounce, but the database is too small to work with monthly data. This is the reason the data is transformed in weekly prices and returns. Below, a table is given about the different criteria of SRI. I will use the criteria found by Renneboog (2011).

Table 3.2 Different screens used by SRI to select firms. Also given if it is a positive or negative screen.

Category	Type of screen	Screen	Definition
Sin	Negative	Tobacco	Avoiding companies producing tobacco
	Negative	Gambling	Avoiding casinos and suppliers of gamble material
	Negative	Alcohol	Avoiding companies producing alcoholic beverages
	Negative	Weapons	Avoiding companies providing weapons
Ethical	Negative	Animal Testing	Avoiding companies that test their product on animals or companies providing animal tests
	Negative	Genetic Engineering	Avoiding firms that produce genetic modified products
	Positive	Healthcare	Selecting firm that increase human health
	Negative	Religion	Selecting firms based on religious values
Social	Positive	Business Practices	Emphasize on product quality and safety
	Positive	Corporate Governance	Selecting companies with fair corporate governance: e.g. board compensation
	Positive	Community	Selecting firms with active role in community
	P/N	Diversity	Selecting firms with minority program
	P/N	Labor	Selecting firms with good labor conditions
	P/N	Human rights	Selecting firms that promote human rights; avoiding firms that infringe human rights
	P/N	Foreign operations	Selecting firms that promote human rights on foreign operations
Environmental	P/N	Environment	Selecting firms that have high environmental standards
	Positive	Renewable energy	Selecting firm providing or producing renewable energy
	Negative	Nuclear	Avoiding companies linked to nuclear power plants

In table 2 four categories of different screens are shown. In total there are 18 different screens in the dataset. The first category is 'sin'. The funds in this category are selected if the firm is not producing or providing weapons, alcohol beverages, and tobacco. Also casinos and suppliers of gambling material are also avoided. In the second category, funds are selected by ethical criteria, like testing on animals and genetic engineering. Next to that, funds that stimulates or improve human health (-care) are also selected in the database. Last, some funds that select with religious criteria are also selected for the database. The third category is the social funds. In this category, funds selection are based on amongst others corporate governance and labor/ work conditions. Firms that infringe human rights are avoided in the dataset. The last category are funds selected based on their environmental efforts. So, funds with high environmental standards are selected, while funds with low environmental standards are avoided. Funds that selected firms which are producing renewable energy are selected, while funds which include firms with nuclear plants are avoided.

3.2 Benchmark

To compare the SRI mutual funds I use a dataset of more than 13,500 conventional mutual funds. These funds are downloaded from DataStream. Dead funds are also included which is similar to the SRI funds; this is to minimize the survivorship bias. In Stata, all double data are excluded.

3.3 Performance benchmark

This database only consists out of US funds. But because the US market is very diverse and the funds invest internationally, these funds are sufficient to use as a benchmark. For the risk-free rate I use a 3-month US treasury bill. For each conventional fund the CAPM return is calculated.

$$r_{it} - r_{ft} = \alpha + \beta_{im}(r_{mt} - r_{ft})$$

For the return of the market I use two different markets. First, I will use the US market; S&P 500. Second, because the funds are very internationally diversified, I us the MSCI world index to calculate the market return. With this model I create for each region a benchmark portfolio. With these expected excess returns I can test if these excess returns are significantly different from ethical mutual funds. Also I can compare different betas and alphas and see if risk has declined or not during the crisis compared to non-ethical investments. The beta is calculated with the following formula:

$$\beta_{im} = \frac{COV(r_i, r_m)}{VAR(r_m)}$$

3.4 Performance Social Responsibility Funds

The individual funds are sorted by region. For each region I construct a benchmark portfolio. For the European market I will use the MSCI World Index. Because some local markets are very small, for example the Luxembourgian market, I will use the MSCI World Index. Due to the little information about all European countries available, I also use the US benchmark portfolio for Europe and the UK. I also use the MSCI World as market returns for all countries, because mutual funds are very internationally diversified.

