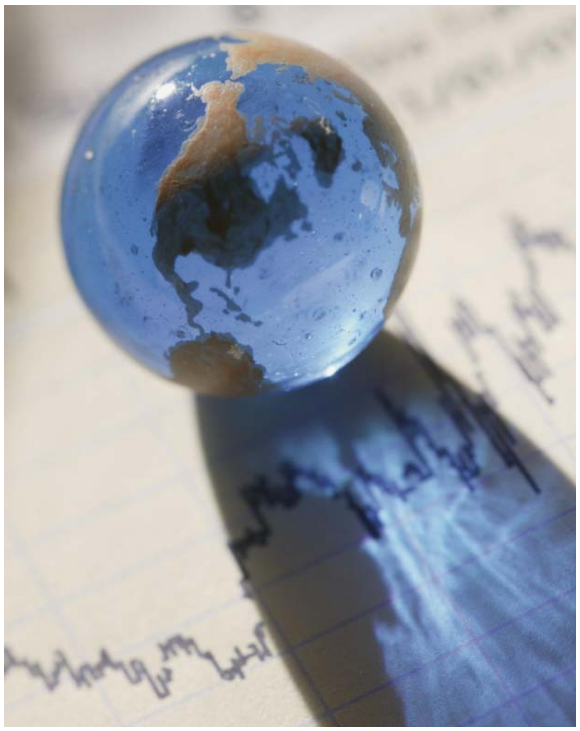
Sustainable Investing

Establishing Long-Term Value and Performance

June 2012



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Editorial Letter

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The evidence is compelling: Sustainable Investing can be a clear win for investors and for companies. However, many SRI fund managers, who have tended to use exclusionary screens, have historically struggled to capture this. We believe that ESG analysis should be built into the investment processes of every serious investor, and into the corporate strategy of every company that cares about shareholder value. ESG best-in-class focused funds should be able to capture superior risk-adjusted returns if well executed.

This is the key finding of our report in which we looked at more than 100 academic studies of sustainable investing around the world, and then closely examined and categorized 56 research papers, as well as 2 literature reviews and 4 meta studies – we believe this is one of the most comprehensive reviews of the literature ever undertaken.

Frequently, Sustainable Investing is stated to yield 'mixed results". However, by breaking down our analysis into different categories (SRI, CSR, and ESG) we have identified exactly where in the sprawling, diverse universe of so-called Sustainable Investment, value has been found.

By applying what we believe to be a unique methodology, we show that "Corporate Social Responsibility" (CSR) and most importantly, "Environmental, Social and Governance" (ESG) factors are correlated with superior risk-adjusted returns at a securities level. In conducting this analysis, it became evident that CSR has essentially evolved into ESG. At the same time, we are able to show that studies of fund performance – which have been classified "Socially Responsible Investing" (SRI) in the academic literature and have tended to rely on exclusionary screens – show SRI adds little upside, although it does not underperform either. Exclusion, in many senses, is essentially a values-based or ethical consideration for investors.

We were surprised by the clarity of the results we uncovered:

- 100% of the academic studies agree that companies with high ratings for CSR and ESG factors have a lower cost of capital in terms of debt (loans and bonds) and equity. In effect, the market recognizes that these companies are lower risk than other companies and rewards them accordingly. This finding alone should put the issue of Sustainability squarely into the office of the Chief Financial Officer, if not the board, of every company.
- 89% of the studies we examined show that companies with high ratings for ESG factors exhibit market-based outperformance, while 85% of the studies show these types of company's exhibit accounting-based outperformance. Here again, the market is showing correlation between financial performance of companies and what it perceives as advantageous ESG strategies, at least over the medium (3-5 years) to long term (5-10 years).
- The single most important of these factors, and the most looked at by academics to date, is Governance (G), with 20 studies focusing in on this component of ESG (relative to 10 studies focusing on E and 8 studies on S). In other words, any company that thinks it does not need to bother with improving its systems of corporate governance is, in effect, thumbing its nose at the market and hurting its own performance all at the same time. In the hierarchy of factors that count with investors and the markets in general, Environment is the next most important, followed closely by Social factors.
- Most importantly, when we turn to fund returns, it is notable that these are all clustered into the SRI category. Here, 88% of studies of actual SRI fund returns show neutral or mixed results. Looking at the compositions of the fund universes included in the academic studies we see a lot of exclusionary screens being used. However, that

> is not to say that SRI funds have generally underperformed. In other words, we have found that SRI fund managers have struggled to capture outperformance in the broad SRI category but they have, at least, not lost money in the attempt.

These conclusions go a long way towards explaining why the concept of sustainable investing has taken so long to gain acceptance and even now inspires indifference and even cynicism among many investors. It has been too closely associated for too long with the SRI fund manager results which are not only an extremely broad category (i.e. in terms of investment mandate), but historically were based more on exclusionary – as opposed to positive or best-in-class – screening. ESG investing, by contrast, takes the best-in-class approach. By analyzing the various categories within the universe of sustainable investing, we can now say confidently that the ESG approach, at an analytical level, works for investors and for companies both in terms of cost of capital and corporate financial performance (on a market and accounting basis). It is now a question of ESG best-in-class funds capturing the available returns.

So while Sustainable Investing is the term we use to refer to all these forms of investing, we believe using ESG factors in a best-in-class approach is emerging as the key investment methodology. The UN Principles for Responsible Investing (UN PRI) have perhaps done the most to promote ESG in recent years. As signatories and associated assets under management (AUM) to the UN PRI continue to grow from the current >1,000 signatories and $30 Trillion of AUM, investors are showing that they recognize the advantages and want companies to recognize them too. It is no surprise, therefore, that Sustainability/ESG as a strategic investment process is increasingly and broadly being rolled out across public equity and fixed income portfolios.

Investors will seek out investment managers who understand the ESG advantage and can leverage the information arbitrage that exists in the studies we examined. Sustainable Investing can pay dividends, but it does require managers who have internalized this information into their investment process and can also create appropriate strategies to help capture the upside that undoubtedly exists in this approach.

Executive Summary

In ***Sustainable Investing: Establishing Long-Term Value and Performance*** we have conducted 2 main analyses:

Firstly, we outline a history of Sustainable Investing (SI), from Ethical negative screens, to Socially Responsible Investing (SRI) to Responsible Investing (RI) – the latter using Environmental, Social and Governance (ESG) factors which we regard as the most current, best understood and most utilized corporate sustainability metrics. Alongside these developments in types of SI, we outline the development of Corporate Social Responsibility (CSR) over time, and the emergence of new techniques and concepts, such as Integrated Reporting (IR).

Secondly, we look at how SI factors have been correlated with superior risk adjusted returns in terms of (lower) cost of capital and (higher) financial performance at a security / market index and fund level. We do this through a broad data-set and a rigorous approach to classification of leading academic studies. And we do indeed find positive correlation in a majority of securities studies, particularly those that look at securities that rate highly with regard to CSR and/or ESG. However, SRI investment funds have clearly struggled more to capture these superior returns, with mostly neutral or mixed results with regard to outperformance.

This discussion and analysis is laid out in 4 different Sections to the paper:

- **Section I focuses on "The Evolution of Sustainable Investing"**, providing a discussion and clarification of key terminology used in this field, and how this has evolved over time;
- **Section II focuses on "Sustainability and Corporate Cost of Capital"**, or more specifically the relationship between a company's performance with regard to CSR or ESG and it's cost of debt and/or equity capital;
- **Section III focuses on "Sustainability and Corporate Financial Performance"**, or how the financial performance of securities relates to a company's CSR, SRI or ESG performance; and
- **Section IV focuses on "Sustainability and Fund Performance"**, or how various SRI funds have performed relative to mainstream funds.

We also note the approach of shareholder engagement and activism in Appendix I, although a full review of this literature is beyond the scope of this paper.

One of the most common statements among investors is that Sustainable Investing is hard to define and provides "mixed" results – there is no really clear evidence it leads to a superior risk-adjusted returns. It is more a combination of "doing good" for society and "not doing harm" to investment returns.

We believe that this perception is a result of:

- Sustainable investing having been too closely associated for too long with the performance of SRI funds. These funds are not only an extremely broad category (i.e. in terms of investment mandate), but historically were based more on exclusionary (or negative) – as opposed to positive or best-in-class – screening.
- Academic studies over the past 15 years or so have not been aggregated and classified into appropriate categories, but rather "mixed" together and are thus easily described as having "mixed results". By "unscrambling" them – as we do in this paper – a clearer picture emerges.

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In terms of categorizing academic studies that have looked at the results of SI (this analysis is included in Sections II, III and IV), the first key area to distinguish is indeed the type of study carried out, and whether it is:

- Based on CSR; or
- Based on SRI; or
- Based on ESG (and E, S and G separately).

Then it is a question of looking for correlation of high CSR, SRI or ESG scores in relation to with the following:

- The Cost of Capital (equity or debt – loans and bonds), which is also a fundamental measure of risk
- Corporate Financial Performance (market based returns and/or accounting measures)
- Fund Returns for those funds (mostly classified as SRI) trying to capture the above performance

We looked at over 100 studies and then we included in our analysis 56 research papers, as well as 2 literature reviews and 4 meta studies. To increase the confidence in the results presented in the reviewed papers we chose to include papers that met a minimum level of academic rigor. Accordingly, we excluded papers that have been working papers and have not been published for more than five years, we only included papers published in well known journals, and excluded papers where we were concerned with methodological problems in terms of selection bias and correlated omitted variables. We acknowledge that this process did exclude some studies that showed a negative correlation between CSR and financial performance as well as studies that showed a positive or no correlation. We believe that summarizing the evidence from more robust studies will provide us with a more comprehensive understanding of the potential of Sustainable Investing.

The key conclusions of our paper are as follows:

- Generally most studies find correlation rather than specifically trying to find causality. However, for an investor, this correlation provides key investment factors for portfolio construction.
- There is overwhelming academic evidence, within all (100%) of the studies that we have found showing that firms with high ratings for CSR and ESG factors have a lower (ex ante) cost of capital in terms of debt (loans and bonds) and equity. In effect they are lower risk in a fundamental (not necessarily short term volatility) sense. In some ways this is the most impressive result as it firmly puts the issue of Sustainability into the office of the Chief Financial Officer.
- There is compelling academic evidence that at the underlying security / market index level, that strong CSR and ESG factors are correlated with CFP outperformance, both market and accounting based. 100% of the studies we found show firms with high ratings for CSR exhibit financial out-performance[1], while 89% and 85% of the studies we found show firms with high ratings for ESG (or E, S or G) exhibit market based or accounting based outperformance, respectively[2]. Time frames are hard to generalize from the studies as there is a broad array of sample date ranges, but most investors see this as a medium- (3-5 years) to long- (5-10 years) term opportunity. Governance has had the strongest influence, followed by Environment and Social factors, which we believe are increasingly gathering impact (particularly E).
- Looking at SRI securities studies, we find a less compelling story at the security level, although more positive and neutral than negative – 42% of studies that we have found show that high-scoring firms in terms of SRI exhibit higher market-based performance relative to lower-scoring securities.
- Studies of actual fund returns, which look at how investment managers have tried to capture the outperformance of SI, have tended to be through the SRI category, as that is how the majority of funds have been classified. Here are truly the "mixed" results, where the studies are mostly neutral – with 88% of studies that we have found

[1] Note here that the literature review we analyzed in this section ("The Worth of Values: A Literature Review on the Relation Between Corporate, Social, and Financial Performance", Van Beurden & Gossling, *Journal of Business Ethics*, 2008) did find 9 neutral and 2 negative studies analyzing the CSP-CFP relationship, but is counted as a positive study as it found an overwhelming majority of positive studies (23) looking at this relationship

[2] Note that some studies looked at both market and accounting based performance and so are categorized twice in this paper

showing neutral or mixed results. Fund managers have struggled to capture the outperformance with some exceptions at smaller more specialized fund. However, they have not generally underperformed – in fact, we found no academic studies that found underperformance at either the security or fund level.

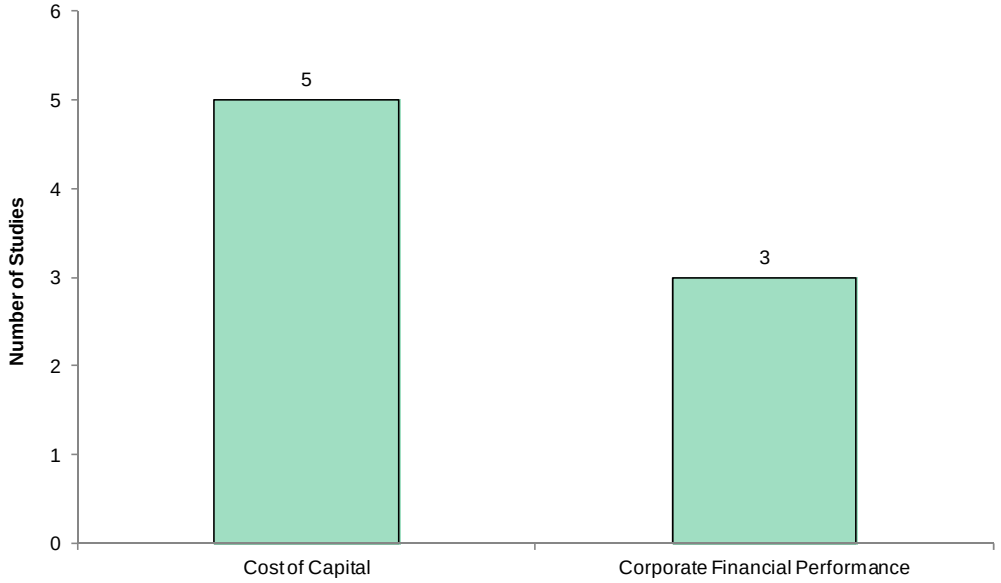
- In terms of any issues we encountered with regard to the robustness of our analysis or of the underlying academic studies, we have found fewer studies that analyze these metrics since the 2008 market disruption. However, correlations between asset classes have tended to narrow, so more recently it may be more complex to unravel what is correlating with what!

In effect, the conclusion is that there are superior risk-adjusted returns for investors, but managers need to take the right approach toward sustainable investing in order to capture these. For corporations, these are important results but the implication of lower cost of debt and equity capital must surely make this a key issue for any CFO, not just the CEO and Sustainability Officer.

Below are the key figures and tables extracted from the main body of the paper.

Summary of Key Findings in Individual Academic Studies – CSR, SRI and ESG

Summary of Individual Academic Studies Analyzing CSR Rating Performance and Correlation with Cost of Capital or CFP at the Securities Level (all positive)



Note: only includes individual academic studies looking at securities (i.e. no literature reviews or meta-studies are included)
Source: DBCCA analysis 2012

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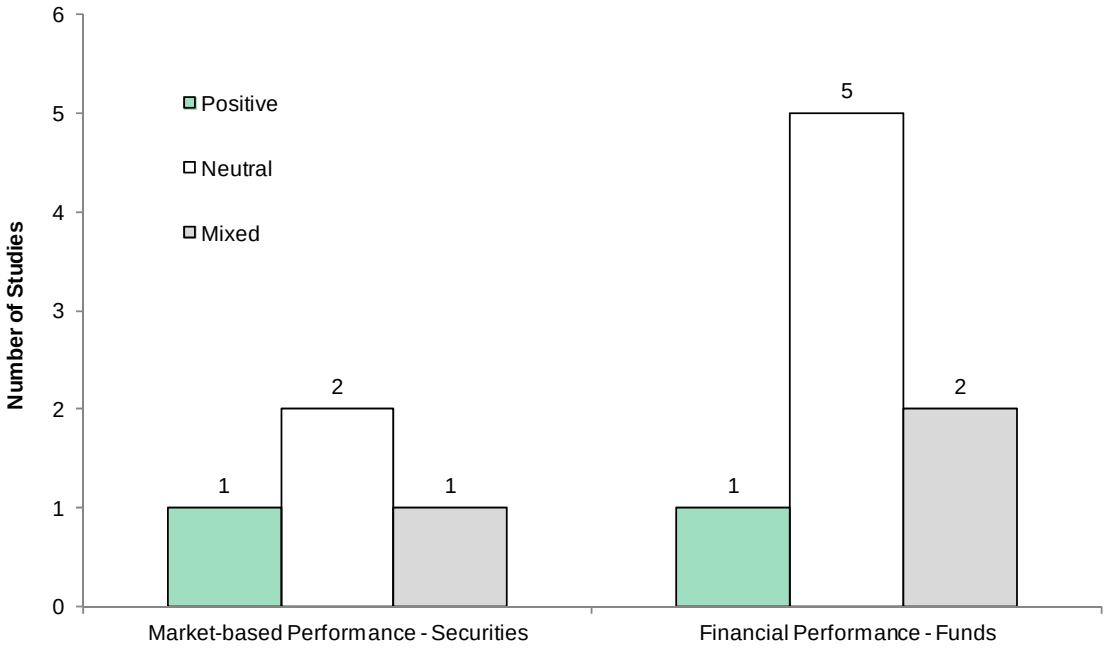
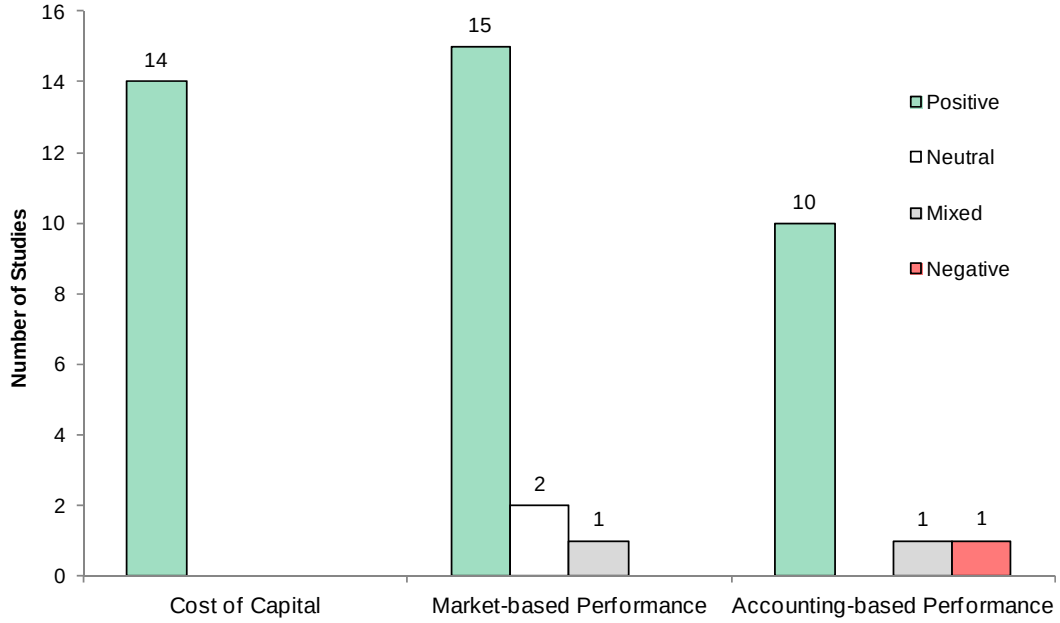
Summary of Individual Academic Studies Analyzing: (1) SRI Ratings and Correlation with Market Performance at the Securities Level (positive, neutral and mixed); and (2) SRI Funds and their Financial Performance



Note: only includes individual academic studies looking at securities and funds (i.e. no literature reviews or meta-studies are included)
Source: DBCCA analysis 2012

Summary of Individual Academic Studies Analyzing ESG Ratings and Correlation with Cost of Capital or Market/Financial Performance at the Securities Level (positive, neutral, mixed and negative)



Note: only includes individual academic studies looking at securities and funds (i.e. no literature reviews or meta-studies are included)
Source: DBCCA analysis 2012

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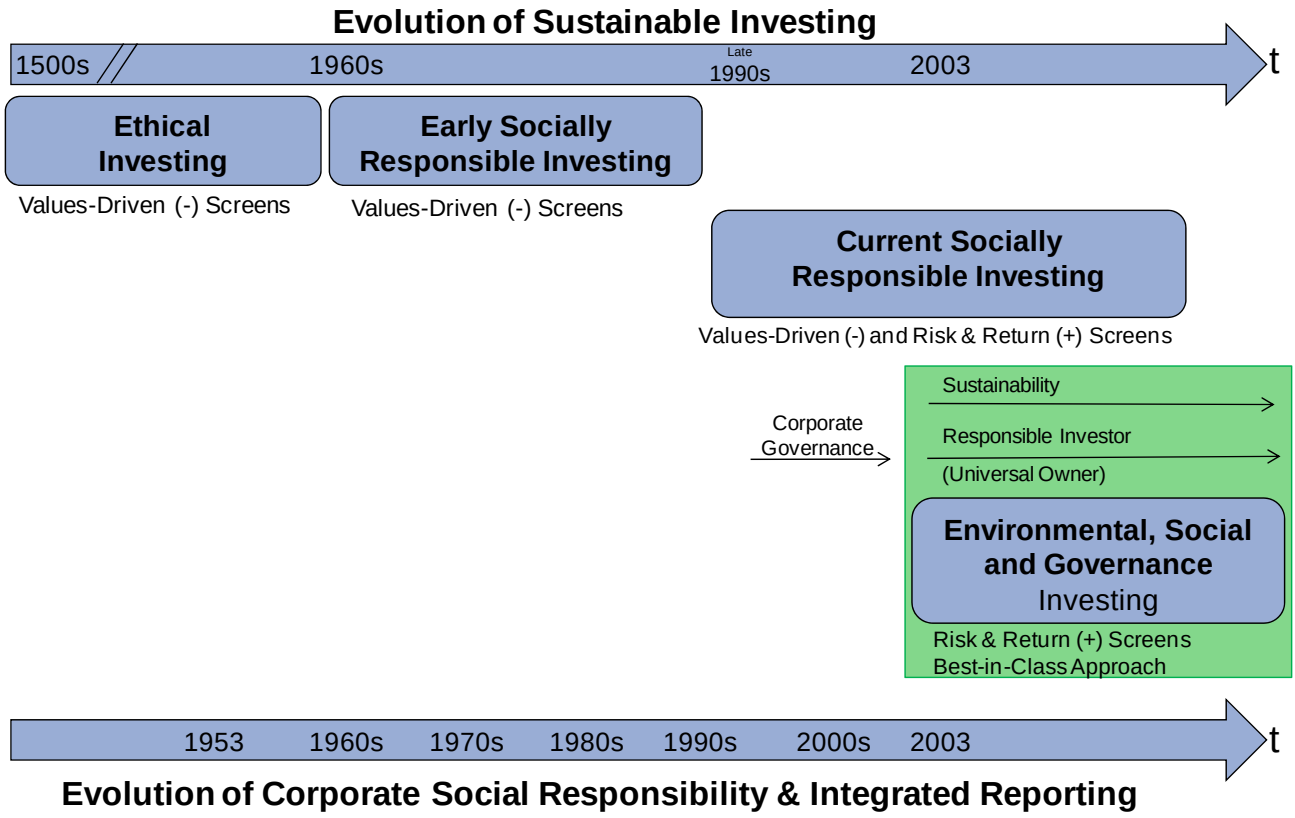
Section I: The Evolution of Sustainable Investing – Key Figures

Timeline of the Evolution of Sustainable Investing



Source: DBCCA analysis 2012

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Section II: Sustainability and Corporate Cost of Capital – Key Figures

Summary of CSR Studies: Correlation to Cost of Capital

CSR Academic Studies	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	5	2006-2011	1991-2007
Security Studies	Negative	0	N.A	N.A

