

A joint report by
The Asset Management Working Group of the
United Nations Environment Programme Finance Initiative
and Mercer

Demystifying Responsible Investment Performance

A review of key
academic and broker research
on ESG factors



UNEP Finance Initiative
Innovative financing for sustainability

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October 2007

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Mystify

Main Entry: **mys·ti·fy**

Pronunciation: 'mis-t&-''fi

Function: *transitive verb*

Inflected Form(s): **-fied; -fy·ing**

Etymology: French *mistifier*, from *mystère*
mystery, from Latin *mysterium*

1: to perplex the mind of: BEWILDER

2: to make mysterious or obscure <*mystify*
an interpretation of a prophecy>

- **mys·ti·fi·er** / *noun*

- **mys·ti·fy·ing·ly** / *adverb*

Demystify

Main Entry: **de·mys·ti·fy**

Pronunciation: (")dE-'mis-t&-''fi

Function: *transitive verb*

to eliminate the mystifying features of

- **de·mys·ti·fi·ca·tion** / *noun*

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1

Foreword from the United Nations Environment Programme



It has been 15 years since 28 banks and their USD 2 trillion in assets gathered in New York to sign a United Nations Environment Programme commitment to sound environmental management. Since then, the commitment between UNEP and those original 28 banks has grown into a unique public-private partnership with 175 banks, insurers and investment firms from 38 countries. Today, it is known as the UNEP Finance Initiative, or simply UNEP FI.

In the transformational years since UNEP FI began, financial services and capital markets have operated in a rapidly changing and globalized economy that has delivered the hope of prosperity for more people and, at the same time, intensified our collective environmental and social challenges.

The threat of climate change impacts, the struggle to protect fragile ecosystems, and the understanding of the economic and social impacts of urban and industrial pollution, have embedded themselves in the global public perception as real and present dangers. We cannot underestimate the influence of financial services and the potential impacts of the world's most powerful private institutions on delivering a more intelligent management of the environment and its nature-based assets. Nor should we forget the fundamental importance of these assets that intimately support our financial institutions, economies, capital markets and, ultimately, all life on Earth.

For these reasons, the report by the UNEP FI Asset Management Working Group, “*Demystifying Responsible Investment Performance*”, is welcomed by UNEP as a valuable contribution to our collective understanding of the rapidly evolving responsible investment field. Building a robust case that shows definitively how sound integration of environmental, social and governance factors does not compromise investment performance, and in many cases can enhance it, is an important step for the global investment industry.

Now, with more than 230 institutional investors from 30 countries representing USD 10 trillion in assets backing the Principles for Responsible Investment, we have the clearest of signals to the broader investment community and capital markets that environmental, social and governance considerations have to be part of mainstream business and investment.

The examples of change within the financial services sector are encouraging, although placing sustainability in the mainstream of the sector will not happen overnight and will be forged over many years ahead.

Along with other United Nations efforts, UNEP stands ready to work with banks, insurers and investment firms to make sustainable development the key to future and long-lasting business success. The UNEP FI Asset Management Working Group's latest report is yet another important contribution to this transformational process.

A handwritten signature in black ink, which appears to read 'Achim Steiner'. The signature is fluid and cursive, written over a white background.

Achim Steiner
UNEP Executive Director
Under-Secretary-General of the United Nations



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Foreword from Mercer's Investment Consulting business

There has long been a debate between those who regard environmental, social and governance (ESG) factors as being risk factors which can have a material impact on investment performance and those who regard them as exclusive social issues. However, the evidence of materiality with regard to ESG factors is beginning to take shape as more academic and practitioner research in this field emerges.

Of the 20 academic studies reviewed in this report, it is interesting to see evidence of a positive relationship between ESG factors and portfolio performance in half of these, with 7 reporting a neutral effect and 3 a negative association. A combination of short data samples, variability in data sources and different geographic regions probably explains the divergence in results. While many of the academic studies focus on examining the impact of screened versus traditional portfolio returns, others consider the effect of voting and engagement activities on firm and portfolio performance, as well as integration into stock selection and portfolio construction. On balance, the evidence suggests that there at least does not appear to be a performance penalty from taking wider factors into account in the investment management process.