4. Results

4.1 Summary Statistics

In table 4.1 below are the ages given of the SRI funds, sorted by region. Almost fifty per cent of the funds are older than 10 year. This means that they contain the entire time frame. Some of the funds are much younger, and some of the funds were even founded after the start of the financial crisis. An explanation of this phenomenon is the higher demand for ethical investments during a crisis. As stated before, investors changed after 2007. There investors who believe that ethical funds will outperform conventional funds. Next, investors are investing with the intention to get long term return to build a safe investment portfolio for their retirement, but it could also be a marketing trick. Because of the financial crisis, investment groups try to differentiate themselves from other funds. With the title 'ethical' in the name or strategy of the funds, they show that their funds are safe. Also the CEO of Bailley Roberts Group argues this; "Going back 15 years, ethical investment probably wasn't very economical or a good move then – it was something for university students and 'tree huggers' – but what I've found now in my client base is that those aged over 50 are becoming more concerned about the environment".[3] He gives as main reason the greater transparency of companies in the last fifteen years. Eiris gives another explanation of this growth. Eiris argues that people are more aware of global change and human rights. In practice, social responsibility investments cover only two per cent of the total market.

Table 4.1 Number of SRI Funds per region and age.

Region↓, Age→	> 10 years	<10, > 5 years	< 5 years
Overall	218	114	113
Europe	122	102	109
UK	47	12	4
US	49	0	0

[3] http://www.financialobserver.com.au/articles/client-demand-for-ethical-funds-on-the-rise

Table 4.2 Average assets under management, divided per region and size. First block are the numbers in millions (€). The second block contains the number of funds in the several portfolios portfolio.

Region↓, Size→	Small	Medium	Large	Total
1. Overall	17,4	92,5	542,8	216,3
Europe	17,1	93,3	648,1	194,3
UK	16,8	115,9	494,1	251,1
US	32,7	65,0	420,5	319,3
2. Overall	149	149	147	445
Europe	128	126	79	333
UK	17	19	27	63
US	4	4	41	49

The ethical funds are divided into three groups, based on size. There are large differences between the groups. But the average assets under management are still relatively small. It has proven that ethical funds have greater exposure than the conventional funds to the small firm effect (Gregory et al, 1997). The theory small firm effect holds that smaller firms have a greater opportunity to growth than large firms. In this case, ethical funds have a greater potential to grow than conventional funds. But Orlitzky (2001) found that size does not matter concerning financial performance. In his paper he investigated if there is a third factor in the positive relationship between corporate social responsibility and financial performance of these firms. He concluded that size is not a significant factor. The larger funds have also a greater potential to diversify more, simply because these funds have more resources to invest.

Table 4.3 Correlation matrix. These correlations are based on the three size groups explained in table 4.2. Before the crisis is the period from the first week of 2001 until the seventh of August 2007. In this paper the crisis last until the last week of May 2011. The end date of the data is 31st of March 2013. In this case, the market is the MSCI World Index.

Period↓, Funds/ market→	SRI-Conventional Funds	SRI - Market	SRI (small) - Market	SRI (medium) - Market	SRI (large) - Market
Overall	0,84	0,87	0,85	0,87	0,85
Before crisis	0,82	0,85	0,84	0,84	0,83
During crisis	0,86	0,88	0,86	0,89	0,88
After crisis	0,88	0,88	0,88	0,89	0,86

Table 4.3 shows the correlation between SRI funds, conventional funds and the market. The correlations are high. Although it is a minimal rise, the correlation between the social responsible funds with the market and the conventional funds are higher after the crisis then before the crisis. It could be because the crisis affects almost every firm, which causes more similar strategies of the companies. There could also be argued that due to the crisis firms want to differentiate from each other, which should lead to lower correlations. But because every firm faces the crisis and have to adjust their strategy, firms could become more similar.