Source: DBCCA analysis 2012

Summary of ESG Studies: Correlation to Cost of Capital

Overall E, S & G and ESG Academic Studies	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	14	2001-2011	1990-2007
Security Studies	Negative	0	N.A	N.A

Notes: Includes all studies looking at E, S or G factors independently; certain studies are also considered in Section III of this paper – see footnotes in subsequent table for greater detail
Source: DBCCA analysis 2012

Summary of ESG Studies – Disaggregated and Aggregate: Correlation to Cost of Capital

ESG Academic Studies Disaggregated	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Governance	Positive	8[3]	2003-2009	1990-2007
Governance	Negative	0	N.A	N.A
Environmental	Positive	5	2001-2011	1992-2007
Environmental	Negative	0	N.A	N.A
Social	Positive	1	2009	1995-2006
Social	Negative	0	N.A	N.A

Source: DBCCA analysis 2012

[3] Bauer et al. (2009) is also included in Section III of this paper: both market and accounting-based returns analyses for G (positive results)

Section III: Sustainability and Corporate Financial Performance – Key Figures

Summary of CSR Studies: Correlation to Corporate Financial Performance

CSR Individual Academic Studies	Correlation of CSP to Higher CFP	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	3	2006-2011	1992-2010
Security Studies	Neutral	0	N.A	N.A
Security Studies	Negative	0	N.A	N.A
CSR **Meta-Studies**	**Correlation of CSP to Higher CFP**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Meta-Studies	Positive	3	2003-2008	1972-2007
Meta-Studies	Neutral	0	N.A	N.A
Meta-Studies	Negative	0	N.A	N.A
CSR **1 Literature Review**	**Correlation of CSP to Higher CFP**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review I	Positive	23	1991-2007	N.A
Literature Review I	Neutral	9	1991-2005	N.A
Literature Review I	Negative	2	1997-2006	N.A

Note: Literature Review: "The Worth of Values: A Literature Review on the Relation Between Corporate, Social, and Financial Performance", Van Beurden & Gossling, Journal of Business Ethics, 2008; date ranges for literature review are indicated as "N.A." (not available) because the author(s) do not list out the date range of the samples of each study included in the review
Source: DBCCA analysis 2012

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Summary of SRI Studies: Correlation to Market-Based Performance

SRI **Individual Academic Studies**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Security Studies	Positive	1	2007	N.A
Security Studies	Neutral	2	2005-2009	1990-2007
Security Studies	Mixed	1	2009	1992-2007
Security Studies	Negative	0	N.A	N.A
SRI **1 Literature Review**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review Part I: Securities	Positive	4	2005-2009	1991-2007
Literature Review Part I: Securities	Neutral	3	2005-2008	2005-2008
Literature Review Part I: Securities	Negative	0	N.A	N.A

Note: Literature review is: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011. Within this literature review there is a review of Securities studies, which looks at 7 studies; and a review of Fund studies which looks at 7 studies. The latter review is discussed in Section IV. See footnotes for double-counting of studies
Source: DBCCA analysis 2012

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Summary of ESG Studies: Correlation to Market or Accounting Based Performance

Overall E, S & G and ESG **Individual Academic Studies**	**Correlation to Higher Market-Based Performance (Returns)**	**Correlation to Higher Accounting-Based Performance**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Security Studies	Positive	-----	15	1995-2011	1984-2009
Security Studies	Neutral	-----	2	2003-2010	1991-2007
Security Studies	Mixed	-----	1	2007	2003-2004
Security Studies	Negative	-----	0	N.A	N.A
Security Studies	-----	Positive	10	1995-2011	1989-2008
Security Studies	-----	Neutral	0	N.A	N.A
Security Studies	-----	Mixed	1	2007	2003-2004
Security Studies	-----	Negative	1	2003	1997-2002
S in ESG **Meta-Studies**	**Correlation to Higher Market or Accounting-Based Performance**		**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Meta-Studies	Positive		1	2011	1991-2009
Meta-Studies	Neutral		0	N.A	N.A
Meta-Studies	Negative		0	N.A	N.A

Note: Includes all studies looking at E, S or G factors independently, in addition to all studies looking at ESG as an aggregate factor; certain studies are considered more than once in each category – see footnotes in subsequent table for greater detail. Meta study is: "Governance mechanisms and bond prices", Cremers, Nair & Wei, Review of Financial Studies, 20 (5), pp.1359-1388, 2007
Source: DBCCA analysis 2012

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Summary of ESG Studies – Disaggregated and Aggregate: Correlation to Market or Accounting Based Performance

ESG Academic Studies and Meta Studies Disaggregated & Aggregated	Correlation to Higher Market-Based Performance (Returns)	Correlation to Higher Accounting-Based Performance	No. of Studies	Date Range of Studies	Date Range of Samples
Governance	Positive	-----	7[4]	2003-2011	1990-2008
Governance	Neutral	-----	1[5]	2008	1997-2004
Governance	-----	Positive	6	2006-2010	1990-2007
Governance	-----	Negative	1[6]	2003	1997-2002
Environmental	Positive	-----	3[7]	2003-2008	1994-2006
Environmental	Neutral	-----	1	2010	1996-2007
Environmental	-----	Positive	2[8]	2001-2010	1989-2007
Environmental	-----	Mixed	1[9]	2008	2003-2004
Social (Meta-Study)	Positive		1[10]	2011	1991-2009
Social	Positive	-----	4[11]	1995-2010	1984-2009
Social	Mixed	-----	1	2011	1992-2008
Social	-----	Positive	2[12]	1995-2006	N.A
Aggregate	Positive	-----	1	2009	1999-2009

Note: See footnotes for double-counting of studies; only studies analyzed are included in this table. Meta study is: "Governance mechanisms and bond prices", Cremers, Nair & Wei, Review of Financial Studies, 20 (5), pp.1359-1388, 2007
Source: DBCCA analysis 2012

[4] Bauer et al. (2009) and Ammann et al. (2010) are included in both market and accounting-based returns analyses for G (all positive results)
[5] Bauer et al. (2003) is included in both market and accounting-based returns analyses for G (neutral and negative results, respectively). Bhagat and Bolton (2008) is included in both market and accounting-based analyses for G (neutral and positive results, respectively)
[6] Bauer et al. (2003) is included in both market and accounting-based returns analyses for G (neutral and negative results, respectively). Bhagat and Bolton (2008) is included in both market and accounting-based analyses for G (neutral and positive results, respectively)
[7] Guenster et al. (2006) is included in both market and accounting-based returns analyses for E (both positive results). Hassel and Semenova (2008) is included in both market and accounting-based returns analysis for E (positive and neutral results, respectively).
[8] Guenster et al. (2006) is included in both market and accounting-based returns analyses for E (both positive results)
[9] Hassel and Semenova (2008) is included in both market and accounting-based returns analysis for E (positive and neutral results, respectively).
[10] Meta-study that analyzes S and market/accounting based returns: "Governance mechanisms and equity prices", Cremers, Martijn & Vinay b. Nair, *Journal of Finance* 6, 2859-2894, 2005
[11] Huselid (1995) is included in both market and accounting-based returns analyses for S (both positive results).
[12] Huselid (1995) is included in both market and accounting-based returns analyses for S (both positive results)

Section IV: Sustainability and SRI Fund Performance – Key Figures

Summary of SRI Studies: Correlation to Market-Based Performance

SRI **Academic Studies**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Fund Studies	Positive	1	2010	2001-2009
Fund Studies	Neutral	5[13]	2002-2011	1990-2010
Fund Studies	Mixed	2	2008-2011	1997-2007
Fund Studies	Negative	0	N.A	N.A
SRI **1 Literature Review: Funds**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review Part II: Funds	Positive	0	N.A	N.A
Literature Review Part II: Funds	Neutral	6[14]	2005-2007	1989-2003
Literature Review Part II: Funds	Negative	1	2005	1963-2001

Note: Literature review is: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011. Within this literature review there is a review of Securities studies, which looks at 7 studies; and a review of Fund studies which looks at 7 studies. The former is outlined in Section III. See footnotes for double-counting of studies
Source: DBCCA analysis 2012

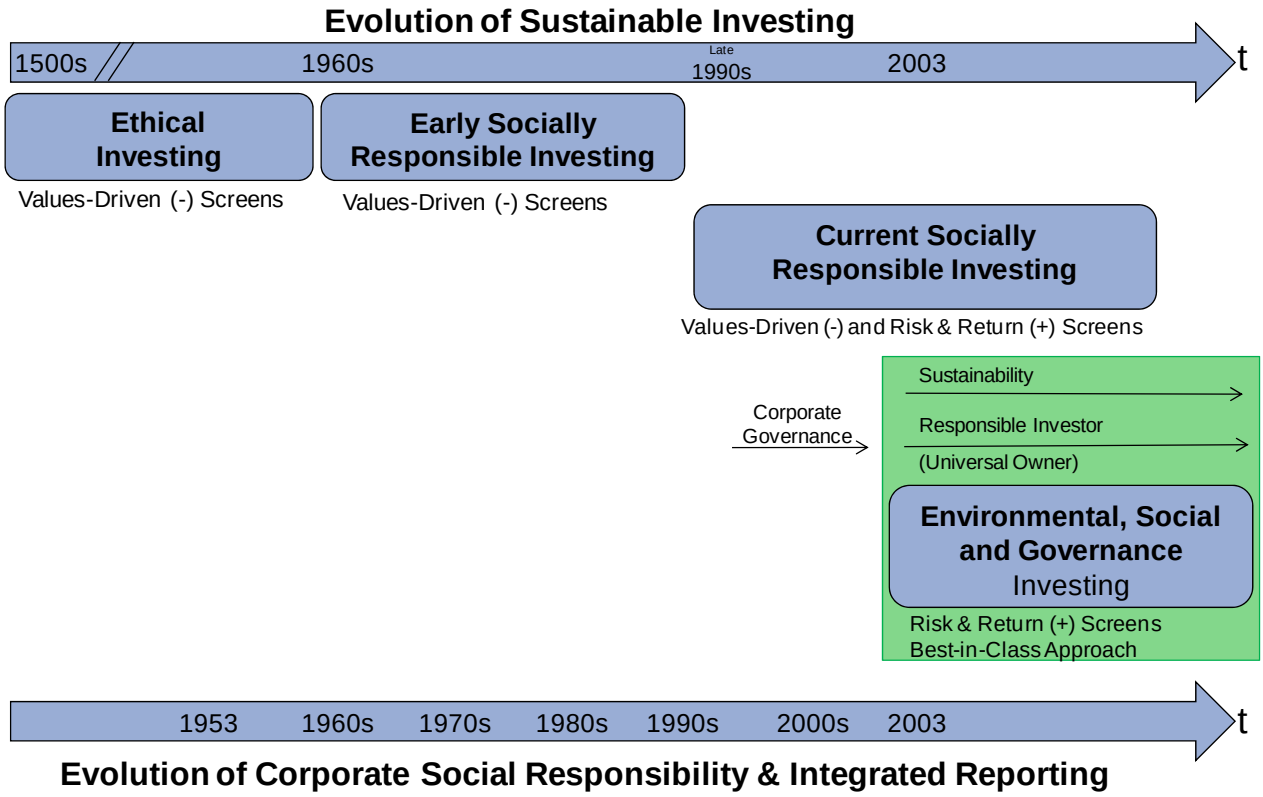
[13] Bauer et al. (2007) is included in this literature review, in addition to as an individual academic study for SRI fund performance (with neutral results for both)
[14] Bauer et al. (2007) is included in this literature review, in addition to as an individual academic study for SRI fund performance (with neutral results for both)

Section I: The Evolution of Sustainable Investing

Introduction

Sustainable Investing has evolved during the last several decades. As a result, it is a field with a substantial number of terms and acronyms, many of which are used interchangeably or defined differently by various market participants. There is therefore substantial potential for confusion when looking at this sector, particularly for asset owners or asset managers considering adopting this type of investing or integrating some of its principles into their investment process. In order to help simplify the topic, Figure 1 below illustrates the evolution of Sustainable Investing (SI), and its related field Corporate Social Responsibility (CSR).

Figure 1: Timeline of the Evolution of Sustainable Investing



Note: See full discussion of Evolution of CSR on pages 22-27
Source: DBCCA analysis 2012

We now set out definitions of these key terms by looking at the evolution of sustainable investing and its corporate counterpart, CSR, both of which interact with each other over time.

The Evolution of Sustainable Investing
Key Terminology and Concepts

Key Terminology and Concepts in the Evolution of Sustainable Investing

Figure 2: Table of Key Terms used in the Field of Sustainable Investing

Concept	Definition	Source
Ethical Investment	Investment philosophy guided by moral values, ethical codes or religious beliefs. Investment decisions include non-economic criteria. This practice has traditionally been associated with negative (or exclusionary) screening.	Mercer, 2007
Values-Driven Screening	Values-based (also referred to as negative or exclusionary) screening is defined as an investment approach that excludes some companies or sectors from the investment universe based on criteria relating to their policies, actions products or services. Investments that do not meet the minimum standards of the screen are not included in the investment portfolio. Criteria may include environmental, social, corporate governance or ethical issues. For example, specific industries or sectors such as weapons manufacturers, or specific companies considered to be poor environmental, social or governance (ESG) executors.	Mercer, 2007
Socially Responsible Investment (SRI)	SRI, as it first emerged, was very similar to ethical investing in that it allowed a level of trade-off between corporate social and financial performance when making investment decisions, and predominantly utilized exclusionary screening. However, modern SRI represents an investment process that seeks to achieve social and environmental objectives alongside financial objectives, utilizing both values-driven, and risk and return screening.	DBCCA analysis 2012; Mercer, 2007
Sustainability	Sustainability or sustainable development refers to the concept of meeting present needs without compromising the ability of future generations to meet their needs. It encompasses social welfare, protection of the environment, efficient use of natural resources and economic well-being.	Brundtland Report, 1987; Mercer, 2007
Risk & Return Screening	Risk and return (or positive) screening is defined as an investment approach that includes non-traditional criteria relating to the policies, actions, products or services of securities issuers. Portfolios are tilted towards stocks that rate well on the nominated criteria, which can include ESG or ethical issues.	Mercer, 2007
Corporate Governance	Procedures and/or processes according to which an organization is directed and controlled. Corporate Governance structure specifies the distribution of rights and responsibilities among the different participants in the organization – such as the board, managers, shareholders and other stakeholders – and lays down the rules and procedures for decision making. National and international best practice standards exist.	OECD, as cited in Mercer, 2007
Universal Owner	A large asset owner who, as a consequence of its size, owns a slice of the whole economy and market through its portfolios. Universal owners adapt their actions with the intent of improving long-term performance by benefiting the whole economy and market in a logical but ambitious extension of sustainable investing. They justify these actions on financial grounds.	Towers Watson, 2011
Environmental, Social and Corporate Governance (ESG)	The term that has emerged globally to describe the environmental, social and corporate governance issues that investors are considering in the context of corporate behavior. No definitive list of ESG issues exists, but they typically display one or more of the following characteristics: (i) issues that have traditionally been considered non-financial or not material; (ii) a medium or long-term time horizon; (iii) qualitative objectives that are not readily quantifiable in monetary terms; (iv) externalities not well captured by market mechanisms; (v) a changing regulatory or policy framework; (vi) patterns arising throughout a company's supply chain; and (vii) a public-concern focus.	Mercer, 2007
Best-in-Class Approach	Investment approach that focuses on companies that have historically performed better than their peers within a particular industry or sector on measures of environmental, social and corporate governance issues. This typically involves positive or negative screening or portfolio tilting.	Mercer, 2007
Responsible Investment	The integration of ESG considerations into investment management processes and ownership practices in the belief that these factors can have an impact on financial performance, in particular over the medium to longer-term. Responsible Investing (RI) can be practiced across all asset classes.	Mercer, 2007; DBCCA analysis

The Evolution of Sustainable Investing
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Sustainable Investment	Here, we define Sustainable Investment as including all forms of Socially Responsible Investing, ESG-oriented investing. In its most developed form we believe it uses ESG factores in a best in class framework similar to the Responsible Investor definition.	DBCCA analysis 2012

Note: Mercer, 2007 report is entitled "The language of responsible investment: An industry guide to key terms and organizations"

Ethical Investing (Values-Driven): 1500s Onwards

Negative screening, or deliberately opting not to invest in companies or industries that do not align with personal values, was the earliest and most popular form of socially-oriented – or socially responsible – investing (also known as "SRI") up until the mid-1990s. The investment approach is traditionally rooted in the practices of religious believers (of Judaism, Christianity, and Islam) who sought to align their investments with their faiths – for example, Quakers during the 1500s and Churches during the 1920s that advocated against gambling, tobacco, and alcohol. The modern institutionalization of ethical exclusions arguably began at the height of the Vietnam War in 1971 with the establishment of the Pax World Fund, the first ethical mutual fund. At that time, the Pax World Fund offered an alternative investment option for those opposed to the weapons production of nuclear and military arms. In the 1970s, the movement became increasingly globalized through the "Sullivan Principals"[15], which underpinned an international effort that sought to selectively divest in South Africa, managed at the time under apartheid.

Early Socially Responsible Investing (Values-Driven): 1960s – Mid 1990s

Founded largely out of religious beliefs, early SRI is virtually indistinguishable from ethical investing in terms of the type of values-driven investment screening used. However, SRI emerged as a new concept and investment strategy in its earliest form in the 1960s from the foundations of ethical investing, and quickly became the "catch-all" term for ethically-oriented investing that continues to this day. **During this earlier period (1960s to mid-1990s), SRI referred to a values-based or exclusionary investment approach** that primarily took account of corporate social, ethical and environmental behavior and particularly after the 1987 Brundtland Commission[16], the resultant "sustainability" of a company. Mainstream popular and political support for sustainable development gained further momentum following the UN's 1992 Conference on Environment and Development (UNCED), which was held in Rio de Janeiro.

Current Socially Responsible Investing (Values-Driven, and Risk & Return): Late 1990s – Present

As SRI developed into its modern form, it shifted further away from an emphasis on ethics and toward incorporating environmental, social and corporate governance factors into investment decisions, thereby becoming an investment strategy that also explicitly seeks investment returns. In general, **current SRI employs a mix of negative (values-driven) and positive (risk and return driven) screening techniques to maximize financial return within a socially aligned investment strategy**. Common techniques currently utilized by modern SRI investors are as follows: "ethical negative screening, environmental/social negative screening, positive screening, community and social investing, best-in-class, financially-weighted best-in-class, sustainability/climate change themes, constructive engagement, shareholder activism, integrated analysis, and norms-based screening"[17]. The key development between early and modern SRI has been the growth in shareholder activism and introduction of positive-screening investing, which allows investors to express their values without compromising portfolio diversification or long-run performance. In this way, SRI ultimately amalgamates social,

[15] The Sullivan Principles are the names of two corporate codes of conduct, developed by the African-American preacher Rev. Leon Sullivan, promoting corporate social responsibility. The original Sullivan Principles were developed in 1977 to apply economic pressure on South Africa in protest of its system of apartheid. The principles eventually gained wide adoption among United States-based corporations. The new Global Sullivan Principles were jointed unveiled in 1999 by Rev. Sullivan and United Nations Secretary General Kofi Annan. The new and expanded corporate code of conduct, as opposed to the originals' specific focus on South African apartheid, were designed to increase the active participation of corporations in the advancement of human rights and social justice at the international level. Source: Wikipedia

[16] The 1987 publication of the World Commission on Environment and Development headed by Brundtland coined the term sustainable development and defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," and must entail "a process of change in which the exploitation of resources, *the direction of investments*, the orientation of technological development, and institutional change are made consistent with future as well as present needs". Source: Wikipedia

[17] "After the Crunch: The Future of Sustainable Investing and Carbon Finance", Krosinsky, C. & Robins, N., *Carbon Finance Speaker Series at Yale*, April 7 2009

environmental and traditional (economic) firm valuation into a "Triple Bottom Line"[18]. This much cited concept that ecological, social and economic criteria must be met before organizational success can be achieved paved the way for the "Responsible Investor," who considers financial – as well as environmental, social and governance – factors when valuing companies.

ESG / Responsible Investing (Risk & Return, Best-in Class): 2003 – Present

In the early 2000s **there emerged a renewed interest and desire for a more concrete definition of SRI to include corporate governance, in addition to financial, social and environmental factors.** Academics and investors were placing increasing emphasis (particularly in the US) on the importance of good corporate governance in a company's risk and return profile – a trend partly driven by Moskowitz's classic analysis of "100 Best Companies to Work for" (1998)[19] and prominently manifested in the passage of the Sarbanes-Oxley Act in 2002[20]. Institutional investors, in particular, were increasingly interested in the risks and opportunities presented by the extra-financial performance of a company, given the growing perception of large asset owners as "Universal Owners", tied to the performance of markets or economies as a whole.

Also crucial to this new definition was the need for a more risk and return (or profit) – driven focus to this type of investing, given the longstanding debate surrounding the underperformance (or not) of SRI in the 1980s to the early 21st century. It was at this time that there emerged a new, risk and return driven form of SRI, soon to be coined as "Responsible Investing".

In order to formalize and define this emerging trend, in 2003 the UNEP Finance Initiative (UNEP FI) formed an Asset Management Working Group and commissioned 11 reports from 9 mainstream research institutions (due in 2004) to study the financial materiality of Environmental, Social and Governance (ESG) issues to securities valuation – a key finding being **"agreement [among analysts] that environmental, social and corporate governance issues affect long-term shareholder value… [and] in some cases those effects may be profound"**[21]. Two years later, in April 2006, the UN Secretary General Kofi Annan launched the Principles for Responsible Investing, which mainstreamed SRI, coined a new term for risk and return–driven investors ("Responsible Investors"), and refined the definition as those investors who incorporate ESG factors into their investment process.

Sustainable Investing

In this paper, we use the term "Sustainable Investing (SI)" as a "catch-all" term to refer to all forms of Socially Responsible Investing, ESG-oriented investing (which is more similar to a CSR approach), and Responsible Investing. **The most modern wave of Sustainable Investors are Responsible Investors focused on best-in-class ESG – often institutional investors (who sometimes also adhere to the concept of the "Universal Owner") –, and who seek a sustained competitive advantage and outperformance, partly by evaluating a company's overall management ability to adapt to a dynamic business climate and create enduring value.** This is often in terms of a best-in-class approach.

Or put another way: "While ethical or [early] socially responsible investing is driven by the values of the investor (from the inside out)", responsible investing "is addressing changing external realities (from the outside in)."[22] These types of investors also typically exhibit active ownership, which entails shareholder engagement with the corporations they invest in, rather than just negative screening techniques.