Over time, as more resources are allocated to research in this field and data comparability improves, we anticipate that the evidence supporting ESG integration will become more robust. Indeed, we are already seeing evidence of materiality in the returns that ESG integrated strategies are producing amongst practitioners (as evidenced by the broker studies also reviewed in this report). At Mercer we will continue to help asset owners in their quest to integrate ESG factors into fiduciary processes and to encourage investment managers to seek innovative solutions for integrating ESG into their investment decisions.



Tim Gardener
Global Head
Mercer's Investment Consulting business



Jane Ambachtsheer
Global Head, Responsible Investment
Mercer's Investment Consulting business

3

Introduction from the UNEP FI Asset Management Working Group

The UNEP FI Asset Management Working Group (AMWG) has worked hard since its founding in 2003 to understand the ways environmental, social and governance (ESG) factors can affect investment value, and the evolving techniques for their integration into the investment process.

In its 'Materiality series'¹ in 2004 and 2006, the AMWG explicitly recognised that ESG factors are material to company value. Along with the 'Freshfields study'² in 2005, which provided assurance to institutional investors that the consideration of ESG factors is firmly grounded within the bounds of fiduciary duty, we are happy to look back at the contribution these studies have made to advancing responsible investment.

Last year, the launch of the Principles for Responsible Investment (PRI) brought about the framework for the integration of ESG factors into the investment process. The PRI has swiftly become a global benchmark for responsible investing, and the term ESG itself is now embedded in the financial vocabulary.

In the first half of this year, we continued our efforts. Firstly, we explored the barriers to and opportunities for responsible investment in the private banking domain.³ Secondly, in partnership with the UK Social Investment Forum, we featured examples of some of the most advanced and creative responsible investment strategies and practices being employed by leading public pension funds worldwide.⁴

Yet challenges remain.

Turning to performance, it is insightful to start by looking at the evolution of responsible investment. The first generation used negative screening by excluding sectors based on 'ethical' criteria. This was followed by the positive screening or 'best-in-class' approach, which selects top performers within a permitted sector. Today, responsible investment is premised on the belief that ESG factors can enhance financial performance and should therefore be integrated into investment analysis and decision-making, including ownership practices. Consequently, shareholder activism/engagement is an approach increasingly being adopted. It is also noteworthy that the term 'socially responsible investing' (SRI) itself is evolving. While SRI is still widely used, it is now being redefined as 'sustainable investing', 'responsible investing' or 'sustainable and responsible investing.' Regardless of the term, this is not mere semantics, but a true reflection of the major shift in thinking associated with the huge environmental and social challenges our world is now facing, the corporate downfalls in recent memory, and the increasing belief that these changes have impacts on investment performance.

Naturally, performance speaks loudest for most investors. A constant barrier to the widespread acceptance of responsible investment has been the misconception that it automatically translates to underperformance. The common school of thought is that a limited investment universe, as a result of a screening approach, entails a performance penalty. This has been the subject

1 See www.unepfi.org/fileadmin/documents/amwg_materiality_equity_pricing_report_2004.pdf and www.unepfi.org/fileadmin/documents/show_me_the_money.pdf
2 See www.unepfi.org/fileadmin/documents/freshfields_legal_resp_20051123.pdf
3 See www.unepfi.org/fileadmin/documents/unlocking_value.pdf
4 See www.unepfi.org/fileadmin/documents/infocus.pdf

of much debate through the years, particularly in the context of fiduciary duty. Unfortunately, responsible investment appears to have borne the stigma of its largely exclusionary past. Therefore, it is important to recognise that the new philosophy of responsible investment is proactive. It systematically integrates ESG factors into the investment process to enhance financial performance; and in doing so, identifies companies better positioned to benefit from investment performance over the long-term, and enhances the incentives for companies to align with the goals of sustainable development.

In this vein, the very first Principle of the PRI states that: “*We will incorporate ESG issues into investment analysis and decision-making processes.*” Not surprisingly, one of the most frequently asked questions is – how?

It is for these reasons that the AMWG and Mercer partnered to produce this report. The aim is twofold – to demystify responsible investment performance, and to encourage more in-depth academic and practitioner research on ESG factors.