4.2 Comparison of the betas between SRI and conventional mutual funds.

The first hypothesis of this thesis was if conventional mutual funds have a higher beta compared to the beta of SRI funds. In table 4.4 the results of the betas are shown. Also here, the SRI portfolios are divided in groups based on region and size. First, all the alpha's are insignificant and close to zero. Also the CAPM holds that all the alphas must be zero. The alpha is the excess return over CAPM and beta; the systematic risk in the CAPM. For example, if the alpha is 1.0, the mutual funds outperformed the market with 1%. The out- or underperformance will be discussed later in this chapter.

The betas of the funds are all significant at a 5% significance level. The average beta of the SRI funds are 0.566 and the average beta of the mutual funds is 0,605. There is not much difference between these two betas, but the difference is significant.

The beta of the SRI funds is in zero cases higher than the betas of the conventional funds. Overall the systematic risk of SRI funds is lower. SRI funds are less market sensitive than conventional funds in most cases. For example reducing risk, reducing waste, improving relations with regulators, generating brand equity, improved human relations and employee productivity are several reasons (Heal, 2005). CSR reduces the chance of conflicts with external parties, which leads to a lower chance that the share price will drop. Also, companies that are investing in CSR can react more efficiently.

But the beta could also be lower because SRI funds also invest in more safe assets, like bonds. So it is hard to say, because of the lower beta, SRI funds are less risky because there systematic risk is lower. But it can be concluded that with the same return, SRI funds have slightly less systematic risk. Their strategy is less market sensitive than the strategy of conventional mutual funds.

Table 4.4 This table shows the CAPM Betas. The asterisks declare the significance.
**** = significance level of 5%, ** = significance level of 10%, * = significance level of 15%*
The last column indicates if there is a significant difference with the beta of conventional funds. If this is the case, between parentheses is noted if the beta is higher or lower compared to the beta of the conventional mutual funds.

	Alpha	Beta	R^2	Significant difference with beta mutual funds
Overall	-0.0001	0.566***	0.75	Yes** (lower)
Overall Small	-0.0002	0.598***	0.73	No
Overall Medium	0.0007	0.509***	0.75	Yes*** (lower)
Overall Large	-0,00001	0.572***	0.72	Yes* (lower)
Europe	-0.0001	0.554***	0.75	Yes*** (lower)
UK	0.0003	0.579***	0.74	No
US	-0.0002	0.561***	0.67	Yes* (lower)
Conv. Funds	0.0002	0.605***	0.88	-

4.3 Did the CAPM beta of the SRI funds changed during the financial crisis?

The third hypothesis argues that during a crisis, in this case the 2007 financial crisis is different than before the crisis. I expected the SRI beta to be lower during the crisis, because it could be that these firms are better in absorbing shocks than other firms. As mentioned before, investors are more careful which company they select for their portfolio, where ethics become more important as criteria. Table 4.5 first shows if the betas of the SRI funds have changed over time. The funds are divided per region and size and grouped in three periods: before the crisis, during the crisis and after the crisis. The fifth and eighth column shows the differences between the betas during and after the crisis with the betas before the crisis. All differences are significant at a 5% level, except for the medium and large funds from Europe. They are both significant at a 15% level. This means that the systematic risk of the SRI funds is lower after the crisis. In the pyramid of corporate social responsibility mentioned in chapter 2, a firm can create a better fundament during a crisis through the third (ethical) and fourth (voluntary) layer of the pyramid. In this way a firm could be more resistant to a crisis.

Table 4.5 CAPM Betas of the SRI funds, divided into three periods: before the financial crisis which started in 2007, during the financial crisis and after the crisis.
**** = significance level of 5%, ** = significance level of 10%, * = significance level of 15%*
The column 'compared to before' gives the differences of the beta in that period compared to the beta before the crisis.