[18] Coined by John Elkington in his 1998 book "Cannibals with Forks: the Triple Bottom Line of 21st Century Business"
[19] This report asserted that corporate governance maximized productivity, ensured corporate efficiency and led to the sourcing and utilizing of superior management talents.
[20] The corporate scandals in the early 2000s of companies such as Enron and Worldcom led to the politically significant passage of the Sarbanes-Oxley Act (2002). The Act created or enhanced the standards of financial reporting and disclosures among public companies, and it called for tighter accountability measures within firms.
[21] Source: "The Materiality of Social, Environmental and Corporate Governance Issues to Equity Pricing", *UNEP FI*, June 2004. Other 2 key findings were as follows: (i) there exist difficulties in comparative analysis due to the range of reporting practices for ESG; and (ii) clear government positions (i.e. policy) greatly aids financial research into ESG issues.
[22] "After the Crunch: The Future of Sustainable Investing and Carbon Finance", Krosinsky, C. & Robins, N., *Carbon Finance Speaker Series at Yale*, April 7 2009

Development of Corporate Social Responsibility (CSR): 1950s – Present

Figure 3: Table of Key Terms Related to Corporate Social Responsibility and Shareholder Engagement

Concept Name	Definition	Source
Corporate Social Responsibility	Approach to business which takes into account economic, social, environmental and ethical impacts for a variety of reasons, including mitigating risk, decreasing costs, and improving brand image and competitiveness. This approach is sometimes implemented by means of a comprehensive set of policies and procedures integrated throughout a company, encompassing a wide range of practices, including: corporate governance, employee relations, supply chain relationships, customer relationships, environmental management, philanthropy and community involvement.	Mercer, 2007
Stakeholder	Individuals or organizations with an interest in the actions and impacts of an organization. They may be customers, suppliers, shareholders, employees, communities, members of special interest groups, non-governmental organizations, or regulators.	Mercer, 2007
Active Ownership	The voting of company shares and/or the engaging of corporate managers and boards of directors in dialogue on ESG issues as well as on business strategy issues. Increasingly pursued in an effort to reduce risk and enhance shareholder value. Can also be referred to as "Shareholder Activism".	Mercer, 2007
Shareholder Engagement	The practice of monitoring corporate behavior and seeking changes where appropriate through dialogue with companies or through the use of share ownership rights, such as filing shareholder resolutions. Shareholder engagement is often employed in attempts to improve a company's ESG performance.	Mercer, 2007
Proxy Voting	The delegation of voting rights from entitled voters who do not attend shareholders' meetings to delegates who vote on their behalf. Proxy voting allows shareholders to exercise their right to vote without committing the time involved in actually attending meetings. Proxy voting policies can include specific guidance on ESG and ethical decisions.	Mercer, 2007
Corporate Social Performance	A business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships.	Wood, 1991:693[23]
Corporate Financial Performance	A term widely used within academia to refer to the financial or economic performance of a company. In general, academic studies have tended to focus on either financial accounting measures (for example, Return on Assets or Return on Equity) or economic measures (usually a company's stock performance) to measure, rank and compare the CFP of different companies.	DBCCA analysis 2012
Corporate Citizenship	A term used to describe a company's role in, or responsibilities towards society. For this reason it is sometimes used interchangeably with corporate social responsibility, although this concept is extended by some to refer to the political activities – and perhaps even rights – of a company.	DBCCA analysis 2012
Integrated Reporting	A growing practice of corporate reporting that demonstrates the linkage between an organization's financial performance in relation to environmental, social, and governance (ESG) factors that underlie the organization's core activities. By "integrating" financial and non-financial data, Integrated Reporting can help businesses take more sustainable decisions and enable investors and other stakeholders to transparently understand an organizations true performance.	DBCCA analysis 2012
Triple Bottom Line	A holistic approach to measuring a company's performance on environmental, social and economic issues. The triple bottom line focuses companies not just on the economic value they add, but also on the environmental and social value they add or destroy. This concept is frequently utilized in CSR or sustainability reporting.	Mercer, 2007; DBCCA analysis 2012

[23] "Corporate social performance revisited", Wood, *Academy of Management Review*, 16(4): 691-71, 1991

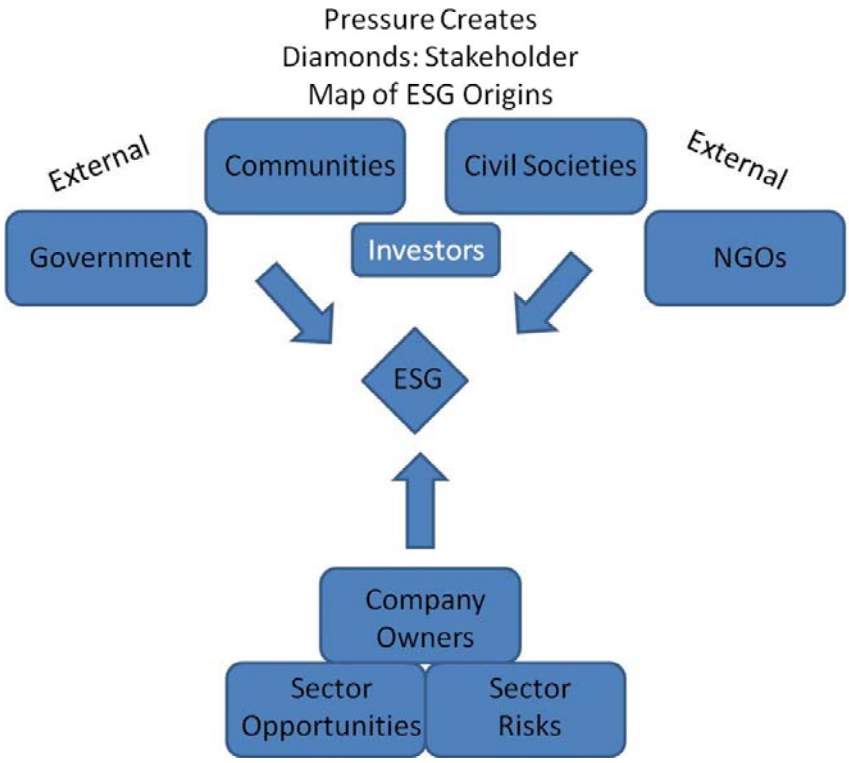
Corporate Shared Value	Concept that companies need to develop a principle of shared value, which "involves creating economic value in a way that also creates values for society by addressing its needs and challenges." The key to this new approach is placing shared value at the center of what companies do (hand-in-hand with profits), as opposed to the periphery, thereby reconnecting company success with social progress.	Porter and Kramer, 2006[24]
Sustainability	Sustainability or sustainable development refers to the concept of meeting present needs without compromising the ability of future generations to meet their needs. It encompasses social welfare, protection of the environment, efficient use of natural resources and economic well-being.	Brundtland Report, 1987; Mercer, 2007

Note: Mercer, 2007 report is entitled "The language of responsible investment: An industry guide to key terms and organizations"

Corporate Social Responsibility and Shareholder Activism

As previously outlined in Figure 1, Corporate Social Responsibility has evolved over time alongside the evolutionary phases of SI (ethical investing, early SRI, current SRI, and responsible/ESG investing). In many senses it is the corporate side of, or response to, the evolution of Sustainable Investing, driven by a combination of civil society, government, NGOs and investors – the latter tending to "push" corporate attention to this issue via shareholder engagement, active ownership and proxy voting. Efforts such as Moxy vote and the As You Sow Foundation are just a few examples of coordinating bodies that help raise resolutions and proxy votes for ESG/CSR issues (please see Appendix I for some studies that review the impact of shareholder activism). The evolution of CSR though, has not though been entirely a "push" phenomena, with companies themselves identifying the risks and opportunities of effectively managing and reporting environmental, social and governance factors. The confluence of these factors is illustrated in Figure 4 below.

Figure 4: CSR – a Push or Pull Phenomena?



Source: DBCCA analysis 2012

[24] "How to reinvent capitalism – and unleash a wave of innovation and growth", Porter, M. & Kramer, M., *Harvard Business Review*, Jan-Feb 2011

The Evolution of Sustainable Investing
Key Terminology and Concepts

First identified in the 1950s, CSR emerged as a concept by which companies *should* act in order to fulfill their duty to society. As time has passed, CSR (like SRI) has expanded beyond a pure focus on philanthropy or values, and become more focused on the potential risk mitigation and/or enhanced returns from good corporate citizenship and transparent reporting – as well as the importance of a comprehensive CSR strategy to reputation and brand. The following describes the evolution of contemporary CSR by decade – although it should be noted that as with SI, this is a field with multiple terms and acronyms that are variously used and defined. As Green and Peloza stated in 2011: "CSR has historically been defined by wide, yet vague, boundaries, with even researchers resorting to at least 39 unique metrics to measure CSR in empirical studies."[25]

Evolution of Key CSR Concepts: Shareholder Activism, Corporate Social and Financial Performance, and Corporate Citizenship

(a) **1950s**: Deemed the "Father of CSR", Howard Bowen in his 1953 book "Social Responsibilities of the Businessman"[26] first coined the phrase CSR and defined these responsibilities as: "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society."

(b) **1960s**: Equating social responsibilities with social power, Davis (1960)[27] asserted that social responsibility can also bring long-run economic gain to a firm. In the same year, Frederick argued that corporate resources must be used for broad social ends. In 1967, Walton[28] added that the essential ingredient of CSR is volunteerism. Clearly, early-CSR (like early SRI) was focused on corporate philanthropy and community relations. However, at the same time as early-CSR was emerging, its broader or philanthropic application was being disputed by Nobel laureate Milton Friedman, who believed that maximizing shareholder value (i.e. profitability) is the *only* business objective: "there is one and only social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game."[29]

(c) **1970s**: Despite this opposition from Friedman and his followers, Johnson (1971) helped CSR evolve further by acknowledging its contribution to long-run profit maximization as well as its role in "utility maximization," whereby multiple goals beyond profit maximization are achieved by a firm. Moreover, the Committee for Economic Development (CED) proposed in 1971 that firms must serve the needs of society in order to maintain their license to operate. In the early 1970s CSR as a term moved came into common use, particularly as many multinational corporations were being formed. Hand-in-hand with this concept came the term "stakeholder", whereby a corporation had multiple individuals or organizations beyond just shareholders (for example, communities, customers and regulators) with an interest in its actions and impacts.

(d) **1980s**: The idea of corporate owners beyond shareholders was further solidified in the mid-1980s by R. Edward Freeman's influential book "Strategic Management: A Stakeholder Approach". This initiated a field of research on "stakeholder theory", whose proponents question the traditional view of a stakeholder as being only those who legally own stock in a firm, and argues that there are other parties with a corporate interest – for example, government bodies, trade unions, associated corporations and the general public – and who therefore warrant consideration by corporations. This idea created two shifts that went hand-in-hand: (i) a push by stakeholders for greater transparency with regard to company's performance beyond pure financial measures; and (ii) greater disclosure by company's of their extra-financial activities – in the form of CSR reporting. Stakeholders (including shareholders) thereby adopted a more active role in "policing" corporate behavior. Both leading and documenting these shifts, academics during the 1980s further augmented CSR theory by advances in empirical research into social responsiveness, corporate social performance

[25] As cited in "Corporate Social Responsibility: Evolution of a Definitional Construct", Carroll, *Business and Society*, 1999
[26] Ibid
[27] Ibid
[28] Ibid
[29] As cited in "Drivers of Long-Term Business Value: Stakeholders, stats and strategy", Koehler & Henspenide, *Deloitte*, 2012

(CSP), public policy, business ethics, and stakeholder theory and management. Around this time CSP and corporate financial performance (CFP) also emerged as defined concepts – particularly in the academic literature – around which to discuss the implications of CSR on corporate performance. This was particularly useful for investors examining the relationship(s) between CSR and a company's financial performance in order to determine the potential economic value-add in SRI investing. Academics began analyzing the performance of both funds and securities active in this type of investing (for a full discussion of this please see Sections II, III and IV of this paper), although these analyses were still very preliminary during this time period as this was a new, niche sector and there was a shortage of meaningful historical data.

(e) **1990s**: Stakeholder activism, proxy voting and corporate disclosure on CSR issues all developed further during the 1990s, as corporations and stakeholders began to increasingly recognize the potential value associated with the extra-financial performance (or CSP) of a company. Sustainability, as it applied to both civil society and also to corporations, became an increasingly discussed topic and many investors began analyzing potential investments through the lens of a company's operations and profitability "sustainability" over the medium to long term. As previously mentioned the phrase "Triple Bottom Line" emerged in 1998 (coined by John Elkington in his famous book "Cannibals with Forks: the Triple Bottom Line of 21st Century Business") to capture the notion that ecological, social and economic criteria must be met before organizational success can be achieved. Meanwhile, business leaders were also engaging in this topic – the Caux Round Table (CRT), for example, launched its CRT Principles for Business in 1994, following a series of dialogues during the late 1980's and early 1990's among "an international network of principled business leaders working to promote a moral capitalism". These Principles articulate a comprehensive set of ethical norms for businesses operating internationally or across multiple cultures, with a goal of embodying the aspiration of principled business leadership. Within academia this decade also saw further research on the link between CSP and CFP, stakeholder theory, as well as newer concepts such as business ethics theory and corporate citizenship.

Contemporary CSR: By the turn of the century, the criteria of CSR – now referred to here as **contemporary CSR – expanded to formally encompass ESG, corporate citizenship and economic responsibility**. According to Mercer, contemporary CSR policies and procedures include "corporate governance, employee relationships, customer relationships, environmental management, philanthropy and community involvement." Despite intensifying regulations, much of corporate activity in CSR remains voluntary and goes beyond what is legally required by a firm. Nonetheless, some companies are now producing integrated Annual Reports that include financials with evaluations of E, S and G performance. Much of this shift is driven by a desire to reflect and communicate the way business is managed and establish a common dialogue across all different stakeholders. However, it can also have the effect of attracting investors who incorporate ESG factors into their evaluations of companies, as well as a desire to offer greater transparency, particularly if a company is making particular efforts in improving its ESG performance. Indeed, in a recent study conducted by MIT Sloan Management Review, **two-thirds of companies view sustainability as a necessary component to being competitive in today's marketplace, and a third believe that their sustainability activities and initiatives are contributing to their corporation's profitability[30]. It is only sensible therefore that a growing number of companies are both measuring and reporting on their ESG performance.**

It would be remiss, however, to ignore the fact that there continues to be debate regarding the business objectives of firms, with some continuing to reference Friedman's arguments for shareholder interests above all else and to challenge the stakeholder-centric (i.e. social responsibility) view of the corporation. Michael Jensen takes a different perspective, arguing for a focus on *long-term performance*, which he argues then resolves the dispute between these differing (stakeholder vs. shareholder -centric) schools of thought: "it is obvious that we cannot maximize the long-term market values of an organization if we ignore or mistreat any important constituency."[31] In other words, that a business should get the most out of society's limited resources, while also returning greater value to society – in essence, a win-win situation! This idea of long-

[30] "Sustainability Nears a Tipping Point", *MIT (SMR) Research Report*, January 2012
[31] As cited in "Drivers of Long-Term Business Value: Stakeholders, stats and strategy", Koehler & Henspenide, *Deloitte*, 2012

term business objectives aligns well with the perspective of many investors who see value in sustainability, particularly if investing over the medium- to longer-term.

More recently as well, **Michael Porter and Mark Kramer have added to current thinking around aligning stakeholder and corporate perspectives, through development of a new concept known as Corporate Shared Value (CSV)** – first outlined in a 2006 Harvard Business Review article "Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility". The reasoning behind CSV is that companies are currently trapped in a narrow and "outdated approach to value creation", which focuses on "optimizing short-term financial performance in a bubble while missing the most important customer needs and ignoring the broader influences that determine their longer-term success." Porter and Kramer argue that companies need to take back the lead through the principle of shared value, which "involves creating economic value in a way that *also* creates values for society by addressing its needs and challenges." The key to this new approach is placing shared value at the center of what companies do (hand-in-hand with profits), as opposed to the periphery, thereby reconnecting company success with social progress. There already exist some corporate leaders in this approach, but the shift towards CSV is still very much in its genesis. As Porter and Kramer state: "realizing [CSV] will require leaders and mangers to develop new skills and knowledge – such as a far deeper appreciation of societal needs, a greater understanding of the true bases of company productivity, and the ability to collaborate across profit/nonprofit boundaries." And government must also play its part by learning "how to regulate in ways that enable shared value rather than work against it."

Emergence of Integrated Reporting

The recent global financial crisis has demonstrated to investors that current financial and sustainability reporting frameworks do not provide enough relevant information to the public and that greater transparency between corporations and investors is needed[32]. In particular, there is a need to accurately and transparently report the challenges and interdependencies between a firm's ESG information and financial performance. Integrated Reporting, or IR, is an evolutionary step forward that creates a more established link between financial and non-financial ESG information, and also represents a shift away from how corporates traditionally interpreted CSR and its reporting (with a focus on philanthropy and ethics) towards reporting of specific E, S and G metrics. In an integrated report financial information is combined with non-financial information in such a way that shows their quantified impact on each other using established guidelines, standards and key performance indicators, or KPI's – which are unique to each firm.

Globally, there are numerous NGO's that provide these standards and guidlelines to corporations. Among these standard-setting organizations, there are three key leaders that investors should be familiar with: the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), and the Sustainability Accounting Standards Board (SASB). GRI is arguably the most important global organization in this domain and is recognized by many to be the global standard in nonfinancial reporting. SASB, on the other hand is strictly US based, industry-specific and aims to disclose all material non-financial activity within the SEC's 10-K form – the SASB guidelines are still under development at present. Finally, the IIRC, which is also currently being established; collaborates with leading global frameworks such as GRI to establish a set of globally accepted integrated reporting frameworks that will be beneficial for both investors and corporations. IIRC argues that there are numerous benefits for corporations that practice integrated reporting, which are briefly dicussed below:[33]

- **Reported information will be better aligned with investor needs.**
- **More accurate non-financial information will be available for data vendors.**
- **Higher levels of trust can be established with key stakeholders and shareholders.**
- **Better resource allocation decisions, including cost reductions for organizations.**

[32] "One Report: Integrated Reporting for a Sustainability Strategy", Eccles, R. & Krzus, M, *Wiley &Sons*, pp.24-25, 2010
[33] Extracted directly from "Discussion Paper: Towards Integrated Reporting: Communicating Value in the 21st Century", *IIRC*, 2011. Link: http://theiirc.org/wp-content/uploads/2011/09/IR-Discussion-Paper-2011_spreads.pdf

- **Enhanced risk management.**
- **Better identification of opportunities for improvement in organizational activity.**
- **Lower reputational risk.**
- **Lower cost of, and better access to capital because of improved disclosure to stake/shareholders.**
- **Development of a common language and greater collaboration across different functions within organizations.**

We believe that understanding global reporting frameworks allows us to have greater transparency in market interest and activity. Recent research by Eccles, Krzus, and Serafeim (2011)[34] reveals a large market interest in non-financial information. The authors document that the aggregate market level, there is greater interest in environmental and governance information than in "social" information. U.S. investors are more interested than their European counterparts in governance and less interested in environmental information. Equity investors are interested in a wider range of nonfinancial information than are fixed income investors. And whereas sell-side analysts are primarily interested in greenhouse gas emissions, money managers tend to focus on a broader set of metrics. Similarly, pension funds and hedge funds have shown interest in more nonfinancial metrics than insurance companies. Moreover, according to a recent organizational survey from Institut RSE, the five important topics for inclusion in GRI's newly developing G4 guidelines (which can include financial and non-financial information) are all ESG-related.[35]

- **Business Ethics**
- **Greenhouse Gas Emissions**
- **Eco-innovation**
- **Life Cycle Assessment (LCA)**
- **Water**

The aforementioned analysis not only displays what is important within the G4 guidelines, they also reflect which non-financial categories the market views as important for disclosure within a firm's annual report. The significance of measuring and quantifying ESG impact data was shown in 2009, when Microsoft, Cisco and Oracle were removed from the NASDAQ Global Sustainability Index, because they failed to disclose 2 out of 5 quantitative environmental metrics that adhered to GRI's guidelines[36].

Clearly, development of the financial market's interest in integrated reporting is vital to the future growth and development of this practice. However, since ESG disclosure is still voluntary and only loosely validated by many market players, the data can be inconsistent and incomparable across companies. Mainstream organizations such as SASB and IIRC will take time to develop robust industry-wide national and/or global standards – and it will take more time for these standards to be put into practice. However, the biggest challenge in integrated reporting relates to a concept known as "materiality." Materiality referes to the degree to which financial results are impacted by climate change; the environment, health and safety; water usage; and related risks and opportunities, which are not relevant to all firms across all sectors. Therefore, it is extremely difficult to establish a set of reporting standards that are globally accepted. However, there are several organizations working on this issue at present and integrated measurement of ESG factors and their financial impacts and their reporting is expected to gain growing traction as the materiality of ESG factors becomes increasingly evident.

[34] "Market Interest in Nonfinancial Information", Eccles, Serafeim & Krzus, *Journal of Applied Corporate Finance*, 23: 113–127, 2011
[35] "RSE Survey – Giving Value to Extra-Financial Information: How to bridge the gap between issuers and users of CSR data in growing complexity", *Institut RSE*, IRSE/ Les études de veille n° 4/, 2012
[36] "From Transparency to Performance. Industry-Based Sustainability Reporting on Key Issues", Lydenberg S. Rogers, J. Wood, D, *The Hauser Center for Nonprofit Organizations at Harvard University*, 2010

Section II: Sustainability and Corporate Cost of Capital

Introduction

Section II of this paper reviews a selection of 19[37] leading academic studies and analyzes the relationship between:

1. **A company's commitment to CSR, as measured by Corporate Social Performance (CSP), and its associated cost of capital**;
2. **The performance of a company with regard to Environmental, Social and Governance (ESG) factors and its associated cost of capital.**

Please note here that we found no studies looking at Socially Responsible Investing (SRI) and cost of capital.

If investors believe that better sustainability performance leads to lower risk then there should be a positive correlation between a corporation's sustainability performance, **and we look to see evidence of this historically with:**

- **Lower Cost of Capital – lower risk**
  - Cost of equity capital as measured by the *ex ante* or implied cost of capital (ICC), which is a measure of a firm's fundamental risk and a reflection of a firm's need to increase earnings as compensation for that risk.
  - Cost of debt capital, as measured by the cost of loans or bonds issued.

Our extensive investigation into the existing body of academic studies in the field of Sustainable Investing yielded several key results, summarized below:

- **Strong corporate commitment to CSR (high CSP) is positively correlated to a lower cost of capital – debt (loans and bonds) and equity. This finding is evident in *all* the studies we analyzed (with no neutral or mixed results evident).**
- **Strong corporate commitment to ESG (or E, S or G) is positively correlated to a lower cost of capital. Again, this finding is evident in *all* the studies we analyzed.**
- **The materiality of ESG is most accurately observed upon disaggregating it into individual components:**
  - **The governance factor (G), studied most extensively at first, has been strongly linked to a reduced cost of debt and equity capital since the early 2000s**. We thus posit that much of the positive impact generated from this factor may already be priced into the market since its relatively early integration into mainstream investing considerations. As an indicator of what is included in G, the most common governance factors generally looked at in the studies analyzed are as follows: transparency of board structure to share/stakeholders; anti-takeover provisions (CEO turnover); management performance relative to employees; strong shareholder/stakeholder protection commitment by company; and legal protection for investors and transparency of activities through voluntary disclosure.
  - **The environmental factor (E) has also demonstrated strong correlation to reduced cost of debt and equity capital**. We thus hypothesize that E is expected to offer even larger stock return potential for investors via "first mover advantage", as early recognition of the materiality behind environmental concerns will help investors transform environmental legislation into opportunities. As an indicator of what is included in E, the most common governance factors generally looked at in the studies analyzed are as follows: environmental compliance (on a legal level); Environmental Health and Safety (EHS) for employees; genuine interest in society, the natural environment, and climate change; reporting on environmental

[37] Note that one study included in this section is separately analyzed in three different sub-sections of the report: Derwall, & Verwijmeren, "Corporate social responsibility and the implied cost of equity capital", *Working Paper,* 2007

impacts and assuming responsibility for actions; internalization of externalities; and amount of ethical investments undertaken by a company.

- **The social factor (S), sometimes (and incorrectly) confused with the overall SRI sector, may be the most difficult to quantify and has been subjected to the least academic and investor attention**. Academic studies to date have found a mixed link between social performance and a company's cost of capital. We believe the S factor deserves increasing academic and investor interest as its material relevance to the final output of a firm is increasingly relevant (i.e. human capital, healthy and safety, license to operate in a community) and social considerations may well offer potential for generating alpha. As an indicator of what is included in S, the most common governance factors generally looked at in the studies analyzed are as follows: employee relationship with management; employee diversity; employee rights; external stakeholder rights and involvement; and community involvement.