The report features a diverse set of academic and broker studies that analyses responsible investment performance at both the company/stock and fund/portfolio level, including thematic studies which bolster the materiality of ESG factors. We believe that the types of studies selected provide a useful and representative sample essential not only to demystify performance, but also to have a good picture of the current state and direction of ESG research. The academic and broker findings were linked to achieve a holistic analysis and to set the scene going forward.

In addition, a section featuring the contemporary ‘language of responsible investment’, a recent publication of Mercer, was included to guide readers.

The key studies reviewed in this report have articulated profound messages:

- A variety of factors such as manager skill, investment style and time period are integral to investment performance. The argument that integrating ESG factors into investment analysis and decision-making will only lead to underperformance simply cannot be made.
- More rigorous quantitative ESG research is vital to improve the comparability of ESG criteria with traditional financial criteria, and to make the linkages more distinct. This type of research is already happening and we believe it will become more robust as demand for responsible investment grows, be it for financial returns, ethics, sustainable development – or all of it.
- Some authors and observers seem to confuse certain elements of financial discipline or investment style. There is a tendency to categorise responsible investment and compare it with other categories of style (e.g., growth/value, small/mid/large caps, any alternative investment). Responsible investment, as a financial discipline, can be successfully implemented in virtually any investment style.
- Certain research methods appear imperfectly suited to answer the central question of fund performance, while others do not seem to adequately distinguish between genuine ESG analysis and simple automatic exclusions (e.g., alcohol, tobacco and weapons).
- Finally, from a macro perspective, it is clear that the short-term mindset of many in the financial world is highly incompatible with the long-term horizon necessary to integrate ESG factors more effectively and for investors to act more responsibly.

This early, the AMWG is already setting its sights on a sequel that will study ESG factors per sector and its impacts on valuation models. Thus, this report should not be viewed as an end in itself, but as another enlightened step towards exploring the challenges and promise of responsible investing.

We thank Mercer, our partners in this report, for their invaluable contribution and professionalism.

We thank UNEP FI signatories for taking the sustainable finance agenda from awareness to action in the banking, insurance and investment communities.

We thank PRI signatories across the entire investment chain for their commitment to the Principles.

We offer this report to all investors, the academic community, and our peers in the investment profession.



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The UNEP FI Asset Management Working Group

ABN AMRO Banco Real Brasil	Brazil
Acuity Investment Management	Canada
BNP Paribas Asset Management	France
Calvert Group, Ltd.	United States
ClearBridge Advisors	United States
Eurizon Capital	Italy
Groupama Asset Management	France
Henderson Global Investors	United Kingdom
Hermes Pensions Management	United Kingdom
HSBC Investments	France
Mitsubishi UFJ Trust & Banking Corp.	Japan
Morley Fund Management	United Kingdom
Pax World Management Corp.	United States
RCM (UK)	United Kingdom



4

Overview of academic studies

This section of the report presents a review of twenty academic research papers that examine the link between ESG factors and investment performance. The studies were selected on the basis that they met one or all of the following criteria:

- They have been published in peer-reviewed academic journals or working papers that have applied and extended traditional finance theory to study the effect of environmental, social and/or governance factors on portfolio performance.
- They provide a good representation of different ESG factors under review, with variation in terms of the research methods used and the country/region of analysis.
- They have been influential pieces of work in terms of widening the application of traditional finance theory to extra-financial factors, with some having been awarded prizes in recognition of their contribution and/or frequently referenced in academic journals and industry reports.

The framework used to present the key methods, results and implications of each study is presented below.