	Before Crisis		During Crisis			After Crisis		
	Alpha	Beta	Alpha	Beta	Compared to before	Alpha	Beta	Compared to before
Overall	-0.0002	0.643***	-0.0002	0.532***	-0.111***	0.0003	0.519***	-0.124***
Small	-0.0003	0.674***	-0.0004	0.558***	-0.116***	-0.0002	0.575***	-0.099***
Medium	0.0001	0.565***	-0.0002	0.482***	-0.083***	0.0004	0.482***	-0.083***
Large	-0.0003	0.671***	0.0001	0.552***	-0.119***	0.0009	0.497***	-0.174***
Europe	0.0000	0.586***	-0.0003	0.542***	-0.044***	0.0002	0.527***	-0.059***
UK	0.0001	0.698***	0.0003	0.515***	-0.183***	0.0009	0.547***	-0.151***
US	-0.0011	0.713***	0.0003	0.505***	-0.208***	0.0009	0.541***	-0.172***

Table 4.6 shows the differences between the betas of the SRI funds and the conventional mutual funds during time. Also this time there are three periods: before the crisis, during the crisis and after the crisis. I expected the beta of the SRI funds to be lower than the betas of the conventional funds during the crisis. This because of the reasons mentioned at the beginning of this paragraph. Before the crisis, only the betas of the overall medium sized funds are significantly different from conventional funds. An explanation could be, due to the less data available for this paper about English and American funds. During the crisis the SRI funds are less market sensitive. But before and after the crisis the systematic risk seem to be more or less the same and they have similar market exposure. But it could also be the case that during the crisis, SRI funds are investing more in assets that face less market exposure and have a lower systematic risk. So it is hard to say if the decline in beta is just because the beta of ethical firms is lower. It seems that compared to the conventional funds, SRI funds have a less sensitive market strategy.

Table 4.6 Differences between betas of SRI funds and Mutual Funds
**** = significance level of 5%, ** = significance level of 10%, * = significance level of 15%*

	Before Crisis	During Crisis	After Crisis
Overall	-0.047	-0.059**	0.020
Overall Small	-0.016	-0.033	0.080**
Overall Medium	-0.125***	-0.109*	-0.020
Overall Large	-0.019	-0.039	-0.001
Europe	-0.104***	-0.049*	0.028*
UK	0.008	-0.076**	0.048*
US	0.023	-0.086**	0.042

4.4 Do conventional mutual funds outperform SRI funds?

There are a lot of theories that conventional mutual funds outperform ethical funds, visa versa, or that there is not any differences between the returns of these funds, which proves the second hypothesis. In table 4.7 the returns are shown. I found no significant differences between the returns of ethical funds and returns of conventional mutual funds. Also region and size seems not to be a significant factor. The significance of the results is calculated with an independent sample t-test. The CAPM returns are calculated with the betas, market return and the risk free rate. Because of the small differences between the betas and the exposure to mostly the same market, the returns do not differ a lot. One of the reasons conventional funds should outperform ethical funds, is that conventional funds can more diversify. It seems that this is not a problem for ethical funds anymore in the period 2001-2013. Other reasons could be that there is a diversification problem, but that due to amongst others good management, more efficiency and less chance to get in financial trouble after a disaster. I think it is more likely that also the ethical funds could more diversify these days. Investors are changing. More investors values corporate social responsibility. The money invested in CSR rose the last decade, which can lead to more diversification potential for ethical funds.