Another key observation noted from the review of academic studies is that few of the sample periods extend beyond 2008, and thus our thesis (risk-return imbalance) may not be detected as frequently in current market conditions due to the global financial crisis.

Our Framework for Analyzing Studies:

(1) It is first critical to breakdown studies into their specific focus areas, in order to see what is working in the CSR, SRI and ESG worlds, as analyzing them all together could be misleading. We found no SRI studies looking at Cost of Capital, and as would be expected, all the studies we looked at covered securities only (i.e. no fund studies). We also found no meta studies or literature reviews looking at this specific topic.

(2) We organize these types of academic studies by their specific focuses, namely CSR and ESG – although it is worth noting here that many of the CSR studies examine the same or similar metrics as the ESG studies, except that the ESG studies look at E, S or G separately, while the CSR studies mostly look at a company's performance in all three of these areas.

(3) We show the date range of the studies themselves, and the underlying sample date ranges.

(4) We subsequently divide these studies on the basis of their findings – whether they show positive, neutral, mixed or negative correlation to a lower cost of equity capital (ICC) and lower cost of debt capital (loans and bonds). It should be noted here that a neutral study is defined as one without a statistically significant finding, while a mixed study is one that has both positive and negative findings (for example, between portfolios of stocks), despite using the same metrics.

By examining the major conclusions of each academic study, and quoting from the abstracts or texts, we are able to highlight the contributions of specific elements of sustainability to specific elements of risk, as measured by corporate cost of capital.

It is important to note that we address correlation here, not causality. In general, the statistical studies we have collected cannot or do not establish causality in the above relationships with any degree of confidence. Further, only several studies look to identify and test to what extent other factors mediate the relationship between social performance and financial performance (for example, credit ratings, reputation, etc.). In addition, given the relatively long-term nature of E, S and G factors – in terms of corporate implementation, recognition by investment analysts, and actual effect on a company's risk-return profile, and the impact of corporate behavior on stakeholders – it is important to recognize the potential for a time lag in many of the data sets.

Nonetheless, our analysis of the academic studies overwhelmingly suggests the value of ESG in the identification of securities lower cost of equity and/or debt capital.

Sustainability and Corporate Cost of Capital
Summary Tables of Academic Studies

Summary Tables of Academic Studies

Figure 5: Summary of CSR Studies: Correlation to Cost of Capital

CSR Academic Studies	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	5	2006-2011	1991-2007
Security Studies	Negative	0	N.A	N.A

Source: DBCCA analysis 2012

Figure 6: Summary of ESG Studies: Correlation to Cost of Capital

Overall E, S & G and ESG Academic Studies	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	14	2001-2011	1990-2007
Security Studies	Negative	0	N.A	N.A

Notes: Includes all studies looking at E, S or G factors independently; certain studies are also considered in Section III of this paper – see footnotes in subsequent table for greater detail
Source: DBCCA analysis 2012

Figure 7: Summary of ESG Studies – Disaggregated and Aggregate: Correlation to Cost of Capital

ESG Academic Studies Disaggregated	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Governance	Positive	8[38]	2003-2009	1990-2007
Governance	Negative	0	N.A	N.A
Environmental	Positive	5	2001-2011	1992-2007
Environmental	Negative	0	N.A	N.A
Social	Positive	1	2009	1995-2006
Social	Negative	0	N.A	N.A

Source: DBCCA analysis 2012

[38] Bauer et al. (2009) is also included in Section III of this paper: both market and accounting-based returns analyses for G (positive results)

Discussion of CSR Studies: Key Themes and Findings

Figure 8: Summary of CSR Studies: Correlation to Cost of Capital

CSR Academic Studies	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	5	2006-2011	1991-2007
Security Studies	Negative	0	N.A	N.A

Source: DBCCA analysis 2012

Studies categorized here focus on a firm's commitment to CSR (measured via Corporate Social Performance or CSP) and its associated cost of capital. Key findings are as follows:

- **(5) Academic studies of securities show a positive relationship between CSP and a lower cost of capital**

Cost of Capital Analyses – Cost of Loans

(1) According to Goss and Roberts (2011)[39], in the debate over the materiality of CSR, two views emerge: overinvestment vs. risk mitigation. The authors find that **"firms with social responsibility concerns pay between 7 and 18 basis points more than firms that are more responsible**. Lenders are more sensitive to CSR concerns in the absence of security… Low-quality borrowers that engage in discretionary CSR spending face higher loan spreads and shorter maturities, but lenders are indifferent to CSR investments by high-quality borrowers."

Cost of Capital Analyses – Cost of Equity

(2) In their 2011 Moskowitz Prize-winning paper examining the effect of CSR on the implied cost of equity capital for a large sample of US firms, Ghoul et al (2011)[40] find that **firms with better CSR scores exhibit cheaper equity financing**. In particular, their findings suggest that investment in improving responsible employee relations, environmental policies, and product strategies contributes substantially to reducing firms' implied cost of equity. Moreover, Ghoul et al find that participation in two ''sin'' industries, namely, tobacco and nuclear power, increases a firms' implied cost of equity. As a result **this study supports arguments that firms demonstrating stronger CSR scores find cheaper equity financing, as their adherence to socially responsible practices improves company valuation and diminishes risk.**

(3) A 2011 study by Dhaliwal et al.[41] emphasizes the importance of corporate disclosure of CSR activities, finding that **after volunteering CSR disclosures, firms with stronger CSR performance than that of their competitors are rewarded by a reduction in the cost of equity capital.** The study also suggests that this benefit does not pass by unexploited as firms with a high cost of equity capital in the previous year tend to initiate disclosure of CSR activities in the current year, thereby enjoying a reduction in the implied cost of equity capital – **in this sense there is some notion of causality**. Furthermore, firms initiating CSR disclosure are more likely than their non-disclosing peers to: (i) attract dedicated institutional investors and analyst coverage; (ii) have analyst forecast that are more accurate and less dispersed; and (iii) raise capital (and a larger amount of it relative to their non-initiating peers) in the two years following the disclosure.

[39] "The impact of corporate social responsibility on the cost of bank loans", Goss & Roberts, *Journal of Banking and Finance*, 2011
[40] "Does corporate social responsibility affect the cost of capital?", Ghoul, Guedhami, Kwok, & Mishra, *Journal of Banking and Finance*, 2011
[41] "Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting", Dhaliwal, Li & Tsang, *The Accounting Review*, 2011

Sustainability and Corporate Cost of Capital
CSR Studies: Key Themes & Findings

Access to Finance – Capital Constraints

(4) Cheng, Ioannou and Serafeim (2011)[42] focus on the impact of CSR on the firm's capital constraints. By "capital constraints" the authors refer to market frictions that may prevent a firm from funding all desired investments. Capital constrained firms have a higher cost of capital for the same amount of capital raised, or can raise a smaller amount of financing for the same cost of capital. **The authors find that firms with better CSR performance face significantly lower capital constraints.** To establish causality (instead of purely correlation) the authors use both an instrumental variables approach and simultaneous equations models and show that there is a causal mechanism. Moreover, they show that two specific mechanism of CSR performance, better stakeholder engagement and transparency around CSR performance, reduce capital constraints.

Cost of Capital Analyses – Cost of Debt and Equity

(5) Sampling 44 utilities with market cap representing ~80% of all MSCI utilities, Bassen et al. (2006)[43] demonstrate (using 2004 – 2005 market data) that **corporate responsibility commitment leads to lower regulatory risk**. Consequently, if one treats risk as a major cost driver, **"companies with a good CR performance can reduce their cost of capital."**[44]

[42] Cheng, Beiting, Ioannis Ioannou, and George Serafeim. "Corporate Social Responsibility and Access to Finance." *Harvard Business School Working Paper*, No. 11-130, June 2011.
[43] "The influence of corporate responsibility on the cost of capital", Bassen Holz & Schlange, *University of Hamburg*, 2006
[44] It should be noted that this study uses a relatively small sample size

Discussion of ESG Studies: Key Themes and Findings

Figure 9: Summary of ESG Studies: Correlation to Cost of Capital

Overall E, S & G and ESG Academic Studies	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	14	2001-2011	1990-2007
Security Studies	Negative	0	N.A	N.A

Notes: Includes all studies looking at E, S or G factors independently; certain studies are also considered in Section III of this paper – see footnotes in subsequent table for greater detail
Source: DBCCA analysis 2012

Figure 10: Summary of ESG Studies – Disaggregated and Aggregate: Correlation to Cost of Capital

ESG Academic Studies Disaggregated	Correlation to Lower Cost of Capital	No. of Studies	Date Range of Studies	Date Range of Samples
Governance	Positive	8[45]	2003-2009	1990-2007
Governance	Negative	0	N.A	N.A
Environmental	Positive	5	2001-2011	1992-2007
Environmental	Negative	0	N.A	N.A
Social	Positive	1	2009	1995-2006
Social	Negative	0	N.A	N.A

Source: DBCCA analysis 2012

All of the academic studies looking at ESG and its relationship to a company's cost of capital focus on securities, not funds. In addition, all of these studies tend to individually focus on either environmental, social or corporate governance (E, S or G) factors, rather than studying these in the aggregate. The argument for this approach is that given the broad nature of ESG factors and because each factor may have a relationship of different strength to cost of capital, they must first be disaggregated into their respective components before any material relevance can be accurately established. For instance, Hail and Leuz's 2006 study[46] emphasizes the importance of corporate governance (G) by observing that the cost of capital is systematically lower in countries with strong securities regulation (i.e. with extensive disclosure rules and strong legal enforcement). The net effect of these mixed relationships is that CSR at the aggregate level does not relate to the implied

[45] Bauer et al. (2009) and Ammann et al. (2010) are included in both market and accounting-based returns analyses for G (all positive results)
[46] Hail, Luzi, and Christian Leuz, 2006, "International differences in the cost of equity capital: Do legal institutions and securities regulation matter?", Journal of Accounting Research 44, 485– 531

cost of equity." Meanwhile, Chava et al (2011)[47] find that **firms which have net environmental concerns are charged a higher interest rate on their bank loans… and banks seem to be concerned about both environmental issues that are already regulated (such as hazardous waste and substantial emissions of toxic chemicals) and environmental concerns that are not yet regulated (such as concerns related to greenhouse gases or other climate change concerns**. Given such a vast context, the material implications of environmental, social and governance components of responsible investing are best considered individually.

As Figure 10 above illustrates, the **key findings in the ESG literature vary among G, E, and S studies, but several key conclusions can be drawn from the studies analyzed**. These key conclusions are laid out below, and further detail on each component follows in the subsequent sub-section:

- **Governance:** Studied more extensively first, corporate governance has been strongly linked to a corporate's implied cost of equity/debt capital since the early 2000s. Much of the alpha generated from this factor may already be priced into the market due to its relatively early integration into mainstream investing.

- **Environment:** The environmental factor of ESG is expected to offer great stock return potential for investors via first mover advantage. Early recognition of the materiality behind environmental concerns over climate change, carbon regulation, and energy efficiency will help investors transform environmental legislation into opportunities.

- **Social:** The most difficult to quantify and subjected to the least academic and investor attention (beyond SRI), the social factor of ESG has arguably been burdened by the controversy over SRI performance. Nevertheless, its material relevance to the final output of a firm cannot be ignored (i.e. human capital, healthy and safety) and social considerations may well offer potential for generating alpha.

The G in ESG

- **(8) Academic studies find that strong corporate governance shows a positive link to a lower cost of debt (bonds and loans) and equity capital**

Cost of Capital Analyses – Cost of Bonds

(1) In 2007, Cremers et al.[48] documented the impact of stronger governance structures and protection for bondholders. Their sample consists of an average of 1,218 bonds from 299 firms per year, with an average of 4.3 bonds per firm and monthly returns from 1991 to 1997. The researchers found that in the presence of "bond covenants", which protect bondholders from takeover risk – **strong shareholder governance reduces the conflict between shareholder and bondholder interests, thereby creating higher yields, lower ratings, and higher returns.**

(2) Bhojraj and Sengupta (2003)[49] provide further evidence linking corporate governance mechanisms to higher bond ratings and lower bond yields: "**Governance mechanisms can reduce default risk by mitigating agency costs and monitoring managerial performance and by reducing information asymmetry between the firm and the lenders."** In addition, they find **that firms with large institutional ownership and stronger outside control of the board "enjoy lower bond yields and higher ratings on their new bond issues", while "concentrated institutional ownership has an adverse effect on yields and ratings."**

[47] "Environmental externalities and the cost of capital", Chava, *Working Paper*, 2011
[48] "Governance mechanisms and bond prices", Cremers, Nair & Wei, *Review of Financial Studies*, 20 (5), pp.1359-1388, 2007
[49] "Effect of corporate governance on bond ratings and yields: The role of institutional investors and outside directors" Bhojraj, & Sengupta, *The Journal of Business*, 2003

(3) Klock et al. (2004)[50] use firm-level data from the Investors Research Responsibility Center (a corporate governance index that contains various antitakeover and shareholder protection provisions) over the 1990 to 2000 period to examine the relation between the cost of debt financing and corporate governance. They find that **“”strong antitakeover provisions are associated with a lower cost of debt financing while weak antitakeover provisions are associated with a higher cost of debt financing, with a difference of about thirty-four basis points between the two groups. Overall, the results suggest that antitakeover governance provisions, although not beneficial to stockholders, are viewed favorably in the bond market.”**

Cost of Capital Analyses – Cost of Loans

(4) In their analysis of a “large sample” of bank loans issued to US firms between 1990 and 2004, Chava et al. (2009)[51] find that **“lower takeover defenses[52]… significantly increase the cost of loans for a firm. Firms with lowest takeover defense (democracy) pay a 25% higher spread on their bank loans as compared with firms with the highest takeover defense (dictatorship), after controlling for various firm and loan characteristics.”** The authors also discover that **“banks charge a higher loan spread to firms with higher takeover vulnerability mainly because of their concern about a substantial increase in financial risk after the takeover.”** Consequently, “firms that rely too much on corporate control market as a governance device are punished by costlier bank loans.”

Cost of Capital Analyses – Cost of Equity

(5) Chen et al. (2009)[53] investigate the relationship between corporate governance and the cost of equity capital in 25 emerging markets, and how this is influenced by country-level legal protection. **Demonstrating that the positive link between corporate governance and a lower cost of capital is not constrained only to developed markets, they find that “firm-level corporate governance has a significantly negative effect on the cost of equity capital in these [emerging] markets**”. Further, they find that **“this corporate governance effect is more pronounced in countries that provide relatively poor legal protection.”** The study concludes that **in emerging markets “firm-level corporate governance and country-level shareholder protection seem to be substitutes for each other in reducing the cost of equity.”**

(6) In an international study that examined differences in firms’ cost of equity capital across 40 countries, from the period of 1992-2001, Hail and Leuz (2006)[54] found that **firms with strong legal institutions display lower levels of cost of capital than they do in countries with weak legal systems, In particular, the cost of capital is systematically lower in countries with strong securities regulation, i.e., extensive disclosure rules and strong legal enforcement**. Overall, their findings suggest that the effects (on lower cost of capital) **are strongest for institutions that mandate disclosure to investors,**

(7) A study by Choi (2011)[55] investigates why companies with more comprehensive corporate governance have a value premium over companies with less comprehensive governance, and finds that **the cost of equity capital decreases with the strength of corporate governance.** They find that “companies that better protect shareholders’ interests have lower cost of capital.” The authors also demonstrate that **the cost of capital is lower for companies that place greater emphasis on corporate governance than for companies with less comprehensive corporate governance**. Choi concludes that **“the cost of capital decreases as the strength of corporate governance and value of business ethics, increases.”**

[50] “Does corporate governance matter to bondholders?” Klock, Mansi, & Maxwell *Journal of Finance and Quantitative Analysis*, 2004
[51] “Do Shareholder Rights Affect the Cost of Bank Loans?”, Chava, Sudheer, Livdan, & Purnanandam, *Review of Financial Studies*, 22, 2973-3004, 2009
[52] Characteristic of a firm with poor governance. This measure is proxied by the lower G-index of Gompers, Ishii, and Metrick 2003
[53] “Legal Protection of Investors, Corporate Governance, and the Cost of Equity Capital”, Chen, Chen, & Wei, *Journal of Corporate Finance*, 15, 273-289, 2009
[54] “International differences in the cost of equity capital: Do legal institutions and securities regulation matter?”, Hail, Luzi, and Christian Leuz, *Journal of Accounting Research* 44, 485– 531, 2006
[55] “Corporate Governance, Commitment to Business Ethics, and Firm Valuation: Evidence from the Korean Stock Market”, Choi, P., *Journal of Business Ethics*, 2011

Cost of Capital Analyses – Cost of Debt and Equity

(8) In another analysis of the impact of corporate governance on the cost of debt and equity, Zhu (2009)[56] focuses on 22 developed countries and finds **"good corporate governance are consistently associated with lower cost of equity and lower cost of debt".** In terms of the interaction between firm- and country- level legal protections and disclosure requirements, and the cost of capital, Zhu finds "mixed evidence", but concludes that it suggests a "complementary effect" between the two. For example, in countries with weak legal systems and disclosure requirements, **"good firm-level governance are more effective to reduce [the] cost of debt."** Furthermore, Zhu finds that shareholders and creditors value different aspects of governance practice, with creditors caring more about "whether management will deviate from value-maximizing objective rather than whether management will act in shareholder's interest and transfer wealth from them."

The E in ESG

- **(5) Academic studies find that strong corporate environmental performance shows a positive link to a lower cost of capital**

Cost of Capital Analyses – Cost of Debt (Loans and Bonds)

(1) In their 2010 Moskowitz-prize winning study on the relationship between corporate environmental management and the cost of debt, and environmental management and credit ratings, Bauer and Hann[57] find that **"(i) environmental concerns are associated with a higher cost of debt financing and lower credit ratings, and (ii) proactive environmental practices are associated with a lower cost of debt".** This is because **financiers (i.e. investors and banks) will add risk and liquidity premiums to the cost of capital for "firms with questionable practices, and higher default risks and dissolved stakeholder relationships associated with poor environmental management diminishes firm value."** In addition, environmental management performance, and especially corporate activities that increase environmental risks, are significantly, increasingly, and consistently associated with the credit ratings of firms.

(2) Schneider (2011)[58] analyzes environmental performance as a determinant of bond pricing in two of the most polluting industries in the US – the pulp and paper, and chemical industries – and finds "**there is an economically significant relation between a firm's environmental performance and its bond yields" because "firms that have poor environmental performance will face future environmental liabilities related to compliance and clean-up costs due to increasingly strict environmental laws and regulations."** Schneider also provides **"evidence of environmental performance as a determinant of bankruptcy risk"** by arguing that the sheer scale of these liabilities could drive polluting firms into bankruptcy, thereby leaving bondholders' claims subordinate to environmental liabilities. The paper's findings **support ongoing calls for the reporting of quantifiable environmental information in firms' disclosures through collaboration between the Securities and Exchange Commission (SEC) and the Environmental Protection Agency (EPA).** Finally, the study finds evidence that "the relation between environmental performance and bond yields fades as bond quality increases, which is consistent with the non-linear pay-off structure of bonds".

(3) Graham and Maher (2006)[59] examine the relationship that exists among bond ratings, bond yields, and various estimates of a firm's contingent environmental remediation liability[60], and find that **"the largest external EPA-based estimates of the firm's environmental obligations are significantly associated with a firm's bond rating, providing relevant incremental information beyond that supplied by the environmental accruals presented in the financial statements. Furthermore, while the accrued environmental liability is shown to have a direct effect on the bond yield, the external EPA-based estimates provide an indirect effect on the bond yield through their influence on the bond rating."**

[56] "Cost of capital and corporate governance: International evidence", Zhu, *Working Draft,* 2009
[57] "Corporate environmental management and credit risk", Bauer & Hann, *Working Paper*, 2010
[58] "Is environmental performance a determinant of bond pricing? Evidence from the US pulp and paper and chemical industries", Schneider, *Contemporary Accounting Research*, 2011
[59] "Environmental liabilities, bond ratings, and bond yields", Graham, & Maher, *Advances in Environmental Accounting & Management* 3, 111–142, 2006.
[60] Note: using a new sample of bond issues

Cost of Capital Analyses – Cost of Debt and Equity

(4) In a study analyzing the impact of a firm's environmental profile on its cost of equity and debt capital, Chava (2011)[61] uses the implied cost of capital (ICC) derived from analysts' earnings estimates to find that **"there is a statistically and economically significant positive relation between the net environmental concerns[62] of a firm and the expected returns on its stock."** He further finds that **"firms that have net environmental concerns are charged a higher interest rate on their bank loans… and banks seem to be concerned about both environmental issues that are already regulated (such as hazardous waste and substantial emissions of toxic chemicals) and environmental concerns that are not yet regulated (such as concerns related to greenhouse gases or other climate change concerns."** Chava goes further to **imply causality** by stating: **"These results suggest that exclusionary socially responsible investing and environmentally sensitive lending and the consequent increase in the cost of equity and debt capital has the potential to prompt firms to internalize their environmental externalities", and that "Taken together, these results suggest that SRI and environmentally sensitive lending are having an impact on the cost of capital of affected firms."**

(5) Heinkel et al. (2001)[63] show that "**exclusionary ethical investing leads to polluting firms being held by fewer investors since green investors eschew polluting firms' stock" leading to "lower stock prices for polluting firms, thus raising their cost of capital" because of a "lack of risk sharing among non-green investors."** The study goes further to argue that **"If the higher cost of capital more than overcomes a cost of reforming (i.e., a polluting firm cleaning up its activities), then polluting firms will become socially responsible because of exclusionary ethical investing."** In the Heinkel et al. model, **"more than 20% green investors are required to induce any polluting firms to reform", while "existing empirical evidence indicates that at most 10% of funds are invested by green investors."**

The S in ESG

- **(1) Academic study finds that strong corporate social performance shows a positive link to a lower cost of capital.**

Cost of Capital Analyses – Cost of Debt (Loans and Bonds)

(1) Bauer et al. (2009)[64] analyze the relationship between employee relations and credit risk, and find that **"firms with stronger employee relations enjoy a statistically and economically lower cost of debt financing, higher credit ratings, and lower firm-specific risk."**

[61] "Environmental externalities and the cost of capital", Chava, *Working Paper*, 2011
[62] More environmental concerns than environmental strengths
[63] "The Impact of Green Investment on Corporate Behavior", Heinkel, Kraus, & Zechner, 2001, *Journal of Financial and Quantitative Analysis, 36, 431-449,* 2001
[64] "Employee Relations and Credit Risk", Bauer, Derwall, & Hann, *Working Draft*, 2009

Section III: Sustainability and Corporate Financial Performance

Introduction

Section III of this paper reviews **a selection of 36 leading academic studies** (30 securities studies; 4 meta-studies and 2 literature reviews[65]) and analyzes the relationship between:

1. **The Corporate Financial Performance (CFP) of high-scoring securities in terms of their commitment to CSR, as measured by Corporate Social Performance (CSP);**
2. **The market-based performance of high-scoring securities in terms of Social Responsibility (SRI) relative to lower-scoring securities**
3. **The market-based and accounting-based performance of high-scoring securities in terms of the environment, society or governance (or all three – ESG) relative to lower-scoring securities**

For SI to perform in market terms, there should be a **positive correlation between a corporation's sustainability performance and:**

- **Higher CFP – capturing opportunities and returns.** We can divide CFP into two main areas, although in some studies these are not always clearly distinguished:
  - **Market-based CFP** (e.g. stock or bond price, fund returns, Tobin's Q[66])
  - **Accounting-based CFP** (e.g. Return on Assets, Return on Equity, firm value)

Our extensive investigation into the existing body of academic studies in the field of Sustainable Investing yielded several key results, summarized below:

- **Securities with a strong corporate commitment to CSR (high CSP) are positively correlated to Corporate Financial out-Performance (CFP)** – this finding is based on 3 security studies, 3 meta-studies and 1 literature review. Please note here that it is not so easy to distinguish between the different types of CFP (i.e. market vs. accounting), so we have categorized as CSP-CFP – in other words, CSP and overall financial performance.
- **Socially Responsible securities yield returns comparable to those of conventional benchmarks (i.e. the academic studies find generally neutral results).** In some instances, SRI securities also outperform the broader market – as is evident from the findings of a 2007 academic study and a 2011 literature review[67] – and there is no evidence of financial under-performance at the securities level.
- **Securities that score well with regard to the environment, society and governance (ESG) are generally positively correlated to financial outperformance, or will yield comparable returns. The materiality of ESG is most accurately observed upon disaggregating it into individual components:**
  - **The governance factor (G), which has been studied most extensively, has been strongly linked to market- and accounting-based financial outperformance – 11 out of the 12 studies analyzed found a positive correlation between high-performing G securities and marketing and/or accounting-based**

[65] Note that the 2011 study "A tale of values-driven and profit-seeking social investors" by Derwall, Koedijk & Horst includes both a literature review and an analysis of securities. For totalling purposes though, we only counted this study once, resulting in 36 total studies analyzed. Literature reviews are studies that evaluate, summarize, and in this case categorize, academic studies on a specific topic. Meta studies, by contrast, involve the statistical analysis of a collection of individual studies for the purpose of integrating the findings. In broad terms then, meta studies provide analysis of analyses whereas literature reviews provide a narrative discussion of research studies.
[66] A ratio devised by James Tobin of Yale University, Nobel laureate in economics, who hypothesized that the combined market value of all the companies on the stock market should be about equal to their replacement costs. The Q ratio is calculated as the market value of a company divided by the replacement value of the firm's assets. Tobin's Q can therefore be defined as conceptually equivalent to the value added by management, as determined by the market. Sources: Investopedia; DBCCA analysis 2012
[67] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011

out-performance[68]. Due to its relatively early integration into mainstream investing considerations, we further hypothesize that much of the positive impact generated from this factor may already be priced into the market.