Narrative analysis

- Full academic reference
- Summary
- Test
- Results

Tabular analysis

- Target audience
- Region
- Time period of study
- Financial performance measure(s) – broad
- Financial performance measure(s) – specific
- E, S or G measure(s) – broad
- E, S or G measure(s) – specific
- Unit of measurement
- Number of units
- Source of ESG data
- RI approach
- Link to other articles (as applicable)

	Authors	Title of study	Time period of study	E, S or G	RI approach	Findings on ESG factors
1	Abramson, L. & Chung, D. (2000)	Socially responsible investing: Viable for value investors?	Sep 1990 - Mar 2000	ESG	Screening	positive
2	Barnett, M. & Salomon, R. (2006)	Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance.	Jan 1972 - Dec 2000	E and S	Screening	neutral-positive
3	Bauer, R., Otten, R. & Rad, A. (2006)	Ethical investing in Australia: Is there a financial penalty?	Nov 1992 - Apr 2003	ESG	Screening	neutral
4	Bello, Z. (2005)	Socially responsible investing and portfolio diversification.	Jan 1994 - Mar 2001	Mainly S	Screening	neutral
5	Benson, K.L., Brailsford, T.J. & Humphrey, J.E. (2006)	Do socially responsible fund managers really invest differently?	Jan 1994 - Dec 2003	Mainly S	Screening	neutral
6	Brammer, S., Brooks, C. & Pavelin, S. (2006)	Corporate social performance and stock returns: UK evidence from disaggregate measures.	Jun 1997 - Jun 2002	E and S	Screening	neutral-negative
7	Chong, J., Her, M. & Phillips, G.M. (2006)	To sin or not to sin? Now that's the question.	Sep 2002 - Sep 2005	Mainly S	Screening	negative
8	Core, J., Guay, W. & Rusticus, T. (2006)	Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations.	Sep 1990 - Dec 1999	G	Activism	neutral
9	Derwall, J., Guenster, N., Bauer, R. & Koedijk, K. (2005)	The eco-efficiency premium puzzle. ¹	Jul 1995 - Dec 2003	E	ESG integration	positive
10	Geczy, C., Stambaugh, R. & Levin, D. (2005).	Investing in socially responsible mutual funds (working paper). ²	Jul 1963 - Dec 2001	S	Screening	negative
11	Gompers, P., Ishii, J. & Metrick, A. (2003)	Corporate governance and equity prices.	Jan 1990 - Dec 1999	G	Activism	positive
12	Hong, H. & Kacperczyk, M. (2006)	The price of sin: The effects of social norms on markets (working paper).	Jan 1965 - Dec 2004	S	Screening	negative
13	Opler, T.C. & Sokobin, Jo. (1995)	Does coordinated institutional activism work? An analysis of the activities of the Council of Institutional Investors.	Jan 1991 - Dec 1993	G	Activism	positive
14	Orlitzky, M., Schmidt, F.L. & Rynes, S.L. (2003)	Corporate social and financial performance: A meta-analysis. ³	Jan 1972 - Dec 1997	S, and E to a lesser extent	Screening	positive
15	Schröder, M. (2004)	The performance of socially responsible investments: Investment funds and indices.	Varied start date: mid-1990s - Sep 2002	ESG	Screening	neutral-positive
16	Shank, T. M., Manullang, D.K. & Hill, R.P. (2005)	Is it better to be naughty or nice?	Dec 1993 - Dec 2003	ESG, with more S than E and G	Screening	positive

1 Moskowitz Prize for Socially Responsible Investing, 2005 Winner.

2 Moskowitz Prize for Socially Responsible Investing, 2003 Honourable Mention.

3 Moskowitz Prize for Socially Responsible Investing, 2004 Winner.

17	Smith, M.P. (1996)	Shareholder activism by institutional investors: Evidence from CalPERS.	Jan 1987 - Dec 1993	G	Activism	positive
18	Statman, M. (2000)	Socially responsible mutual funds.	May 1990 - Sep 1998	Mainly S	Screening	positive
19	Statman, M. (2006)	Socially responsible indexes: Composition, performance, and tracking error. ¹	May 1990 - Apr 2004	Mainly S	Screening	positive
20	Van de Velde, E., Vermeir, W. & Corten, F. (2005)	Corporate social responsibility and financial performance.	Jan 2000 - Nov 2003	ESG	ESG integration /Screening	positive

¹ Moskowitz Prize for Socially Responsible Investing, 2005 Honourable Mention.

5

Review of academic studies

1

Abramson, L. & Chung, D. (2000)

Socially responsible investing: Viable for value investors?