*Table 4.7 Differences returns and return of funds and SRI funds (%) compared to conventional mutual funds. *** = significance level of 5%, ** = significance level of 10%, * = significance level of 15% In this table none of the results (differences) are significant.*

	Small		Medium		Large		Total	
	Raw	CAPM	Raw	CAPM	Raw	CAPM	Raw	CAPM
Overall Return	0.25	2.79	1.88	2.63	1.74	2.76	1.12	2.73
Difference with conv. funds	-2.36	-0.01	-0.72	-0.17	-0.86	-0.04	-1.49	-0.07
Europe	-0.17	2.77	1.42	2.67	2.53	2.70	1.24	2.71
Difference with conv. funds	-2.78	-0.03	-1.19	-0.13	-0.08	-0.10	-1.36	-0.09
UK	1.22	2.78	0.46	2.76	2.37	2.74	2.46	2.76
Difference with conv. funds	-1.39	-0.02	-2.14	-0.04	-0.23	-0.06	-0.15	-0.04
US	-0.14	2.73	0.45	2.87	1.07	2.56	0.39	2.72
Difference with conv. funds	-2.75	-0.07	-2.16	0.07	-1.53	-0.24	-2.22	-0.08

Table 4.8 shows the alphas and betas of the regression between returns of SRI funds and returns of conventional funds. All the betas are significant at a level of 5% and the R^2 is on average 0.71. This means that 71% of the movement in SRI funds is explained by mutual funds. People consider a high R^2 from 0.85 and this means that it moves more or less the same with the index or in this case the conventional mutual funds. Below 0.70 is considered low. Next to that, al the betas are less than 1, which indicates that the SRI funds are slightly less risky.

Next, all the alphas are not significant different from zero. This only means that there is a chance that the alpha will be zero. This means that the SRI funds do outperform, but more importantly not underperform conventional mutual funds. This is the same as I expected. But the alphas are mostly negative, only the UK has a positive beta.

Table 4.8 Regression between SRI funds and conventional mutual funds.
**** = significance level of 5%, ** = significance level of 10%, * = significance level of 15%*

	Alpha	Beta	R^2	Confidence interval (85%)
SRI Overall	-0.0002	0.851***	0.71	-0.005 – 0.003
SRI Small	-0.0004	0.879***	0.66	-0.008 – 0.002
SRI Medium	-0.0000	0.747***	0.67	-0.003 – 0.005
SRI Large	-0.0001	0.909***	0.73	-0.003 – 0.005
SRI Europe	-0.0002	0.813***	0.68	-0.005 – 0.004
SRI UK	0.0002	0.820***	0.54	-0.002 – 0.009
SRI US	-0.0004	0.976***	0.60	-0.009 – 0.003

Negative alphas mean underperformance; in this case the underperformance of SRI funds compared to conventional mutual funds. A reason is the diversification problem, where SRI funds have less choice which firm or asset to include in their portfolio. Other reasons are the time and money it will cost to screen all the firms. Despite the increased transparency of the firms, it still takes time to screen all potential firms. But overall, as mentioned before, the alpha does not differ significant from zero. All 85% confidence interval also confirms this. The last column of table 4.8 shows the 85% confidence interval of several alphas. The zero lies in this interval; there is an 85% chance the alpha does not differ from zero. After calculation, the alphas are lower than zero with a 20% confidence interval, which is very low. Therefor it cannot be concluded that SRI funds are underperforming conventional mutual funds during the last decade

The second hypothesis argues that ethical funds do at least not underperform conventional funds, which is the case in table 4.7 and 4.8. It also seems that it does not matter if a fund is relatively small or that the funds are located in Europe, the United Kingdom or the United States.

Also the SRI funds and the conventional mutual funds did not outperform the market. This is shown in table 4.4. The alphas are not significant, and also not significant from zero. Overall, they are negative, only the medium sized SRI funds have a positive alpha. Also ethical funds do not outperform the market. But both funds do also not underperform the market, based on CAPM's alpha. This suggests that there is not a financial compensation by investing in SRI funds. An ethical investor will not be rewarded but also not punished for investing ethically.

4.5 Is there any difference between the differences of the returns between SRI funds and conventional fund during and after the crisis compared to before?

The fourth hypothesis argues that the differences between the returns of SRI funds and conventional mutual funds are greater after the crisis than before. Companies that invest in corporate social responsibility can absorb a shock better than firms that invest less in CSR. I also expected that these differences could not be seen straight away, because it needs time to see results. Therefor I expect that in my third period (after the crisis, 1st of June until 31st of March) the differences will be greater.