- **The environmental factor (E) has also demonstrated strong correlation to increased market and accounting-based financial performance – 3 of the 5 studies analyzed found a positive correlation between high-performing E securities and marketing and/or accounting-based out-performance**[69]**.** There has been growing investor interst in the E-factor recently, and we thus hypothesize that E is expected to offer even larger stock return potential for investors via "first mover advantage", as early recognition of the materiality behind environmental concerns over climate change, carbon regulation, and energy efficiency will help investors transform environmental legislation into opportunities.
- **Academic studies to date have found evidence of a positive link between the social factor and market and accounting based financial performance – 5 of the 6 studies**[70] **analyzed found a positive correlation between high-performing S securities and marketing or accounting-based out-performance**. To date, the social factor (S), sometimes (and incorrectly) confused with the overall SRI sector, may be the most difficult to quantify and has been subjected to the least academic and investor attention (overall, there are more E than S studies, if the cost of capital studies are included). Nonetheless, we believe the S-factor deserves increasing academic and investor interest as its material relevance to the final output of a firm is increasingly relevant (i.e. human capital, healthy and safety) and social considerations may well offer potential for generating alpha.

In reviewing these academic studies from a variety of sources, we acknowledge that although various methodologies are used, all the studies are testing the underlying hypothesis of corporate behaviour affecting financial returns. It is important to note that sometimes the studies are limited by the data available and that as the quality of the data improves over time from increased scrutiny on the part of corporations, it will become easier to detect significant relartionships between CSP and financial returns.

Following on from Section II of this paper, which also found a strong link between high-performing ESG (and CSR) stocks and lower cost of capital, we arrive at our conclusion that **firms with strong ESG performance may now be enjoying both financial outperformance (particularly market-based) and a lower risk as measured by the cost of equity and/or debt (both loans and bonds) capital in the short run.** This theoretical anomaly – achieving higher return at lower risk[71] – results from market inefficiencies and presents a major investment opportunity**. Investors (and companies) that exploit this inefficiency will benefit from an early mover advantage that can last decades before risk-return equilibrium is established**.

Other key observations noted from the review of academic studies are as follows:

- Few of the sample periods extend beyond 2008, and thus our thesis (risk-return imbalance) may not be observed as frequently in today's environment because of the financial crisis
- The few studies that find negative relationships between CSR, SRI or ESG and corporate financial performance tend to either have older or shorter sample ranges

[68] Only one study found a neutral relationship between corporate governance and market based outperformance, and this study also found a positive relationship between corporate governance and accounting based outperformance (study: "Corporate Governance and Firm Performance", Bhagat, Bolton, *Journal of Corporate Finance*, 2008). Note also that all studies that are included more than once in the government ("G") analysis are only counted once for the purposes of this high-level analysis

[69] Only one study found a neutral relationship between E and market based performance (study: "Does the market value environmental performance?", Konar, & Cohen, *The Review of Economics and Statistics*, 2001), and another study found a positive relationship between E and market based performance and a mixed relationship between E and accounting based performance (study: "Financial Outcomes of Environmental Risk and Opportunity for US Companies". Hassel & Semenova, *John Wiley & Sons, Ltd and ERP Environment*, 2008) – hence we did not categorize these studies as positive for this high level analysis. Note also that all studies that are included more than once in the environmental ("E") analysis are only counted once for the purposes of this high-level analysis

[70] Only one study found a neutral relationship between E and market based performance (study: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011. Note also that all studies that are included more than once in the social ("S") analysis are only counted once for the purposes of this high-level analysis

[71] See Appendix II for a full discussion of the theory underpinning our thesis

- There are certain studies that have both positive and negative findings (for example, between portfolios of stocks), despite using the same metrics – these studies are classified as mixed

Our Framework for Analyzing Studies:

(1) It is first critical to breakdown studies into their specific focus areas, in order to see what is working in the CSR, SRI and ESG worlds, as analyzing them all together could be misleading. Overall, we looked at 30 individual academic studies, 2 literature reviews and 4 meta-studies in this Section, which we categorized as CSR, SRI or ESG, and then divided as follows:
   a) Security-based individual academic studies (note: these also include studies of market indices)
   b) Security-based meta-studies (note: these use statistical techniques for combining results from a sample of studies to obtain a quantitative estimate of the overall effect)
   c) Security-based literature reviews (note: these review a samples of studies and determine an overall effect from the number of positive, neutral or negative studies)

(2) We organize these types of academic studies by their specific focuses, namely CSR, SRI and ESG.

(3) We show the date range of the studies themselves, and the underlying sample date ranges.

(4) We subsequently divide these studies on the basis of their findings – whether they show positive, neutral or negative correlation to any or all of the following:
   a) Higher CFP (for CSR-oriented studies)
   b) Higher market-based performance
   c) Higher accounting-based performance

(5) By examining the major conclusions of each academic study, and quoting from the abstracts or texts, we are able to highlight the contributions of specific elements of sustainability to specific drivers of performance.

It is important to note that we address correlation here, not causality. In general, the statistical studies we have collected cannot or do not establish causality in the above relationships with any degree of confidence. Further, only several studies look to identify and test to what extent other factors mediate the relationship between social performance and financial performance (for example, credit ratings, reputation, etc.). In addition, given the relatively long-term nature of E, S and G factors – in terms of corporate implementation, recognition by investment analysts, and actual effect on a company's risk-return profile – it is important to recognize the potential for a time lag in many of the data sets – for example, changes in market value (e.g. stock prices) are not always impounded immediately for firms with improved governance.

Nonetheless, our analysis of the academic studies overwhelmingly suggests the value of corporate sustainability – and in particular, corporate ESG performance – in the identification of corporate financial outperformance.

Sustainability and Corporate Financial Performance Summary Tables of Academic Studies

Summary Tables of Academic Studies

Figure 11: Summary of CSR Studies: Correlation to Corporate Financial Performance

CSR **Individual Academic Studies**	**Correlation of CSP to Higher CFP**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Security Studies	Positive	3	2006-2011	1992-2010
Security Studies	Neutral	0	N.A	N.A
Security Studies	Negative	0	N.A	N.A
CSR **Meta-Studies**	**Correlation of CSP to Higher CFP**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Meta-Studies	Positive	3	2003-2008	1972-2007
Meta-Studies	Neutral	0	N.A	N.A
Meta-Studies	Negative	0	N.A	N.A
CSR **1 Literature Review**	**Correlation of CSP to Higher CFP**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review I	Positive	23	1991-2007	N.A
Literature Review I	Neutral	9	1991-2005	N.A
Literature Review I	Negative	2	1997-2006	N.A

Note: Literature Review: "The Worth of Values: A Literature Review on the Relation Between Corporate, Social, and Financial Performance", Van Beurden & Gossling, Journal of Business Ethics, 2008; date ranges for literature review are indicated as "N.A." (not available) because the author(s) do not list out the date range of the samples of each study included in the review
Source: DBCCA analysis 2012

Sustainability and Corporate Financial Performance Summary Tables of Academic Studies

Figure 12: Summary of SRI Studies: Correlation to Market-Based Performance

SRI **Individual Academic Studies**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Security Studies	Positive	1	2007	N.A
Security Studies	Neutral	2	2005-2009	1990-2007
Security Studies	Mixed	1	2009	1992-2007
Security Studies	Negative	0	N.A	N.A
SRI **1 Literature Review**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review Part I: Securities	Positive	4	2005-2009	1991-2007
Literature Review Part I: Securities	Neutral	3	2005-2008	2005-2008
Literature Review Part I: Securities	Negative	0	N.A	N.A

Note: Literature review is: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011. Within this literature review there is a review of Securities studies, which looks at 7 studies; and a review of Fund studies which looks at 7 studies. The latter review is discussed in Section IV. See footnotes for double-counting of studies
Source: DBCCA analysis 2012

Sustainability and Corporate Financial Performance Summary Tables of Academic Studies

Figure 13: Summary of ESG Studies: Correlation to Market or Accounting Based Performance

Overall E, S & G and ESG **Individual Academic Studies**	**Correlation to Higher Market-Based Performance (Returns)**	**Correlation to Higher Accounting-Based Performance**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Security Studies	Positive	-----	15	1995-2011	1984-2009
Security Studies	Neutral	-----	2	2003-2010	1991-2007
Security Studies	Mixed	-----	1	2007	2003-2004
Security Studies	Negative	-----	0	N.A	N.A
Security Studies	-----	Positive	10	1995-2011	1989-2008
Security Studies	-----	Neutral	0	N.A	N.A
Security Studies	-----	Mixed	1	2007	2003-2004
Security Studies	-----	Negative	1	2003	1997-2002
S in ESG **Meta-Studies**	**Correlation to Higher Market or Accounting-Based Performance**		**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Meta-Studies	Positive		1	2011	1991-2009
Meta-Studies	Neutral		0	N.A	N.A
Meta-Studies	Negative		0	N.A	N.A

Notes: Includes all studies looking at E, S or G factors independently, in addition to all studies looking at ESG as an aggregate factor; certain studies are considered more than once in each category – see footnotes in subsequent table for greater detail. Meta study is: "Governance mechanisms and equity prices", Cremers, Martijn & Vinay b. Nair, Journal of Finance 6, 2859-2894, 2005
Source: DBCCA analysis 2012

Sustainability and Corporate Financial Performance Summary Tables of Academic Studies

Figure 14: Summary of ESG Studies – Disaggregated and Aggregate: Correlation to Market or Accounting Based Performance

ESG Academic Studies and Meta Studies Disaggregated & Aggregated	Correlation to Higher Market-Based Performance (Returns)	Correlation to Higher Accounting-Based Performance	No. of Studies	Date Range of Studies	Date Range of Samples
Governance	Positive	-----	7[72]	2003-2011	1990-2008
Governance	Neutral	-----	1[73]	2008	1997-2004
Governance	-----	Positive	6	2006-2010	1990-2007
Governance	-----	Negative	1[74]	2003	1997-2002
Environmental	Positive	-----	3[75]	2003-2008	1994-2006
Environmental	Neutral	-----	1	2010	1996-2007
Environmental	-----	Positive	2[76]	2001-2010	1989-2007
Environmental	-----	Mixed	1[77]	2008	2003-2004
Social (Meta-Study)	Positive		1[78]	2011	1991-2009
Social	Positive	-----	4[79]	1995-2010	1984-2009
Social	Mixed	-----	1	2011	1992-2008
Social	-----	Positive	2[80]	1995-2006	N.A
Aggregate	Positive	-----	1	2009	1999-2009

Note: Includes all studies looking at E, S or G factors independently, in addition to all studies looking at ESG as an aggregate factor; certain studies are considered more than once in each category – see footnotes in subsequent table for greater detail. Meta study is: "Governance mechanisms and bond prices", Cremers, Nair & Wei, Review of Financial Studies, 20 (5), pp.1359-1388, 2007
Source: DBCCA analysis 2012

[72] Bauer et al. (2009) and Ammann et al. (2010) are included in both market and accounting-based returns analyses for G (all positive results)
[73] Bhagat and Bolton (2008) is included in both market and accounting-based analyses for G (neutral and positive results, respectively)
[74] Bhagat and Bolton (2008) is included in both market and accounting-based analyses for G (neutral and positive results, respectively)
[75] Guenster et al. (2006) is included in both market and accounting-based returns analyses for E (both positive results). Hassel and Semenova (2008) is included in both market and accounting-based returns analysis for E (positive and neutral results, respectively).
[76] Guenster et al. (2006) is included in both market and accounting-based returns analyses for E (both positive results)
[77] Hassel and Semenova (2008) is included in both market and accounting-based returns analysis for E (positive and neutral results, respectively).
[78] Meta-study that analyzes S and market/accounting based returns: "Governance mechanisms and equity prices", Cremers, Martijn & Vinay b. Nair, *Journal of Finance* 6, 2859-2894, 2005
[79] Huselid (1995) is included in both market and accounting-based returns analyses for S (both positive results).
[80] Huselid (1995) is included in both market and accounting-based returns analyses for S (both positive results)

Discussion of CSR Studies: Key Themes and Findings

Figure 15: Summary of CSR Studies: Correlation to CFP

CSR Individual Academic Studies	Correlation of CSP to Higher CFP	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	3	2006-2011	1992-2010
Security Studies	Neutral	0	N.A	N.A
Security Studies	Negative	0	N.A	N.A
CSR Meta-Studies	Correlation of CSP to Higher CFP	No. of Studies	Date Range of Studies	Date Range of Samples
Meta-Studies	Positive	3	2003-2008	1972-2007
Meta-Studies	Neutral	0	N.A	N.A
Meta-Studies	Negative	0	N.A	N.A
CSR 1 Literature Review	Correlation of CSP to Higher CFP	No. of Studies Reviewed	Date Range of Studies	Date Range of Samples
Literature Review I	Positive	23	1991-2007	N.A
Literature Review I	Neutral	9	1991-2005	N.A
Literature Review I	Negative	2	1997-2006	N.A

Note: Literature Review: "The Worth of Values: A Literature Review on the Relation Between Corporate, Social, and Financial Performance", Van Beurden & Gossling, Journal of Business Ethics, 2008; date ranges for literature review are indicated as "N.A." (not available) because the author(s) do not list out the date range of the samples of each study included in the review
Source: DBCCA analysis 2012

Studies categorized here focus on a firm's commitment to CSR (measured via Corporate Social Performance or CSP) and its associated corporate financial performance (CFP). These studies utilize a range of measure to analyze impacts on securities, and generally focus on either economic or financial indicators. However, frequently these CSR studies do not disaggregate CFP into accounting and market based measures – as a result we have also not attempted to disaggregate these studies into accounting vs. market studies, and categorize them instead at the CFP (overall financial performance) level only.

Key findings are as follows:

- **(3) Academic studies of securities show a positive relationship between CSR and a higher CFP**

(1) In a Harvard Business School Working Paper, Eccles et al. (2011)[81] investigate the "effect of a corporate culture of sustainability on multiple facets of corporate behavior and performance outcomes" using a matched sample of 180 companies. They find that High Sustainability companies ("corporations that voluntarily adopted environmental and social policies many years ago") "exhibit fundamentally different characteristics" from Low Sustainability companies ("a matched sample of firms that adopted almost none of these policies"), and provide evidence that **High Sustainability companies**

[81] "The Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance", *Harvard Business School Working Paper*, Eccles, Ioannou & Serafeim, 2011

"significantly outperform their counterparts over the long-term, both in terms of stock market and accounting performance". The authors also take a closer look at corporate governance and find that the boards of directors of High Sustainability companies are "more likely to be responsible for sustainability and top executive incentives are more likely to be a function of sustainability metrics". These companies are also "more likely to have organized procedures for stakeholder engagement, to be more long-term oriented, and to exhibit better measurement and disclosure of nonfinancial information." Furthermore, the authors document that analysts underestimated the future profitability of the High Sustainability firms, suggesting that errors-in-expectation can explain the outperformance rather differential riskiness.

(2) Xueming and Bhattacharya (2006)[82] merged FAMA CSR metrics with market value data using Tobin's Q and stock returns for 113 publicly-traded Fortune 500 companies from 2001-2004. Their analysis proved that **CSR affects market value partially through the mediator of customer satisfaction as a variable.** Specifically however, the researchers calculated that **a "typical" company within their sample-set had an average market value of approximately $48 billion, a one unit increase of CSR ratings would result in approximately $17 million more profits on average in subsequent years, which is a substantial increase of financial returns**. Overall, they find that CSR increases customer satisfaction, which in turn leads to positive financial returns.

(3) Using a comprehensive set of KLD indicators and a model that allows for both expected cash flow and cost of capital effects, Gregory et al. (2010)[83] find that **"CSR performance appears to be valued by markets" and "most of these valuation effects are robust to both industry effects and the inclusion of proxies for intangible assets".** They further comment that **these findings are "consistent with the expected future financial performance of high CSR firms being greater than that of low CSR firms."**

- **(3) Meta-studies of securities show a positive relationship between CSP and a higher CFP**

(1) Sampling 52 US empirical studies that span 30 years of research, Orlitzky et al. in their 2003 meta-study[84] investigating corporate social and financial performance demonstrated that **a universally positive correlation – not a tradeoff – exists between CSP and CFP**. **Regulated by the firm's reputation (for example, its credit rating[85]), this relationship is often both "bidirectional and simultaneous".** Note, they also find that 15% - 100% of the disparities among studies between positive or negative CSP-CFP correlations (a key source of controversy) can be attributed to inaccurate variable correlations, sampling error and measurement error (the first, a theoretical error, is recognized here, while the latter two are both controlled for). In addition, many of the negative findings sampled here are suggested to result from statistical artifacts

(2) Pavie and Filho's 2008 meta-study updates Orlitzky's earlier (2003) analysis to evaluate 112 international studies published in the previous ten years, and their findings corroborate Orlitzy's findings and **further support the existing theories by demonstrating positive relations between various measures of CSR and CFP**[86].

(3) In a more recent (2007) meta-analysis of 167 empirical studies Margolis et al.[87] **support Orlitzky's notion of a bidirectional CSP-CFP relationship**. While other corporate activities may more largely impact CFP, companies (especially wealthier ones) must preserve their "license to operate" in society by improving their social performance, thereby resulting in a positive CSP-CFP relationship. Thus, **high CSP may arguably be a proxy for good management**.

[82] "Corporate Social Responsibility, Customer Satisfaction, and Market Value", Xueming Luo & Bhattacharya, *Journal of Marketing*: Vol. 70, No. 4, pp. 1-18, 2006
[83] "Stock Market Valuation of Corporate Social Responsibility Indicators", Gregory, A., Whittaker, J. & Yan, Xiaojuan, *University of Exeter Business School*, November 2010
[84] "Corporate social and financial performance: A meta-analysis" Orlitzky, Schmidt, & Rynes, *Organization Studies*, 2003
[85] For more detail, see Chang and Sheng (2010), who examine data of TWSE-listed companies during 2005-2009 and find that credit ratings mediate the relationship between CSR and a firm's financial performance. Source: "Is Corporate Social Responsibility Rewarded by the cost of debt? –Credit ratings view", Chang, & Shen, *Working Draft*, 2010
[86] "Corporate social responsibility and financial performance: A meta-analysis", Pavie, & Filho, *Ibmec Business School Dissertation*, 2008
[87] "Does it pay to be good? A meta-analysis and redirection of research on the relationship between corporate social and financial performance", Margolis, Elfenbein, & Walsh, *Working Paper, Ross School of Business - University of Michigan*, 2007

Sustainability and Corporate Financial Performance CSR Studies: Key Themes & Findings

- **(1) Literature review of securities studies shows a positive relationship between CSP and a higher CFP**

(1) A literature review conducted in 2008 by Gossling and Van Beurden[88] evaluated a range of studies that empirically test the relationship between CSR and CFP. Their research reveals that **the majority of the included studies found a positive relationship between CSP and CFP (68%), while 26% show no significant relationship between CSP and CFP. Only 6% (two studies) show a negative relationship between CSP and CFP.**

[88] "The Worth of Values – A Literature Review on the Relation Between Corporate Social and Financial Performance", Gossling, T. Van Beurden, Pieter, *Journal of Business Ethics 82:407-424*, 2008

Discussion of SRI Studies: Key Themes and Findings

Figure 16: Summary of SRI Studies: Correlation to Market-Based Performance

SRI Individual Academic Studies	Correlation to Higher Market-Based Performance (Returns)	No. of Studies	Date Range of Studies	Date Range of Samples
Security Studies	Positive	1	2007	N.A
Security Studies	Neutral	2	2005-2009	1990-2007
Security Studies	Mixed	1	2009	1992-2007
Security Studies	Negative	0	N.A	N.A
SRI **1 Literature Review**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review Part I: Securities	Positive	4	2005-2009	1991-2007
Literature Review Part I: Securities	Neutral	3	2005-2008	2005-2008
Literature Review Part I: Securities	Negative	0	N.A	N.A

Note: Literature review is: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011. Within this literature review there is a review of Securities studies, which looks at 7 studies; and a review of Fund studies which looks at 7 studies. The latter review is discussed in Section IV. See footnotes for double-counting of studies
Source: DBCCA analysis 2012

The academic studies categorized here – 4 individual academic studies and one literature review included within Derwall et al.'s 2011 study[89] – include a variety of definitions for "Socially Responsible", ranging from ethics to more recent "current SRI" (similar to ESG or Sustainable Investing). As a result of these varying definitions, a brief discussion of the types of screening used in this form of investing is warranted as **SRI investors (or screeners) employ a mix of negative (values-driven) and positive (risk-and-return driven) screening techniques to maximize financial return within a socially aligned investment strategy**.