Journal of Investing, 9(3), pp.73-80

Summary This paper looks at whether socially responsible investing (SRI) can only be incorporated into growth style investing¹ successfully or whether it is also viable for value investors². It does this by creating two separate portfolios based on ranking stocks within the Domini Social Index (DSI) by relative yield and relative market capitalisations-to-revenues at different points. The first portfolio, a rebalancing³ portfolio, ranks stocks every quarter while the second, a buy-and-hold⁴ portfolio, ranks the stocks at the start of the time period and takes these as the stocks for the portfolio for the entire time period. The overall conclusion of the paper is that SRI can provide competitive returns relative to benchmark to both value and growth style investment managers.

Test Overall, the authors are trying to answer the question as to whether SRI transcends market cycles and style preferences. They do this by conducting the following tests for two strategies, a rebalancing strategy and a buy-and-hold strategy:

1. Assessing the performance of value stocks within the DSI.
2. Analysing the performance of value subsets of the DSI against popular value benchmarks.

Results Overall findings on ESG factors: **Positive**

1. A rebalancing strategy of ranking DSI stocks by valuation each quarter yielded a 17.5% average annualised return versus an average of 15.1% for three value benchmarks over the studies specified time period. Sharpe ratio was 0.87 versus benchmark average of 0.80.
2. A buy-and-hold strategy, in which a group of stocks was purchased at the beginning of the studies time period based on ranking DSI stocks by valuation and holding them until the end of the period, resulted in good annualised average returns (16.2%), but a below-benchmark Sharpe ratio of 0.76.

Commentary Since the study was undertaken during the tech boom of the 1990s, results are very much a function of this time period and may have been different if the study was undertaken over another time period.

1 Investing in stocks expected to achieve above average earnings growth. Growth stocks normally have a high P/E ratio relative to the market as a whole, as investors anticipate that earnings will increase in the future.

2 Investors which place emphasis on identifying shares they believe to be underpriced by the market (on the basis of indicators such as P/E ratio and dividend yield).

3 Making adjustments to a portfolio to counteract the fact that different assets have performed differently over a period, and thus comprise different percentages of the portfolio than originally intended.

4 An investment strategy in which stocks are bought and then held for a long period of time regardless of short-term market movements.

Target audience	Investment management industry, financial community
Region	US
Time period of study	Sep 1990 - Mar 2000
Financial performance measure(s) - broad	Index performance (DSI, S&P 500, Russell 1000 value, S&P Barra value and Wilshire Large Cap value) and relative valuation techniques.
Financial performance measure(s) - specific	Sharpe ratio, relative market capitalisation-to-revenues, relative dividend yield
E, S or G measure(s) - broad	ESG
E, S or G measure(s) - specific	Broad study
Unit of measurement	Stocks
Number of units	177 for rebalancing strategy, 120 stocks for buy-and-hold strategy
Source of ESG data	Compustat
RI approach	Screening

2

Barnett, M. & Salomon, R. (2006)

Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance

Strategic Management Journal, 27(11), pp.1101-1122.

Summary Using 61 funds, the authors firstly examine whether the relationship between social responsibility and financial performance is curvilinear (U-shaped) – and concludes it is. In other words, SRI funds with weak screening have a larger universe to select from and are therefore likely to be more diversified and achieve improved risk-adjusted return. As screening standards increase, diversification is more likely to decrease and risk-adjusted return to worsen. However, there comes a point where social screening intensifies and better-managed, more stable firms are selected, and risk-adjusted returns improve. Secondly, the authors examine three specific social screens applied in SRI funds (i.e., labour relations, community relations and environmental performance) to see whether financial performance varies with the types of social screens applied. The conclusion is that community relations screening increased performance while labour relations and environmental performance screening decreased performance. The authors include control variables such as fund age and asset allocations in their examination, and present a review of current literature on the topic as well as suggested next steps.

Test

- Hypothesis I: The relationship between the intensity of social screening and financial performance for SRI funds is curvilinear.
- Hypothesis II: SRI funds that select firms for their portfolios based on labour relations screening criteria will earn higher financial returns than those that do not.
- Hypothesis III: SRI funds that select firms for their portfolios based on community relations screening criteria will earn higher financial returns than those that do not.
- Hypothesis IV: SRI funds that select firms for their portfolios based on environmental screening criteria will earn higher financial returns than those that do not.