In table 4.9 the raw and CAPM returns are shown. Again, there is not much differences between the CAPM returns, because of the similar exposure to the market and small differences between the betas. The raw returns show more differences. Before the crisis, SRI funds underperformed conventional mutual funds. Nevertheless, this result is not significant. During the crisis, or at the beginning of it, the differences are completely gone. An even after the crisis, or after May 2011, the SRI funds outperformed the conventional mutual funds by on average 2.55% and in the US even more than 8%. Also the differences between the CAPM returns are all positive. Nevertheless, also these differences are not significantly different from zero. It seems that there are slightly differences between those funds, but SRI funds do not outperform conventional funds. But were the returns of the conventional are higher before the crisis, after the crisis SRI funds performed better.

Table 4.10 shows the alphas and the betas of the regressions between SRI and conventional funds. Also these funds are sorted for size and region and for time. Again, all betas are significant and all alphas do not differ significantly from zero. As can be noticed, this table gives similar results as table 4.8 and 4.9. The alphas do not significantly differ from zero which means that the SRI funds do not outperform conventional funds. But the alpha is negative before the crisis and positive after the crisis, which indicates a small rise in returns relative to the returns of the conventional funds. Indicated in paragraph 4.4, there is also no significant difference between the betas of these funds. Where the betas of the SRI funds are slightly lower than conventional funds before and during the crisis, the betas of SRI funds are higher after the crisis (betas is greater than one).

Table 4.9 Differences returns conventional mutual funds and SRI funds (%)

	Overall		Before		During		After	
	Raw	CAPM	Raw	CAPM	Raw	CAPM	Raw	CAPM
Overall	1.11	2.73	1.86	2.88	-1.60	1.98	5.02	3.15
Difference with conv. Funds	-1.49	-0.07	-2.54	-0.01	-1.18	-0.13	2.55	0.12
Europe	1.24	2.71	2.77	2.87	-2.52	2.00	3.63	3.19
Difference with conv. funds	-1.36	-0.09	-1.64	-0.02	-2.10	-0.11	1.16	0.16
UK	2.46	2.76	3.59	2.89	1.08	1.94	7.95	3.31
Difference with conv. funds	-0.15	-0.04	-0.81	0.00	1.50	-0.17	5.49	0.28
US	0.39	2.72	-2,77	2.90	0.90	1.92	10.64	3.28
Difference with conv. funds	-2.22	-0.08	-7.18	0.01	1.32	-0.19	8.17	0.25

So table 4.10 indicates that before the crisis conventional mutual funds performed better than SRI funds, but after the crisis ethical funds performed better. The same holds if the SRI funds are compared to the market (table 4.5). Although these alphas are not significant, and do not differ from zero until a 20% confidence interval, it is remarkable that before the crisis all alphas are negative and after the crisis all the alphas are positive. The crisis could be a turning point of ethical mutual funds. It seems that they perform better than other funds and those investors find social criteria more important.

Therefore, the hypothesis that the differences between SRI funds and conventional funds are greater after the crisis holds, but the differences are not significant at a 85% level. The differences are similar with the differences before the crisis, but where the conventional funds outperformed the SRI funds before the crisis, the SRI funds outperformed the conventional funds after the crisis. Though, these differences do not significantly differ from zero. Also the alphas of SRI and mutual funds differ compared to before and after the crisis. Before 2007 the alphas were negative were after 2011 the alphas turn positive. It is hard to draw a conclusion or to say that SRI funds are performing better after the crisis compared to the market and conventional mutual funds, yet the crisis seems to be a turning point concerned the financial performances of these funds. Reasons for this could be a high quality management (Renneboog, 2008), lower cost during a crisis, reducing risk, reducing waste, improving relations with regulators, generating brand equity, improved human relations and employee productivity (Heal, 2005). Also other reasons like efficiency could be a part of the performance of SRI funds and firms (Geunster et al 2011).