Applications of Positive vs. Negative (or Exclusionary) Screening in SRI

Investors that implement positive screens tilt their portfolios (and funds) towards stocks that rate well on nominated criteria ranging from ethical values to environmental, social and governance factors. Negative (or exclusionary) screening restricts the investment universe in a more values-driven fashion, and it commonly adheres to two established forms: industry-based and norm-based. Industry-based screening "generally excludes companies on the basis of industry membership (i.e. often based on a cut-off point method where companies are excluded if more than a certain percentage of their annual turnover is derived from an unethical industry, e.g. weapons.)" and requires value judgments on what constitutes "good" and "bad" industries. Norm-based negative screening is a less subjective and arguably more reliable technique that excludes companies which explicitly violate a number of conventions. A greater trend toward norm-based negative screening can be observed, as it is easier for investors to reach consensus upon agreement violations committed by firms as opposed to corporate participation in a "bad" industry.[90]

[89] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011.
[90] See, for example, "Evaluating the performance of socially responsible investment funds: A holding data analysis", Stenstrom, & Thorell, *Stockholm School of Economics (Master thesis within Finance),* 2007

Sustainability and Corporate Financial Performance SRI Studies: Key Themes & Findings

The majority of academic SRI studies we analyze below do not characterize or restrict their samples on the basis of screening techniques. Rather, our sample of studies focuses primarily on the relationship between a company's social performance and its market-based performance. **Investigation into potential SRI outperformance currently yields generally neutral or mixed results among academics and the investor community on the whole, culminating in the (perhaps misleading) perception that "the market does not price social responsibility characteristics"**[91]. In some instances though, SRI securities also outperform the broader market – as is evident from the 2011 Derwall et al. literature review[92], which finds 4 academic studies that demonstrate a positive correlation between social responsibility and financial performance, and 3 academic studies that demonstrate a neutral result. Finally, it is important to note that none of the studies reviewed show evidence of a correlation between social out-performance and financial under-performance at the securities level.

Despite the aforementioned findings, conventional investors have not tended to differentiate between funds and securities when looking at SRI under or out-performance. As some SRI funds have performed below the broader market, this has resulted in a negative view of SRI investing among much of the investment community, which believes SRI to involve a trade-off between financial returns and ethical concerns. However, as a review of the academic studies demonstrates, this perception is largely unfounded.

Key findings are as follows:

- **(1) Academic study of SRI securities finds a positive relationship between the SRI investing technique and market-based performance**

(1) Kempf and Osthoff (2007)[93] implement a simple trading strategy based on socially responsible ratings from the KLD Research & Analytics, where **they buy stocks with high socially responsible ratings and sell stocks with low socially responsible ratings. The authors find that this strategy leads to high abnormal returns of up to 8.7% per year.** The maximum abnormal returns are reached when investors employ the best-in-class screening approach, use a combination of several socially responsible screens at the same time, and restrict themselves to stocks with extreme socially responsible ratings. Moreover, the abnormal returns remain significant even after taking into account reasonable transaction costs.

- **(3) Academic studies of SRI securities and indices yield generally mixed or neutral results**[94]

(1) Statman and Glushkov (2009)[95] analyze returns of securities rated on social responsibility by KLD over the 1992 to 2007 period and find that this **SRI orientation provides socially responsible model portfolios with a return advantage relative to conventional model portfolios. However, the manner in which this SRI tilt is applied – via exclusion of the stocks of shunned companies – creates a return disadvantage that largely offsets the actual benefits of the tilt. As a result, the findings of this study support the adoption of the best-in-class method, which calls for the same social tilt, but refrains from shunning "sin" companies.** We classify this study as mixed due to the contradictory findings.

(2) Statman's 2005 study on four SRI indices[96] finds that **although the mean returns of the SRI indices surpassed those of the S&P 500 Index from May 1990 to April 2004, none of the alphas displayed statistical significance.** An updated version of this study extended the data to 2007 and subsequently confirmed these conclusions[97]. We therefore classify this study as neutral.

[91] Hamilton et al., 1993, as cited in Source: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011
[92] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011
[93] "The Effect of Socially Responsible Investing on Portfolio Performance", Kempf & Osthoff, *European Financial Management*, 13: 908–922, 2007
[94] Note: In general, academic studies of SRI securities primarily employ a mixture of positive and/or negative screenings when selecting their samples.
[95] "Wages of social responsibility", Statham & Glushkov, *Financial Analyst Journal*, 2009. Note: this study was awarded the 2008 Moskowitz prize
[96] The Domini 400 Social Index (DS 400 Index), the Calvert Social Index, the Citizens Index, and the US portion of the Dow Jones Sustainability Index. Note: each SRI index differs in the emphasis it places on social, environmental or corporate governance factors. Source: "Socially responsible indexes: Composition, performance and tracking errors", Statman, *Journal of Portfolio Management*, 2005
[97] "Socially Responsible Investments", Statman, *Journal of Investment Consulting*, 2007

(3) Schroder (2007)[98] studies 29 international SRI equity indices and observes that **"SRI stock indices do not exhibit a different level of risk-adjusted return than conventional benchmarks"**, so we classify this study as neutral. In contrast to other studies, Schroder argues that his analysis is a "direct measure of the performance effects of SRI screens" as it removes the transaction costs of funds, the timing activities and the skill of the fund management as he concentrates on SRI indices and not on investment funds.

It is important to note that inferences from studies of stock indices may be limited due to the construction of the index itself. However, these studies of indices are an important addition to the literature.

- **(1) Literature Review of academic studies of SRI securities and indices yields a combination of positive and neutral results**

(1) Derwall et al (2011)[99] segment the SRI movement between values versus profit (or risk-return) orientation in order to solve the "puzzling evidence that both socially responsible and controversial stocks produce superior returns[100]." Their study includes **a literature review of SRI securities which finds neutral-to-positive results**. Figure 17 below provides a summary of the findings of the literature review.

Figure 17: Studies on the Performance of Portfolios Formed using Environmental and Social Responsibility Factors

Studies on the performance of portfolios formed using environmental and social responsibility factors.

Study	Region and period	Environment	Employee	Diversity	Human rights	Community	Product	Governance
Panel A: Studies on environmental and social SRI criteria in the US market								
Derwall et al. (2005)	1995–2003	P						
Kempf and Osthoff (2007)	1991–2004	P	P	P/NS	P/NS	P	N/NS	
Statman and Glushkov (2009)	1992–2007	NS	P	NS	N/NS	P/NS	NS	N/NS
Edmans (2009)	1984–2006		P					
Galema et al. (2008)	1992–2006	NS	P/NS	NS	NS	P/NS	NS	NS
Panel B: Studies on environmental and social SRI criteria in non-US markets								
Van de Velde et al. (2005)	EMU, 2000–2003	NS	NS			NS	NS	NS
Brammer et al. (2006)	UK, 2002–2005	NS	NS			NS		

Note: "P" indicates the study suggests a positive relation between the corporate social responsibility measure and an abnormal stock return, "N" indicates a negative relation, and "NS" suggests a non-significant relation.

Source: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011

[98] "Is there a difference? The performance characteristics of SRI equity indices", Schroder, *Journal of Business Finance and Accounting*, 2007.
[99] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011
[100] A fuller discussion of the findings of this analysis can be found in Section III of this paper

Sustainability and Corporate Financial Performance
ESG Studies: Key Themes & Findings

Discussion of ESG Studies: Key Themes and Findings

Figure 18: Summary of ESG Studies: Correlation to Market or Accounting Based Performance

Overall E, S & G and ESG **Individual Academic Studies**	**Correlation to Higher Market-Based Performance (Returns)**	**Correlation to Higher Accounting-Based Performance**	**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Security Studies	Positive	-----	15	1995-2011	1984-2009
Security Studies	Neutral	-----	2	2003-2010	1991-2007
Security Studies	Mixed	-----	1	2007	2003-2004
Security Studies	Negative	-----	0	N.A	N.A
Security Studies	-----	Positive	10	1995-2011	1989-2008
Security Studies	-----	Neutral	0	N.A	N.A
Security Studies	-----	Mixed	1	2007	2003-2004
Security Studies	-----	Negative	1	2003	1997-2002
S in ESG **Meta-Studies**	**Correlation to Higher Market or Accounting-Based Performance**		**No. of Studies**	**Date Range of Studies**	**Date Range of Samples**
Meta-Studies	Positive		1	2011	1991-2009
Meta-Studies	Neutral		0	N.A	N.A
Meta-Studies	Negative		0	N.A	N.A

Notes: Includes all studies looking at E, S or G factors independently, in addition to all studies looking at ESG as an aggregate factor; certain studies are considered more than once in each category – see footnotes in subsequent table for greater detail. Meta study is: "Governance mechanisms and bond prices", Cremers, Nair & Wei, Review of Financial Studies, 20 (5), pp.1359-1388, 2007
Source: DBCCA analysis 2012

Sustainability and Corporate Financial Performance ESG Studies: Key Themes & Findings

Figure 19: Summary of ESG Studies – Disaggregated and Aggregate: Correlation to Market or Accounting Based Performance

ESG Academic Studies and Meta Studies Disaggregated & Aggregated	Correlation to Higher Market-Based Performance (Returns)	Correlation to Higher Accounting-Based Performance	No. of Studies	Date Range of Studies	Date Range of Samples
Governance	Positive	-----	7[101]	2003-2011	1990-2008
Governance	Neutral	-----	1[102]	2008	1997-2004
Governance	-----	Positive	6	2006-2010	1990-2007
Governance	-----	Negative	1[103]	2003	1997-2002
Environmental	Positive	-----	3[104]	2003-2008	1994-2006
Environmental	Neutral	-----	1	2010	1996-2007
Environmental	-----	Positive	2[105]	2001-2010	1989-2007
Environmental	-----	Mixed	1[106]	2008	2003-2004
Social (Meta-Study)	Positive		1[107]	2011	1991-2009
Social	Positive	-----	4[108]	1995-2010	1984-2009
Social	Mixed	-----	1	2011	1992-2008
Social	-----	Positive	2[109]	1995-2006	N.A
Aggregate	Positive	-----	1	2009	1999-2009

Note: See footnotes for double-counting of studies; only studies analyzed are included in this table
Source: DBCCA analysis 2012

All of the academic studies looking at ESG and its relationship to a company's market-based or accounting-based financial performance focus on securities (as opposed to funds). We differentiate here between market-based and accounting-based, defining:

- **Market-based performance**[110] as economic profits that "represent the net cash flows that accrue to shareholders" i.e. capital (stock) market returns and Tobin's Q. "Additionally, economic profits are forward-looking and reflect the market's perception of both potential and current profitability."[111]

[101] Bauer et al. (2009) and Ammann et al. (2010) are included in both market and accounting-based returns analyses for G (all positive results)
[102] Bhagat and Bolton (2008) is included in both market and accounting-based analyses for G (neutral and positive results, respectively)
[103] Bhagat and Bolton (2008) is included in both market and accounting-based analyses for G (neutral and positive results, respectively)
[104] Guenster et al. (2006) is included in both market and accounting-based returns analyses for E (both positive results). Hassel and Semenova (2008) is included in both market and accounting-based returns analysis for E (positive and neutral results, respectively).
[105] Guenster et al. (2006) is included in both market and accounting-based returns analyses for E (both positive results)
[106] Hassel and Semenova (2008) is included in both market and accounting-based returns analysis for E (positive and neutral results, respectively).
[107] Meta-study that analyzes S and market/accounting based returns: "Governance mechanisms and equity prices", Cremers, Martijn & Vinay b. Nair, *Journal of Finance* 6, 2859-2894, 2005
[108] Huselid (1995) is included in both market and accounting-based returns analyses for S (both positive results).
[109] Huselid (1995) is included in both market and accounting-based returns analyses for S (both positive results)
[110] Note, in this paper we categorize Tobin's Q as a market-based measure (as categorized by Huselid, 1995: Tobin's Q = market value of a firm / replacement cost of its assets

- **Accounting-based performance** profits, by contrast, can differ from economic profits as a result of timing issues, adjustments for depreciation, choice of accounting method, and measurement error. Unlike economic profits, accounting data also reflects an historical perspective[112].

Although there is widespread agreement in the literature that capital market measures are superior to accounting data[113], the latter can provide additional relevant information and several academic studies analyzed focus on these metrics.

In addition, all but one of these studies tend to individually focus on either environmental, social or corporate governance (E, S or G) factors, rather than studying these in the aggregate. The argument for this approach is that given the broad nature of ESG factors and because each factor may have a relationship of different strength to financial performance, they must first be disaggregated into their respective components before any material relevance can be accurately established[114].

As Figure 19 above illustrates, the **key findings in the ESG literature vary among G, E, and S studies, but several key conclusions can be drawn from the studies analyzed**. These key conclusions are laid out below, and further detail on each component follows in the subsequent sub-section:

- **Governance:** Studied more extensively first, corporate governance has been strongly linked to a corporate's financial performance since the early 2000s. Much of the alpha generated from this factor may already be priced into the market due to its relatively early integration into mainstream investing.

- **Environment:** The environmental factor of ESG is expected to offer great stock return potential for investors via first mover advantage. Early recognition of the materiality behind environmental concerns over climate change, carbon regulation, and energy efficiency will help investors transform environmental legislation into opportunities.

- **Social:** The most difficult to quantify and subjected to the least academic and investor attention (beyond SRI), the social factor of ESG has arguably been burdened by the controversy over SRI performance. Nevertheless, its material relevance to the final output of a firm cannot be ignored (i.e. human capital, healthy and safety) and social considerations may well offer potential for generating alpha.

[111] "The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance", Huselid, *Academy of Management Journal*, 1995
[112] "The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance", Huselid, *Academy of Management Journal*, 1995
[113] Becker & Olson, 1987; and Hirsch, 1991, as cited in "The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance", Huselid, *Academy of Management Journal*, 1995
[114] See, for example, "Going beyond a long-lasting debate: What is behind the relationship between coporate social and financial performance", Perrini, Russo, Tencati, & Vurro, *European Academy of Business in Society*, 2009

Sustainability and Corporate Financial Performance ESG Studies: Key Themes & Findings

The G in ESG

- **(7) Academic studies find that strong corporate governance shows a positive link to market-based financial outperformance**

(1) In a much cited study, Gompers et al. (2003)[115] investigate corporate governance and equity prices by constructing a "governance Index" to proxy for the level of shareholder rights at ~1,500 large firms during the 1990s. The authors find that **"firms with stronger shareholder rights had higher firm value, higher profits, higher sales growth, lower capital expenditures, and made fewer corporate acquisitions."** In addition, **"an investment strategy that bought firms in the lowest decile of the index (strongest rights) and sold firms in the highest decile of the index (weakest rights) would have earned abnormal returns of 8.5 percent per year during the sample period" of 1990 through 1999.**

(2) In a study that compares the governance of foreign firms to the governance of similar US firms, Aggarwal et al. (2007)[116] find that **"on average, foreign firms have worse governance than matching US firms"**, with only 8% of foreign firms having better governance than comparable US firms and the majority of these being either in the UK or Canada. The authors then identify a "governance gap" – the difference between the quality of a firm's governance and the governance of a comparable US firm – and find that **"the value of foreign firms increases with the governance gap… [suggesting] that firms are rewarded by the markets for having better governance than their US peers."** The study also finds **that "among the individual governance attributes considered, we find that firms with board and audit committee independence are valued more" and "other attributes, such as the separation of the chairman of the board and of the CEO functions, do not appear to be associated with higher shareholder wealth."**

(3) Ammann et al. (2010)[117] investigate the relationship between corporate governance and firm value in 22 developed countries over the 2003 to 2007 period[118] by constructing 3 of their own corporate governance indices. **For all three indices they find "a strong and positive relation between firm-level corporate governance and firm valuation."** In this study, Ammann et al. use Tobin's Q as the main performance measure, and this study has thus been classified as a study that analyzes market-based performance.

(4) Bauer et al. (2009)[119] examine corporate governance and economic performance in the context of Real Estate Investment Trusts (REITs), and after studying a sample of more than 220 REITs conclude that **"firm value is significantly related to firm-level governance for REITs** with low payout ratios only." The authors then repeat the analysis with the complete database of more than 5,000 companies and a control sample of firms with high corporate real estate ratios, and find a **"strong and significantly positive relation between our governance index and several performance variables**."

(5) Core et al. (2006)[120] seek to investigate further the correlation between weak governance and stock returns found by Gompers et al. (2003) in order to determine if this link is indeed causal with the market not appreciating the value relevance of governance. **They conclude that although weak governance is correlated with weak operating performance, weak governance is not correlated with negative earnings surprises as reflected in analyst forecast errors. Therefore, they conclude that weak governance did not cause the abnormal stock returns. (i.e. no causal link is found), even though there is evidence of correlation.**

[115] "Corporate governance and equity prices", Gompers, Ishii, & Metrick, *Quarterly Journal of Economics*, 2003
[116] "Do US firms have the best corporate governance? A cross-country examination of the relation between corporate governance and shareholder wealth", Aggarwal, Erel, Stulz, & Williamson, *National Bureau of Economic Research (NBER) Finance Working Paper*, 2007
[117] "Corporate governance and firm value: International evidence", Ammann, Oesch, & Schmid, *Journal of Empirical Finance*, 2010
[118] Based on a set of 64 individual governance attributes, using a dataset from Governance Metrics International (GMI) comprising 6,663 firm-year observations.
[119] "Corporate governance and performance: The REIT effect", Bauer, Eichholtz, & Kok, *Real Estate Economics*, 2009
[120] "Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations", Core, Guay, & Rusticus, *Journal of Finance* 61, 655–687, 2006

(6) In their investigation into the interaction between corporate governance and CSR, and firm value, Harjoto and Jo (2011)[121] find that **"the CSR choice is positively associated with the internal and external corporate governance and monitoring mechanisms, including board leadership, board independence, institutional ownership, analyst following, and anti-takeover provisions."** Using Tobin's Q as a measure the authors further conclude that **"CSR enagement positively influences firm value"**, while also emphasizing the role of analysts in firm value by stating that **"the impact of analyst following for firms that engage in CSR on firm value is strongly positive".**

(7) Noting Core et al's 2006 study[122], Bebchuck et al. (2011)[123] found that from the period of 1991-1999 stock returns were not strongly correlated with relatively weaker/stronger governance scores. This correlation, however, did not persist during the subsequent 2000-2008 period in which stock market reactions to earning announcements reflected the market being more positively surprised by the earning announcements of good-governance firms than by those of poor-governance firms. Analysts were also positively surprised when firms with positive governance scores outperformed their forecasts. The study concludes that **market awareness and preference for firms with good governance scores has increased over the 1991 to early 2000 period, which is reflected by analysts' "earnings surprises" for firms.**

- **(1) Academic study finds that strong corporate governance shows a neutral link to market-based financial outperformance**

(1) In a study that we define as neutral in its findings, Bhagat and Bolton (2008)[124] address the relationship between corporate governance and corporate performance, finding that **"none of the governance measures are correlated with future stock market performance".** In addition, they find that "given poor firm performance, the probability of disciplinary management turnover is positively correlated with stock ownership of board members, and board independence." **They therefore argue for the "strategic importance of board incentives."**

- **(6) Academic studies find that strong corporate governance shows a positive link to accounting-based financial outperformance**

(1) In a study focused on 297 Taiwanese electronics companies, Huang (2010)[125] explores the interrelationship between corporate governance (CG), CSR, financial performance (FP – measured by ROA) and CSP. **"The results show that a CG model which includes independent outside directors and which has specific ownership characteristics has a significantly positive impact on both FP and CSP."** They conclude that **"independent outside directors, foreign institutional stockholders and domestic financial institutional stockholders are shown to improve financial performance."**

(2) Although it finds no correlation between corporate governance and market-based performance, the aforementioned study by Bhagat and Bolton (2008)[126] finds that **stock ownership of board members, and CEO-Chair separation is significantly positively correlated with better contemporaneous and subsequent *operating* performance."**[127]

(3) In 1999, Core et al[128] documented board and governance structures pertaining to the level of CEO compensation over a three-year period for 205 publicly traded U.S. firms. Their results prove that both board structures and shareholder structures (that own at least 5% of the firm's shares) have a strong cross-sectional association with the level of CEO compensation.

[121] "Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility", Harjoto, M. & Jo, H., *Journal of Business Ethics*, 2011
[122] Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations", Core, Guay, & Rusticus, *Journal of Finance* 61, 655–687, 2006
[123] "Learning and The Disappearing Association Between Governance and Returns", Bebchuck, Cohen, Wang & Charles, Harvard Law School. Forthcoming, *Journal of Financial Economics*, 2011
[124] "Corporate Governance and Firm Performance", Bhagat, Bolton, *Journal of Corporate Finance*, 2008
[125] "Corporate governance, corporate social responsibility, and corporate performance", Huang, C., *Journal of Management and Organization*, 2010
[126] "Corporate Governance and Firm Performance", Bhagat, Bolton, *Journal of Corporate Finance*, 2008
[127] As measured by the Gompers, Ishii, and Metrick (GIM, 2003) and Bebchuk, Cohen and Ferrell (BCF, 2004) indices
[128] Corporate Governance, Chief Executive Officer Compensation, and Firm Performance, Core, Holthausen & Larcker, *Journal of Financial Economics* 51:371-406, 1990

They go further to say **that both board and ownership structures affect the extent to which CEO's obtain compensation in excess of the level implied by economic determinants,** which **they conjecture to predict the manifestation of other contracting inefficiencies within the firm that lead to poorer subsequent performance. In conclusion, the researchers find a strong, positive correlation between governance and future ROA and MTB.**

(4) In 2005, Cremers et al[129]. investigated the association between internal (shareholder activism) and external (corporate control) governance mechanisms and equity prices from 1990-2001 on 1600 firms using governance ratings in the GIM index. The researchers found that **external and internal governance mechanisms are strong complements that are associated with long term abnormal returns and accounting measures of profitability. Independently however, the results for each type of governance mechanism is not nearly as robust as when it is combined**. The researchers also found that the **complementary interaction between internal and external governance is even stronger for low-leverage firms, in which both forms of governance mechanisms can be associated with a 5.5% higher Return on Assets (ROA).**

(5-6) In addition, two academic studies cited in the previous section – **Ammann et al. (2010) and Bauer et al. (2009) – both find a positive relationship between good corporate governance and accounting-based performance (or firm value), in addition to market-based performance.** These studies look at a range of geographical regions and specific issues, and further buttress the notion that there is a positive relationship between strong corporate governance and accounting-based financial outperformance.

- **(1) Academic study finds that strong corporate governance shows a negative link to accounting-based financial outperformance**

(1) Suggesting the contrary, Bauer et al. (2003)[130] **find a negative relationship between corporate governance and firm valuation, as approximated by Net-Profit-Margin (NPM) and Return-on-Equity (ROE).**

The E in ESG

- **(3) Academic studies find that strong corporate environmental performance shows a positive link to market-based financial outperformance**

(1) In their analysis of the inter-relations among environmental disclosure, environmental performance, and economic performance Al-Tuwaijri et al. (2003)[131] find that "**"good" environmental performance is significantly associated with "good" economic performance, and also with more extensive quantifiable environmental disclosures of specific pollution measures and occurrences."**

(2) Guenster et al. (2006)[132] add to the debate on corporate environmental-financial performance by focusing on the concept of eco-efficiency, and analyzing the relationship between eco-efficiency and financial performance from 1997 to 2004. They find that **eco-efficiency relates positively to operating performance and market value**, and that "the market's valuation of environmental performance has been time variant, which may indicate that **the market incorporates environmental information with a drift."** They reach this conclusion by finding that although environmental leaders initially did not sell at a premium relative to laggards, the valuation differential increased significantly over time. This **supports the argument that company managers do not have to encounter a trade-off between eco-efficiency and financial performance, and that investors can "exploit environmental information for investment decisions."**

[129] Cremers, Martijn K. J. and Vinay b. Nair. (2005) "Governance mechanisms and equity prices". Journal of Finance 6, 2859-2894.
[130] "Empirical evidence on corporate governance in Europe", Bauer, Gunster, & Otten, *Journal of Asset Management*, 2003
[131] "The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach" Al-Tuwaijri, Christensen & Hughes, *Accounting, Organizations and Society*, 2003
[132] "The economic value of corporate eco-efficiency", Guenster, Derwall, Bauer, & Koedijk, *Ecce Research Note 06-02*, 2006

(3) Hassel and Semenova (2008)[133] add to the academic literature on the relationship between the environmental performance and financial performance (both marketing and accounting) of companies by adding in an industry-focus and including both clean and polluting industries in the US, as well as looking at both environmental preparedness and performance. **With regard to market-based performance, Tobin's Q is used as a measure of performance and the authors find that the "reputational benfefits of environmental preparedness mainly increase market value".**

- **(1) Academic study finds that strong corporate environmental performance shows a neutral link to market-based financial outperformance**

(1) In a study that finds a less definitive link between environmental performance and market-based financial performance (a study which we classify as neutral), Fernando et al. (2010)[134] investigate the relationship between analyst coverage and stock market coverage of US firms, and corporate environmental performance. They find that **"the stock market does not reward either greenness [positive environmental performers] or toxicity [negative environmental performers]."** However, the study does point out that there were lower valuations for the more "toxic" firms, thereby suggesting the opportunity for improvement of environmental performance from toxic to neutral could improve financial valuations.