Table 4.10 Regression between SRI funds and conventional mutual funds.
**** = significance level of 5%, ** = significance level of 10%, * = significance level of 15%*

	Before the crisis			During the crisis			After the crisis		
	Alpha	Beta	R^2	Alpha	Beta	R^2	Alpha	Beta	R^2
SRI Overall	-0.0003	0.826***	0.67	-0.0002	0.837***	0.74	0.0004	1.086***	0.77
SRI Small	-0.0004	0.851***	0.65	-0.0005	0.855***	0.66	-0.0001	1.183***	0.73
SRI Medium	-0.0000	0.704***	0.62	-0.0002	0.744***	0.71	0.0005	1.007***	0.78
SRI Large	-0.0005	0.887***	0.68	0.0000	0.904***	0.79	0.0009	1.067***	0.77
SRI Europe	-0.0001	0.737***	0.62	-0.0004	0.838***	0.71	0.0002	1.096***	0.77
SRI UK	-0.0000	0.858***	0.59	0.0002	0.745***	0.50	0.0010	1.082***	0.56
SRI US	-0.0014	1.004***	0.58	0.0002	0.946***	0.63	0.0016	1.024***	0.56

5. Conclusion

This paper tries to give a better insight in the differences between the return and betas of conventional mutual funds and SRI funds. There is a large history in investing ethically. It started in the fifties of the last century and for the next 60 years has grown tremendously. It is still only two per cent of the total market, but almost every company in the Western world applies corporate social responsibility. This all changed because the demand of the investors was changing. Companies became more transparent, so investors could select more carefully which firms to hold in their portfolio. Also the higher education and the introduction of the women in the financial market make lot of a difference. It seems that women as manager invest more in CSR than men en also the female investor selects firms on social and ethical criteria. These 'new' investors really want to change the quality of life and have ethical investing as a lifestyle.

There are papers that suggest that these ethical funds underperform conventional funds. Then why invest that many people in these funds? Are they willing to sacrifice in return to a better world or do they believe that ethical funds at least not underperform or even outperform conventional mutual funds? I found no results that SRI funds outperformed conventional funds, but more important they do not underperform. The betas (CAPM) do differ from the conventional funds. There are slightly lower, but significant, which indicates that they are less risky.

Also after the crisis there was a transformation of the investor. The investor becomes even more aware of CSR, because they want a stable income for their pension. During times of crisis, more investors believed that the solution lies in ethical funds. Also these returns did not outperform the market or conventional funds, the alpha turns from negative to positive during the crisis. This indicates a better performance of the SRI funds compared to conventional funds. This could be because firms that invest in CSR are better in absorbing shocks.

Overall, SRI fund do not out- or underperform conventional mutual funds, but after the crisis the alpha of SRI funds, compared to other mutual funds, turned positive after the crisis in 2011.

6. Limitations and Recommendations

Much more research can be done on this subject. One problem of this paper was the use of the CAPM instead of the three factor model of Fama-French. Last decade is had proven that this model gives better results. I had not enough sources to work with this model. Also management fees were not taken into account. But for both ethical as mutual funds there should be paid a fee; it does not matter for the under- or outperformance results in this paper.

Next, there are not many SRI funds. I selected 445, but the region of the United Kingdom and the United States were under represented. In next studies, region and size could be better taken into account. Also the time frame is very hard. Because the crisis started at the end of 2007, there is not much data of the period after the crisis and this period can also be called as the second period of the crisis. For better results, these hypotheses should be tested in a few years.

Also it was hard to say something about the CAPM beta. The lower beta could be because the firms in the SRI portfolio have less systematic risk or because assets were selected that has less exposure to the market, which lowered the beta. Next research could find out the differences between the strategies of SRI funds and conventional mutual funds.

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