- **(2) Academic studies find that strong corporate environmental performance shows a positive link to accounting-based financial outperformance**

(1) As previously mentioned, in addition to finding a positive relationship between eco-efficiency and market value, Guenster et al. (2006)[135] also find a **positive link between eco-efficiency and operating performance.**

(2) Konar and Cohen (2001)[136] focus specifically on the market value of firms in the S&P 500 relative to environmental performance and find that **"bad environmental performance is negatively correlated with the intangible asset value of firms**" – or put another way that **poor corporate environmental performers tend to have a poorer accounting-based financial performance.** In particular, they conclude that legally emitted toxic chemicals have a significant effect on the intangible asset value of publicly traded companies, with a 10% reduction in emissions of toxic chemicals resulting in a $34 million increase in market value. Konar and Cohen conclude that **the "magnitude of these effects varies across industries, with larger losses accruing to the traditionally polluting industries"**.

- **(1) Academic study finds that strong corporate environmental performance shows a mixed link to accounting-based financial outperformance**

(1) As previously mentioned, Hassel and Semenova (2008)[137] evaluate the relationship between the environmental performance and financial performance (both marketing and accounting) of both clean and polluting companies in the US. With regard to accounting-based performance, **return on assets (ROA) is used as a measure of "operating performance" and the authors conclude that environmental performance brings operational benefits to financial performance, but in "high risk or polluting industries, environmental performance is costly and reduces the operating performance of companies."** This study thereby demonstrates benefits or costs depending on the industry a company operates in, and is classified as mixed.

[133] "Financial Outcomes of Environmental Risk and Opportunity for US Companies". Hassel & Semenova, *John Wiley & Sons, Ltd and ERP Environment*, 2008
[134] "Does Greenness Matter? The Effect of Corporate Environmental Performance on Ownership Structure, Analyst Coverage and Firm Value", Fernando, Sharfman & Uysal, *Working Paper*, 2010
[135] "The economic value of corporate eco-efficiency", Guenster, Derwall, Bauer, & Koedijk, *Ecce Research Note 06-02*, 2006
[136] "Does the market value environmental performance?", Konar & Cohen, *The Review of Economics and Statistics*, 2001
[137] "Financial Outcomes of Environmental Risk and Opportunity for US Companies". Hassel & Semenova, John Wiley & Sons, Ltd and ERP Environment, 2008

The S in ESG

- **(4) Academic studies find that strong corporate social performance shows a positive link to market-based financial outperformance**

(1) Edmans (2010)[138] analyzes the relationship between employee satisfaction and long-run stock returns and finds that a **value-weighted portfolio of the ''100 Best Companies to Work For in America'' "earned an annual four-factor alpha of 3.5% from 1984 to 2009, and 2.1% above industry benchmarks", while also exhibiting "significantly more positive earnings surprises and announcement returns."** Edmans derives three main implications from these findings: **"First, consistent with human capital-centered theories of the firm, employee satisfaction is positively correlated with shareholder returns and need not represent managerial slack. Second, the stock market does not fully value intangibles, even when independently verified by a highly public survey on large firms. Third, certain socially responsible investing (SRI) screens may improve investment returns."**

(2) In 2007 Ismail, et al.[139] researched the impact of racial diversity (measured by Blau's racial index) on financial performance (measured by Tobin's Q). The researchers find a **direct positive effect of racial diversity on both short-term and long-term measures of financial performance.** They further conclude that **this effect is stronger and more positive pertaining to companies that with munificent resources compared to resource-scare environments.**

(3) Elaborating on the importance of social factors affecting financial performance, in 2009 Fu and Shan[140] tested the effect of corporate social equality (measured by the corporate equality index – CEI) on firm value. Using a sample of CEI-rated, publicly traded firms in the US, the researchers found, between 2002 and 2006, **firms with a higher degree of corporate equality have higher stock returns and higher market valuation** (measured by Tobin's Q). The researchers went on to conclude that **firms with a higher degree of corporate equality also tend to have larger sales, higher profit margins, higher employee productivity, and attract more employees**.

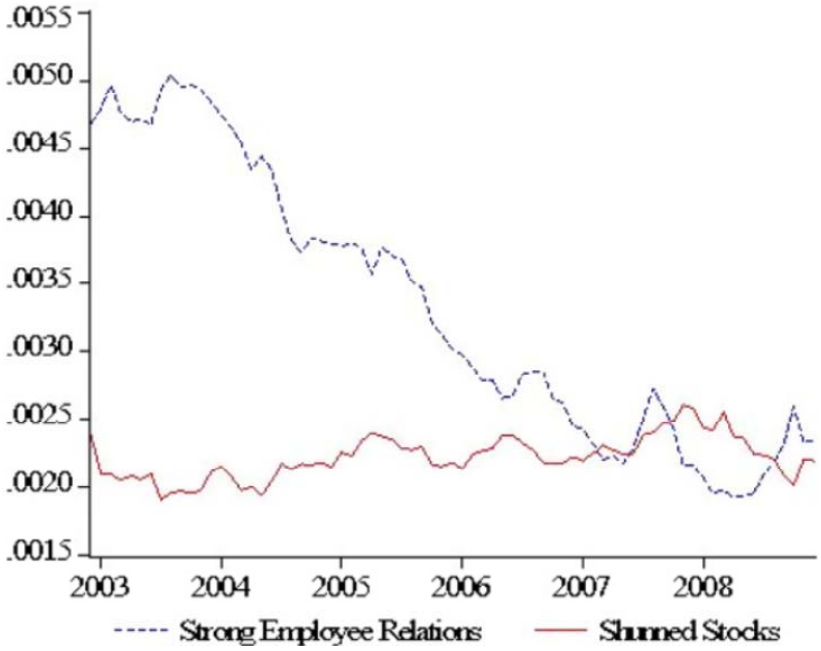
(4) An earlier study by Huselid (1995)[141] that evaluates the links between systems of "High Performance Work Practices" and firm financial performance (both market and accounting) in the US and is based on a sample of nearly 1,000 firms, finds that **"these practices have an economically and statistically significant impact on both intermediate employee outcomes (turnover and productivity) and short- and long-term measures of corporate financial performance."**

- **(1) Academic study find that strong corporate social performance shows a mixed link to market-based financial outperformance**

(1) In the previously mentioned Derwall et al. (2011)[142] study that also includes 2 literature reviews, the authors also **construct both a shunned-stock portfolio and a strong-employee-relations portfolio, and they find that both achieve statistically significant abnormal returns over the period 1992 to 2002. However, the abnormal return generated by the socially responsible portfolio diminishes in the long run, as shown in Figure 20 below.** As a result of these contradictory findings regarding market outperformance over the short vs. long run, we classify this study as mixed.

[138] "Does the stock market fully value intangibles? Employee satisfaction and equity prices", Edmans, *Journal of Financial Economics*, 2010
[139] "The impact of racial diversity on intermediate and long term performance: the moderating role of environmental context", Ismail, Murthi, Richard, *Strategic Management Journal*, 2007
[140] "Corporate Equality and Equity Prices: Doing Well While Doing Good?", Fu, Shan, *Economics and Econometrics Research Institute (EERI)*, 2009
[141] "The impact of human resource management practices on turnover, productivity, and corporate financial performance", Huselid, *Academy of Management Journal* 38, 635–672, 1995
[142] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk, & Horst, *Journal of Banking and Finance*, 2011

Figure 20: Time-Varying Monthly Alphas of Strong Employee Relations and Shunned Stocks Portfolios



Source: "A tale of values-driven and profit-seeking social investors" Derwall, Koedijk, & Horst, Journal of Banking and Finance, 2011

- **(2) Academic studies find that strong corporate social performance shows a positive link to accounting-based financial outperformance**

(1) Faleye and Trahan (2006)[143] study the effect of labor-friendly corporate practices and find that **"labor-friendly firms are received positively in the market and outperform comparable firms on productivity, profitability, and value creation."** In addition, "human capital dependent firms are more likely to be labor-friendly and the benefits of improved performance accrue mostly to such firms." The study therefore concludes that **"the benefits of devoting significant resources to employee welfare appear to outweigh the costs."**

(2) As previously mentioned, Huselid's (1995)[144] study into "High Performance Work Practices" and firm financial performance finds a **positive relationship between High Performance Work Practices and both market and accounting-based financial performance**.

- **(1) Meta study finds that strong corporate social performance shows a positive link to accounting and/or market-based financial outperformance**

(1) Crook et al (2011)[145] meta-analyzed the effects of human capital drawn from 66 studies pertaining to corporate engagement of human capital–firm performance relationship. They found that **engagement of human capital relates strongly to performance, especially when the human capital in question is not readily tradable in labor markets and when researchers use operational performance measures that are not subject to profit appropriation**. More specifically, firms that invest in only one group are likely to miss important opportunities for enhancing financial performance.

[143] "Is what's best for employees best for shareholders?" Faleye, & Trahan, *Working Paper: Northeastern University*, 2006
[144] "The impact of human resource management practices on turnover, productivity, and corporate financial performance", Huselid, *Academy of Management Journal* 38, 635–672, 1995
[145] Crook, T. Russell, James G. Combs, David J. Ketchen, Jr., Samuel Y. Todd, David J. Woehr, "Does Human Capital Matter? A Meta-Analysis of the Relationship Between Human Capital and Firm Performance," Journal of Applied Psychology, Vol. 96, No. 3 (2011), pp. 443-456.

Sustainability and Corporate Financial Performance
ESG Studies: Key Themes & Findings

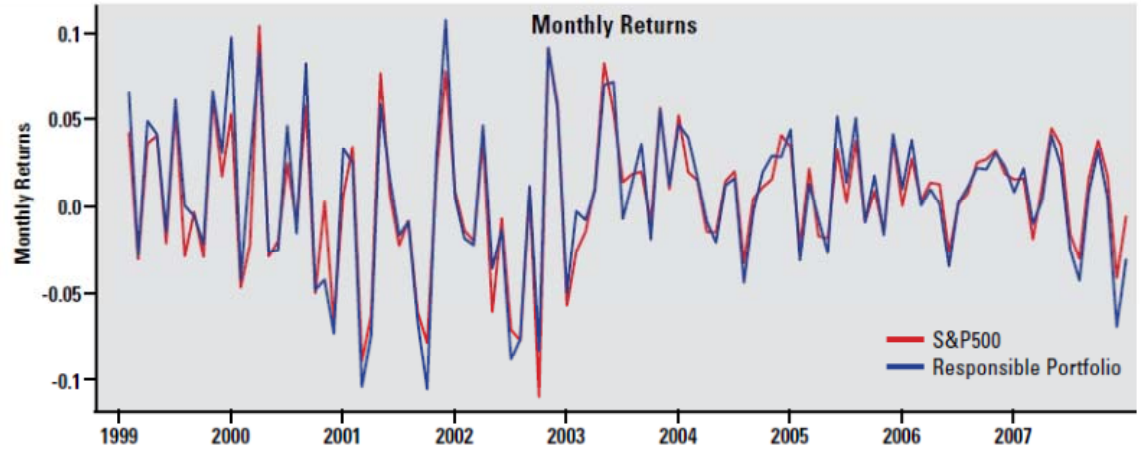
A series of final hypothetical tests concluded that **studies whose human capital measures required within-firm aggregation reported weaker results than studies whose measures did not**.

Aggregate ESG Studies

- **(1) Academic study finds that strong corporate ESG performance shows a positive link to market-based financial outperformance**

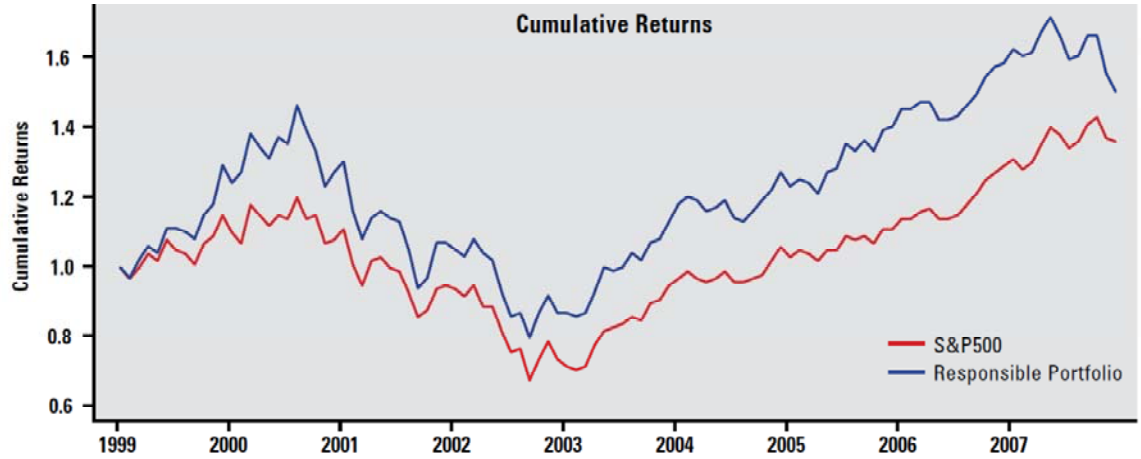
(1) Landier and Nair (2009)[146] demonstrate that **companies responsible with regard to ESG dimensions can outperform their conventional peers**. Using the KLD database, they derive a "responsible" portfolio comprised of 150 firms belonging to the S&P 500 that did not have concerns in environment, product safety and employee categories (note: this selection process did not eliminate industries as a whole). Landier and Nair subsequently **compared performance of the responsible portfolio with the S&P 500 and found that it had "slightly superior average returns and only marginally more risk despite having 70% less stocks."** These findings are illustrated in Figures 21 and 22 below.

Figure 21: Industry-Balanced Responsible Portfolio vs. S&P 500, Monthly Returns



Source: Investing for Change: Profit from Sustainable Investment", Landier, Augustin, & Nair, Oxford University Press, 2009

Figure 22: Industry-Balanced Responsible Portfolio vs. S&P 500, Cumulative Returns



Source: Investing for Change: Profit from Sustainable Investment", Landier, Augustin, & Nair, Oxford University Press, 2009

[146] "Investing for Change: Profit from Sustainable Investment", Landier, Augustin, & Nair, *Oxford University Press*, 2009

Section IV: Sustainability and Fund Performance

Introduction

Section IV of this paper reviews **a selection of 10 leading academic studies** (9 individual studies of funds and 1 literature review) and analyzes the relationship between **the market-based performance of Socially Responsible Investing (SRI) funds relative to non-SRI funds.** Interestingly, none of the studies analyzing funds (as opposed to securities) performance looked at what we could categorize as CSR or ESG funds. As a result this section is limited to a review of SRI fund performance. This may well reflect the fact that at present SI funds of any kind are generally categorized as "SRI" by the market.

In effect, when looking at the performance of a fund we are capturing 2 possibilities: (i) that the fund does or does not have the right factors to capture sustainability; or (ii) that the fund manager does not have the skill to capture the factors in terms of implementation. Since we have already seen that the preponderance of evidence is that a better risk adjusted return does exist for more sustainable securities, then we believe we are more likely to be picking up implementation ability if funds cannot show this.

For SI to perform in market terms, there should be a **positive correlation between an SRI fund's performance and higher market-based performance** – in this instance, fund returns.[147]

Our extensive investigation into the existing body of academic studies in the field of Sustainable Investing concludes that **SRI funds yield returns comparable to those of conventional benchmarks. The 9 individual academic studies find generally neutral or mixed results with one instance of market out-performance, and the literature review finds overwhelmingly (6) neutral or mixed results, with only one negative correlation between SRI fund performance and returns.**

Other key observations noted from the review of academic studies are as follows:

- Of the studies analyzed, a minority of the sample periods extend beyond 2008, and thus our thesis (risk-return imbalance) may not be observed as frequently in today's environment because of the financial crisis.
- It can be difficult to decouple fund performance from management skill – this is particularly evident from some of the studies categorized here as "mixed" where SRI stocks outperform in "theory", but SRI funds do not outperform in "practice".
- There is some evidence that SRI funds with specialized fund managers perform better than those with general fund managers.

Our Framework for Analyzing Studies:

(1) Overall, we looked at 9 studies of funds and 1 literature review, and then divided as follows:
   a) Fund-based individual academic studies; and
   b) Fund-based literature reviews (note: these review a samples of studies and determine an overall effect from the number of positive, neutral or negative studies).

(2) We show the date range of the studies themselves, and the underlying sample date ranges.

[147] A ratio devised by James Tobin of Yale University, Nobel laureate in economics, who hypothesized that the combined market value of all the companies on the stock market should be about equal to their replacement costs. The Q ratio is calculated as the market value of a company divided by the replacement value of the firm's assets. Tobin's Q can therefore be defined as conceptually equivalent to the value added by management, as determined by the market. Sources: Investopedia; DBCCA analysis 2011

(3) We determine whether they show positive, neutral or negative correlation to higher market-based performance

(4) By examining the major conclusions of each academic study, and quoting from the abstracts or texts, we are able to highlight the contributions of specific elements of sustainability to specific drivers of performance.

As with the rest of this report, it is important to note that we address correlation here, not causality. In general, the statistical studies we have collected cannot or do not establish causality in the above relationship with any degree of confidence. Further, only several studies look to identify and test to what extent other factors mediate the relationship between social performance and financial performance (for example, credit ratings, reputation, etc.).

Discussion of SRI Fund Studies: Key Themes and Findings

Figure 23: Summary of SRI Studies: Correlation to Market-Based Performance

SRI Academic Studies	Correlation to Higher Market-Based Performance (Returns)	No. of Studies	Date Range of Studies	Date Range of Samples
Fund Studies	Positive	1	2010	2001-2009
Fund Studies	Neutral	5[148]	2002-2011	1990-2010
Fund Studies	Mixed	2	2008-2011	1997-2007
Fund Studies	Negative	0	N.A	N.A
SRI **1 Literature Review: Funds**	**Correlation to Higher Market-Based Performance (Returns)**	**No. of Studies Reviewed**	**Date Range of Studies**	**Date Range of Samples**
Literature Review Part II: Funds	Positive	0	N.A	N.A
Literature Review Part II: Funds	Neutral	6[149]	2005-2007	1989-2003
Literature Review Part II: Funds	Negative	1	2005	1963-2001

Note: Literature review is: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011. Within this literature review there is a review of Securities studies, which looks at 7 studies; and a review of Fund studies which looks at 7 studies. The former is outlined in Section III. See footnotes for double-counting of studies
Source: DBCCA analysis 2012

The academic studies categorized here – 9 individual academic studies and 1 literature review included within Derwall et al.'s 2011 study[150] – include a variety of definitions for "Socially Responsible", ranging from ethics to more recent "current SRI" (similar to ESG or Sustainable Investing). As a result of these varying definitions and as previously outlined in Section III, a brief discussion of the types of screening used in this form of investing is warranted as **SRI investors (or screeners) employ a mix of negative or exclulsionary (values-driven) and positive (risk and return drive) screening techniques to maximize financial return within a socially aligned investment strategy**.

Applications of Positive vs. Negative (or Exclusionary) Screening in SRI

Investors that implement positive screens tilt their portfolios (and funds) towards stocks that rate well on nominated criteria ranging from ethical values to environmental, social and governance factors. Negative (or exclusionary) screening restricts the investment universe in a more values-driven fashion, and it commonly adheres to two established forms: industry-based and norm-based. Industry-based screening "generally excludes companies on the basis of industry membership (i.e. often based on a cut-off point method where companies are excluded if more than a certain percentage of their annual turnover is derived from an unethical industry, e.g. weapons.)" and requires value judgments on what constitutes "good" and "bad" industries. Norm-based negative screening is a less subjective and arguably more reliable technique that excludes companies which explicitly violate a number of conventions. A greater trend toward norm-based negative screening can be observed, as it is easier for investors for investors to reach consensus upon agreement violations committed by firms as opposed to corporate participation in a "bad" industry.[151]

[148] Bauer et al. (2007) is included in this literature review, in addition to as an individual academic study for SRI fund performance (with neutral results for both)
[149] Bauer et al. (2007) is included in this literature review, in addition to as an individual academic study for SRI fund performance (with neutral results for both)
[150] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011.
[151] See, for example, "Evaluating the performance of socially responsible investment funds: A holding data analysis", Stenstrom, & Thorell, *Stockholm School of Economics (Master thesis within Finance),* 2007

Additionally, the use of positive vs. negative screens varies with geography, especially with regard to funds. Indeed, about one quarter of US socially responsible funds are negatively screened against one of the "sin" screens (typically, tobacco). Furthermore, there are also differences in terms of positive or qualitative screens used. For example, US funds are more active in terms of shareholder advocacy and on community investing than their European peers."[152]

The majority of academic SRI studies we analyze in this Section do not characterize or restrict their samples on the basis of screening techniques. Rather, our sample of studies focuses primarily on the returns achieved by funds with an SRI focus or mandate relative to conventional (non-SRI) funds. **Investigations into potential SRI fund outperformance currently yields mixed results among academics and the investor community on the whole, culminating in the (perhaps misleading) perception that "the market does not price social responsibility characteristics"[153]**. Key reasons for this are as follows:

- Most current SRI funds tend to "reflect a hybrid of negative and positive social responsibility screens"[154], with an outperformance of "sin stocks" (lost via negative screens) and an outperformance of sustainable firms (found via positive screens) yielding neutral or mixed results. An example of sin stocks outperforming is evident in Hong and Kacperczyk's (2009) "The Price of Sin: The Effects of Social Norms on Markets"[155], which finds that these stocks have "higher expected returns than otherwise comparable stocks, consistent with them being neglected by norm-constrained investors and facing greater litigation risk heightened by social norms." This study analyzes public companies involved in producing alcohol, tobacco and gaming and finds that "sin stocks are less held by norm-constrained institutions such as pension plans as compared to mutual or hedge funds that are natural arbitrageurs, and they receive less coverage from analysts than do stocks of otherwise comparable characteristics." This demonstrates how the market can have dissonant results, pricing sin stocks higher due to greater expected returns from a fundamental perspective, while pricing sustainable firms based on very differente sets of sustainability attributes.
- In addition, comparisons between the returns of SRI and conventional funds are influenced by managerial skills and timing activities, as well as the additional expenses associated with SRI transactions[156]. With regard to the former, there is substantial literature addressing the tilts and biases evident in SRI stock selection by SRI funds and index creators (for example, an emphasis on large-cap, European stocks, and specific sectors such as consumer staples vs. energy), and how these different tilts contribute to confusion over SRI relative performance.[157] With regard to SRI expenses, Geczy et al. (2005)[158] find that SRI portfolios impose a cost constraint that is not present in the broader fund universe[159].

When looking specifically at individual academic studies of SRI fund performance (i.e. excluding the literature review), SRI has a mixed performance (much like the securities and indices studies outlined in Section III), with neutral/mixed to positive results in academic studies. However, the literature review of fund studies has different findings, with neutral to negative results. Key findings are as follows:

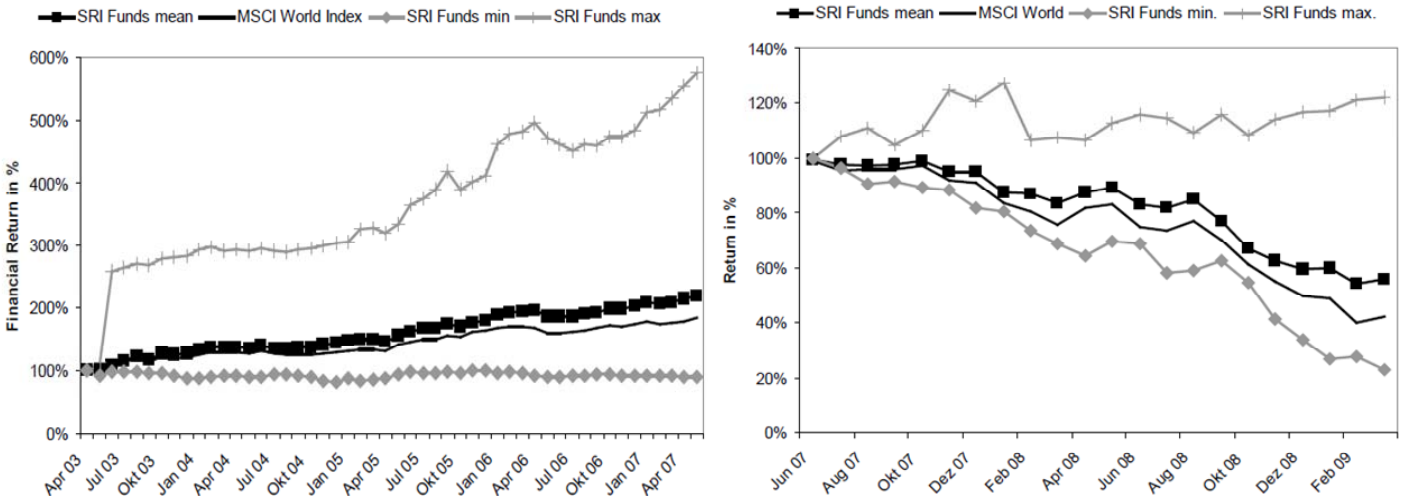
- **(1) Academic study of SRI funds has found SRI outperformance**

(1) Weber et al. (2010)[160] **find outperformance of SRI funds in their analysis of 151 SRI funds relative to the MSCI index from 2001 to mid-2009, concluding that SRI Funds yield returns above average**. These findings are clearly

[152] "Socially responsible investing in the global market: Performance of US and European funds", Cortez, Silva & Areal, *Working Paper Series*, 2009
[153] Hamilton et al., 1993, as cited in "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011
[154] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, *Journal of Banking and Finance*, 2011
[155] Journal of Financial Economics, 93, 15-36
[156] "Wages of social responsibility", Statham & Glushkov, *Financial Analyst Journal*, 2009.
[157] See, for example, Bank of America Merrill Lynch's many research reports on SRI
[158] "Investing in Socially Responsible Mutual Funds", Geczy, Stmbaugh & Levin, Working Paper The Wharton School, Pennsylvania, 2005
[159] The study finds that this SRI cost depends on the investor's views about asset pricing models and stock-picking skill by fund managers: (i) to those investors that rule out managerial skill (i.e. a market-index investor), the cost of the SRI constraint is typically just a few basis points per month; (ii) to an investor who still disallows skill but instead believes to some degree in pricing models that associate higher returns with exposures to size, value, and momentum factors, the SRI constraint is much costlier, typically by at least 30 basis points per month; and (iii) to those investors whose beliefs allow a substantial amount of fund-manager skill (i.e., investors who rely heavily on individual funds' track records to predict future performance) the SRI constraint imposes large costs.
[160] "Financial performance of SRI funds between 2002 and 2009", Weber, Mansfeld & Schirrmann, *Working Draft*, 2010

illustrated in Figure 24 below, demonstrating SRI funds outperformance in both the bull (2003 to 2007) and bear (2007 to 2009) phases analyzed.

Figure 24: Monthly Returns of MSCI World and SRI Funds Analyzed in the Bull Phase (left) and Bear Phase (right)



Source: "Financial performance of SRI funds between 2002 and 2009", Weber, Mansfeld & Schirrmann, Working Paper, 2010

- **(5) Academic studies of SRI funds yield neutral results[161]**

(1) Bauer et al. (2002)[162] study an international sample of 103 ethical mutual funds and document that **ethical funds do not underperform conventional funds**. Furthermore, they provide insight into the "learning curve" of ethical mutual funds—newly launched funds do not perform as well as older funds, which have finally caught up with their conventional peers.

(2) In a subsequent study – this time of Canadian ethical mutual funds (a relatively unexplored area) – Bauer et al. (2007)[163] continue to disagree with the claim that "imposing ethical constraints leads to weaker investment performance," finding that **no significant difference exists between the returns of ethical and conventional mutual funds**.

(3) In their analysis of 46 funds spread over European and American markets during the 1996-2008 period, Cortez et al. (2009)[164] also suggest that the **"majority of global socially responsible funds' performance is neutral compared to both conventional and socially responsible benchmarks."**

(4) Similarly, Biehl and Hoepner's recent (2011)[165] working paper looks at 50 UK funds over a twelve year period (1998-2010) concludes that neither a linear nor curvilinear relationship exists between ethical and financial performance; therefore, **an increase in social investment does not necessarily reduce fund returns, as many investors might fear.**

(5) Another country-focused study – this one by Amenc and Le Sourd (2010)[166] –, analyzing 69 French SRI funds from January 2002 to December 2009, finds that **the large majority of funds (93%) achieve insignificant alpha, thereby augmenting existing evidence that SRI does not harm CFP**. The mean returns of conventional and SRI indices and fund indices are outlined in Figure 25 below.

161 Note: unless otherwise indicated the following studies of funds primarily employ a mixture of positive and/or negative screenings when selecting their samples
162 "International evidence on ethical mutual fund performance and investment style", Bauer, Koedijk & Otten, *Financial Economics,* 2002. Note: 2005 edition is in the *Journal of Banking and Finance*
163 "The Ethical Mutual Fund Performance Debate: New Evidence from Canada", Bauer Derwall, & Otten, *The Journal of Business Ethics*, 2007
164 "Socially responsible investing in the global market: Performance of US and European funds", Cortez, Silva & Areal, *Working Paper Series*, 2009
165 "SRI Funds: Does more social mean less financial performance", Biehl, & Hoepner, *Working Paper*, 2011 (note: a work-in-progress)
166 "Performance of socially responsible investment and sustainable development in France: An update after the financial crisis", Amenc & Sourd, *EDHEC-Risk Institute*, 2010

Figure 25: Measure of Alpha for SRI Funds, 2007 to 2009

INVESTMENT ZONE	January 2002 – December 2009	Mean return	Standard deviation	Skewness	Excess Kurtosis	Cornish-Fisher VaR (95%)	Sharpe ratio
	Conventional indices						
France	SBF 250	4.67%	21.74%	-1.01	7.59	5.21%	0.08
Euro Zone	DJ EURO STOXX	3.19%	21.90%	-1.00	7.14	5.31%	0.01
Europe	DJ STOXX 600 E	2.83%	20.61%	-1.00	9.37	4.87%	0.00
World	MSCI WORLD	-0.62%	18.57%	-0.62	7.16	4.31%	-0.19
	SRI indices						
France	DJSI FRANCE COMPOSITE	4.98%	23.78%	-0.62	5.41	5.53%	0.09
Euro Zone	ASPI EUROZONE E	3.06%	22.68%	-0.88	6.67	5.44%	0.01
	DJ EURO STOXX SUSTAINABILITY	2.21%	23.74%	-0.69	5.28	5.64%	-0.03
	E. CAPITAL ETHICAL EURO	1.84%	21.65%	-0.82	7.56	5.11%	-0.05
	DJ EURO STOXX SUSTAIN 40	3.20%	23.63%	-0.58	4.89	5.53%	0.01
Europe	FTSE4GOOD EUROPE (E)	2.30%	21.42%	-0.91	8.84	5.04%	-0.03
	FTSE4GOOD EUROPE 50 (E)	0.73%	21.93%	-0.86	9.07	5.14%	-0.10
	DJ STOXX SUSTAINABILITY	1.95%	21.28%	-1.02	9.29	5.06%	-0.04
	DJ STOXX SUSTAIN 40	1.88%	21.46%	-0.83	8.20	5.03%	-0.05
World	DJSI WORLD E	0.26%	19.53%	-0.66	8.04	4.50%	-0.13
	Average SRI fund indices (All SRI funds)						
	FRANCE EURO-ZONE EUROPE	1.32%	18.97%	-0.97	8.06	4.55%	-0.08
	WORLD	-0.39%	17.80%	-1.01	9.08	4.28%	-0.18
	Average SRI fund indices (Green funds)						
	FRANCE EURO ZONE EUROPE	3.38%	20.68%	-0.82	7.49	4.86%	0.02
	WORLD	1.14%	18.85%	-1.04	8.24	4.57%	-0.09
	Average SRI fund indices (Traditional SRI funds)						
	FRANCE EURO-ZONE EUROPE	1.28%	18.95%	-0.95	7.93	4.55%	-0.09
	WORLD	-2.13%	16.74%	-0.89	9.24	3.98%	-0.30

Source: "Performance of socially responsible investment and sustainable development in France: An update after the financial crisis", EDHEC-Risk Institute, 2010

- **(2) Academic studies of SRI funds yield mixed results[167]**

(1) The importance of fund management is emphasized by Gil-Bazo et al. (2008)[168] in their study of US equity funds during the 1997 to 2005 period. They find that **"SRI funds run by *specialized management* companies outperform comparable**

167 Note: unless otherwise indicated the following studies of funds primarily employ a mixture of positive and/or negative screenings when selecting their samples
168 "Performance of socially responsible mutual funds: Role of fees and management companies", Gil-Bazo, Ruiz-Verdu, & Santos, *Working Paper Department of Business Administration, Universidad Carlos III de Madrid*, 2008

conventional funds by more than 2.6% annually."[169] On the other hand, SRI funds run by *generalist management* are seen to underperform the market, but not to a highly significant degree. As a result we categorize this study as mixed.

(2) Capelle-Blancard and Monjon (2011)[170] study variation in performance across French SRI funds using as explanatory variables the intensity of the screening process, whether fund managers focus on specific ESG issues and whether they apply sectoral or transversal screens, and the quality of the extra-financial process. **The authors show that SRI mutual funds do not outperform the market**. Then, they show that the SRI screening process may have a cost: the financial performance of SRI funds is hurt by the exclusion of non-socially responsible stocks. However, similar to Barnett and Salomon (2006), they also find that this initial negative effect is partly offset as the number of screens increases. Further, they show that only sectoral screens decrease financial performance, while transversal screens (commitment to UN Global Compact Principles, ILO/Rights at Work, etc.) do not have any impact. Finally, when the quality of the SRI selection process is proxied by the rating provided by Novethic, its impact is not significant, while a higher strategy distinctiveness amongst SRI funds, which also gives information on the quality of the selection process, is associated with better financial performance.

- **(1) Literature review of SRI fund studies have found generally neutral – and one negative – results**

(1) Finally, the literature review by Derwall et al. (2011)[171] which includes a review of studies of SRI funds (in addition to securities), finds generally neutral (6 neutral and 1 negative) results[172]. See Figure 26 below for more detail.

Figure 26: Studies on the Performance of SRI Mutual Funds[173]

Studies on SRI mutual funds.

Study	Region and period	# SRI (peer) funds	Results
Bauer et al. (2005)	US, UK, Germany 1990–2001	103 (309)	SRI funds and conventional funds differ in terms of style but produce similar alphas, in aggregate. SRI funds do deliver lower alpha than conventional funds in the early 1990s but then catch up with conventional funds
Bauer et al. (2006)	Australia 1994–2003	35 (291)	Australian SRI and conventional funds have different investment styles but produce similar alphas in aggregate. Domestic (but not international) SRI funds have lower alphas during the 1992–1996 period but later catch up with conventional fund
Bauer et al. (2007)	Canada 1994–2003	8 (267)	Canadian SRI and conventional funds earned similar alphas in aggregate. Style differences between SRI and conventional funds are smaller compared to earlier studies
Barnett and Salomon (2006)	US 1972–2000	61 (–)	Concludes that losses due to poor diversification are offset by better security selection as screening intensifies. When the number of screens increases, alpha declines at first, but rebounds as number of screens reaches a maximum
Renneboog et al. (2008a)	17 Countries 1991–2003	463 (16,036)	European and Asian SRI funds, mainly internationally oriented, underperform domestic factor models, but SRI funds do not underperform conventional funds in most countries
Gregory and Whittaker (2007)	UK 1989–2002	32 (160)	SRI funds and conventional funds produce similar alphas. Short-term fund performance persists more within the SRI fund universe than in the conventional fund universe
Geczy et al. (2005)	US 1963–2001	35 (894)	The "SRI constraint" on optimal fund investment is not significant for an investor who rules out skilled fund management and who believes in the CAPM, but is material when the investor believes in multifactor models. The constraint is large (1.5% per month) for investors with strong beliefs in stock picking

Source: "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk & Horst, Journal of Banking and Finance, 2011

[169] They state these findings are "substantial and highly statistically significant in all specifications"
[170] "The performance of socially responsible funds: does the screening process matters?", Gunther Capelle-Blancard & Monjon, *CEPII Working paper*, No 2011-12
[171] "A tale of values-driven and profit-seeking social investors", Derwall, Koedijk Horst, *Journal of Banking and Finance*, 2011
[172] Note, this study is categorized into Literature Review I and Literature Review II in the "Summary of Current SRI Studies" table, even though both reviews are taken from one study
[173] Bauer et al. (2007) is included in this literature review, in addition to as an individual academic study for SRI fund performance (with neutral results for both)

Appendix I: Shareholder Engagement and Active Ownership

As mentioned in Section I of this paper, shareholder engagement and active ownership refer to the growing practice of monitoring corporate behavior and seeking changes where appropriate through dialogue with companies or through the use of share ownership rights, such as filing shareholder resolutions. With regard to ESG, this technique is often employed in attempts to improve a company's performance in this area, for example through the voting of company shares and/or the engagement of corporate managers and boards of directors in dialogue on ESG issues. This practice is a growing trend and is encouraged by institutions seeking to promote Sustainable Investing – for example, the Second Principle of the UN PRI states: "We will be active owners and incorporate ESG issues into our ownership policies and practices." Given that the UN PRI currently has over 1,000 investment institutions as signatories, with assets under management of approximately $30 Trillion[174], this Principle is clearly of substantial and growing importance.

While we have not looked at shareholder engagement and activism in this paper, we do note below some studies that investigate the outcomes of shareholder engagement on both CSP and financial performance . We do note that this literature is less well developed compared to the literature on CSR.

(1) A 2012 case-study conducted by Van Buul and Van der Velden[175] on a Responsible Equity Portfolio (REP) created by Dutch asset manager PGGM revealed the importance of active ownership and engagement in sustainable investing. The REP was created with the long-term investment horizon that integrated financial analysis and ESG factors with active ownership. **The investment for REP began January 2009 with an initial mandate of €1 billion. Since then, it has grown to €3 billion in committed capital and has invested approximately €2.4 billion as of January 2012**. While traditional SRI or best-in-class approaches would simply seek the best ESG performers within a given sector, REP's holistic approach allowed for companies with currently poor ESG profiles to be included in the portfolio by setting engagement target. **REP did/does not invest in companies that appeared to be financially attractive when modeled over the next few years, but had a poor ESG profile with limited chances of engagement success over the long-term,** which has been a fundamental part of their investment strategy. Although the authors did not disclose the performance of the fund, the increasing commitment of capital to the investment strategy is a positive sign of the investment strategy's effectiveness.

(2) Reid and Toffel's (2009) study[176] tested a sample of 524 firms between 2006 and 2007 using KLD data and CDP surveys to explore corporate responses to shareholder activism. Their findings are consistent with the idea that **firms are more likely to agree to engage in practices consistent with the aims of a social or environmental movement if they or other firms in their industry have already been targeted by a shareholder resolution on a related issue**. More specifically, they find that **firms that have been targeted, and firms in industries in which other firms have been targeted by shareholder actions on environmental issues are more likely to publicly disclose information to the CDP and possibly other governmental organizations.** The researchers go on to conclude that **pressure from both shareholder activists and government regulators may elicit change in organizational practices, and that challenges mounted against a single firm or industry may spillover to influence corporate behavior.**

(3) Becht et al.(2008)[177] collected and analyzed investment holding data in collaboration with corporate engagement activities by the Hermes UK pension fund (HUKFF) which held shares in forty-one (41) companies between 1998-2004**. The researchers found that a high proportion of the corporate engagement interventions were successful and results in substantial shareholder gains, particularly in response to restructurings and board changes due to active ownership by shareholders**. In conclusion**, these successful outcomes account for a large proportion of the significant**

[174] As of April 2012. Source: UN PRI
[175] Van Buul, O. Van der Velden, A (2012). Really Investing for the Long-Term: A Case Study. Rotman International Journal of Pension Management. Volume 5, Issue 1.
[176] Reid, E.M. Toffel, M.W (2009). Responding to Public and Private Politics: Corporate Disclosure of Climate Change Strategies. Harvard Business School. Strat. Mgmt. J., 30: 1157–1178.
[177] Becht, M. Franks, J. Mayer, C. Rossi, S. (2008). Returns to Shareholder Activism: Evidence from a Clinical Study of the Hermes UK Focus Fund. Oxford University Press.

Appendix I
Shareholder Engagement and Active Ownership

outperformance of the fund relative to a variety of benchmarks over the sample period, thus emphasizing the importance of shareholder activism and active ownership.

Appendix II: Implied Cost of Capital

As background to our investigation into the existing academic literature that analyzes the broad field of Sustainable (or Responsible) Investing, we provide here a brief theoretical basis for the phenomenon we observe: *strong ESG firms may be enjoying both equity price outperformance and a lower cost of equity capital in the short run*.

We look here, in particular, to relate stock price outperformance with a reduced implied cost of equity capital (ICC), and find that market inefficiencies allow for both to coexist in the short to medium term. In other words, the market may currently be undervaluing high performing ESG firms to a degree at which the commonly regarded risk-return equilibrium does not exist. This presents a major potential investment opportunity – higher returns can be achieved at lower risks.

Following the direction of academic thought, we consider only those studies that analyze corporate cost of equity capital using the *ex ante* or expected returns model (i.e. ICC), rather than the *ex post* or realized returns model. The former predicts the cost of equity capital using analyst forecasts, whereas the latter estimates it using traditional asset pricing models. Several of the major advantages to using the *ex ante* ICC model are summarized below:

(1) "Unlike traditional measures of firm value (e.g., Tobin's Q), it allows one to control for differences in growth rates and expected future cash flows when estimating firm's cost of equity"[178]
(2) "It circumvents the use of noisy realized returns and the failure of traditional asset pricing models to deliver accurate estimates of firm-level cost of equity capital"[179]
(3) "The relatively short time period for which firm-level environmental profile data are available makes the ICC (which relies more on cross-sectional variation across firms) an attractive proxy for expected returns compared to realized returns"[180]

Basic financial theory suggests the following:

(1) Equity Price (P) = Earnings (E) / ICC, where E is adjusted for free cash flow and plowback, and ICC is adjusted for time.

Thus,
(2) ICC = E / P, where E / P comprises the earnings yield, and
(3) 1 / ICC = P / E, where P / E comprises the earnings multiple.

In the short-term, strong ESG firms may have both equity price outperformance at the security level (earnings multiple increases) and lowered ICC (earnings yield falls). However, violating the dictates of Modern Portfolio Theory, this anomaly (i.e. greater return realized at lower risk) is created by market inefficiency[181], but cannot last in the long-term – a time period which remains undefined. Consequently, investors (and companies) that exploit this inefficiency will enjoy an early mover advantage that can last decades before risk-return equilibrium is established.

Reproduced below, observations of this phenomenon extend well beyond theory and have been documented by Guenster et al. (2006)[182] for the relationship between eco-efficiency and firm value: "A positive (though potentially asymmetrical) relation between eco-efficiency and firm value is consistent with the notion that eco-efficiency is a "priced" factor, i.e., that investors drive up the value of environmental leaders by lowering their expected stock return and their cost of capital. However, up to this point, the association between Tobin's Q and eco-efficiency does not reconcile with the evidence by Derwall et al.

[178] Hail and Leuz, 2006; as cited in "Does corporate social responsibility affect the cost of capital?", Ghoul, Guedhami, Kwok, & Mishra, *Journal of Banking and Finance*, 2011
[179] Pastor et al., 2008; as cited in "Does corporate social responsibility affect the cost of capital?", Ghoul, Guedhami, Kwok, & Mishra, *Journal of Banking and Finance*, 2011
[180] "Is Default Risk Negatively Related to Stock Returns?", Chava and Purnanandam, 2010, *Review of Financial Studies*, 23, 2523-2559
[181] "Is Default Risk Negatively Related to Stock Returns?", Chava and Purnanandam, 2010, *Review of Financial Studies*, 23, 2523-2559
[182] "The economic value of corporate eco-efficiency", Guenster, Derwall, Bauer, & Koedijk, Ecce Research Note 06-02, 2006

Appendix II
Implied Cost of Capital

(2005)[183] that eco-efficient stock portfolios have realized anomalously high risk-adjusted returns relative to their least eco-efficient counterparts. Their results raise the possibility that the market has undervalued eco-efficient firms relative to less eco-efficient companies. In an equilibrium setting, the expected returns on a group of eco-efficient companies can be lower than the returns on a group of less eco-efficient companies because eco-efficient firms are deemed less risky. After adjustment for these risk differences, there should be no abnormal difference in return. However, under the hypothesis that the market reacts to eco-efficiency with a drift, firms can be under- or overvalued and risk-adjusted portfolio returns can be anomalous."

While the duration of this market inefficiency remains uncertain, empirical evidence supports the notion that "the relationship between realized return and risk can be anomalously negative even for reasonably long sample periods"[184]. To this end, "Lundblad (2007) shows that a very long sample of realized returns is needed to establish a positive relationship between risk and return"[185].

Accordingly, the benefits of ESG may uniquely arrive on two distinct levels: outperformance in share prices and reduction in implied cost of equity capital. Commonly perceived as a long-term sustainable investment strategy, ESG or Responsible Investing may actually present a rare opportunity for investors seeking to mitigate risk and increase returns in the short to medium term – effectively, the duration of such a market inefficiency in pricing corporate responsibility.

[183] "The Eco-Efficiency Premium Puzzle," Derwall, Jeroen, Guenster, Bauer & Koedijk. *Financial Analysts Journal*, March/April 2005.
[184] "Environmental externalities and the cost of capital", Chava, *Working Paper*, 2011 – see Elton, 1999, for examples
[185] As cited in "Environmental externalities and the cost of capital", Chava, *Working Paper*, 2011

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