Results Overall findings on ESG factors: **Neutral/Positive**

Hypotheses I & III: Affirmative.

Hypotheses II & IV: Negative. Results suggest that the financial costs of increasing equal employment opportunity and diversity, as well as environmental performance, to levels adequate to pass the screening standards of SRI funds may outweigh their financial benefit (the author is hesitant to draw conclusions from this for various reasons, e.g., market's preference for certain types of social screens may change over time).

Target audience	General business organisations, management & financial organisations
Region	Global
Time period of study	Jan 1972 - Dec 2000
Financial performance measure(s) - broad	Investment performance
Financial performance measure(s) - specific	Risk-adjusted performance
E, S or G measure(s) - broad	E and S
E, S or G measure(s) - specific	Employment opportunity & diversity, community, environment
Unit of measurement	Mutual funds
Number of units	61
Source of ESG data	Social Investment Forum, CRSP, Weisenberger, ICDI
RI approach	Screening

3

Bauer, R., Otten, R. & Rad, A. (2006)

Ethical investing in Australia: Is there a financial penalty?

Pacific-Basin Finance Journal, 14(1), pp.33-48.

Summary This paper examines the risk-adjusted returns of the Australian ethical mutual fund market relative to the Australian conventional mutual fund market. The authors do this using a 4-factor Carhart model¹ and conclude that, after adjusting for differences in investment style, the risk-adjusted returns on the Australian ethical mutual fund market are not statistically different from the Australian conventional mutual fund market over the examined time period of 1992 to 2003. The authors note, however, that there was a 'learning period' (or catch-up period) for Australian ethical funds from 1992 to 1996 when their conventional counterparts outperformed. However, from 1997 to 2003, returns on Australian conventional and ethical funds were similar.

Test

- Objective I: Provide evidence on Australian ethical mutual fund performance.
- Objective II: Address potential benchmark problems when assessing the relative performance of ethical mutual funds in Australia.

Results Overall findings on ESG factors: **Neutral**

The four key results from this paper include:

1. The difference in the returns on ethical and conventional funds was not statistically significant for either domestic or international funds.
2. Ethical funds were found to exhibit distinct investment styles when compared to conventional funds (e.g., all ethical funds exhibit significantly less market exposure compared to conventional funds).

¹ The 4-factor Carhart model, developed in 1997, is used to evaluate fund performance. The model takes into account not only the size and book-to-market ratio, but also an additional factor for the momentum effect. The 4-factor Carhart model is given on p.30 of the study.

3. There is a strong and significant home country bias for all international ethical funds.
4. The underperformance of the Australian domestic ethical funds over the whole sample period of 1992 to 2003 was mainly caused by a strong and significant underperformance during the first sub-period (1992-1996). Performance then caught up (1996-1999), and by the last sub-period (1999-2003), ethical fund performance and conventional fund performance were broadly equal.

Target audience	Australian financial organisations
Region	Australia
Time period of study	Nov 1992 - Apr 2003
Financial performance measure(s) - broad	Investment performance, style analysis
Financial performance measure(s) - specific	Jensen's alpha, book-to-market ratio, stock price momentum
E, S or G measure(s) - broad	ESG
E, S or G measure(s) - specific	Broad study
Unit of measurement	Mutual funds
Number of units	25 domestic ethical, 110 domestic conventional, 52 international ethical, 91 international conventional
Source of ESG data	Morningstar
RI approach	Screening

4

Bello, Z. (2005)

Socially responsible investing and portfolio diversification

The Journal of Financial Research 28(1), pp.41-57.

Summary This report examines the performance of SRI funds relative to conventional mutual funds, but varies from other studies in that it also examines empirically the association between social screening and characteristics, such as diversification and size of companies in the portfolio. The overall conclusion is that, *“not a single characteristic of socially responsible mutual funds is significantly different from that of conventional funds.”* (2005:50).

Test Investigate the extent to which employing SRI constraints affects the characteristics of assets included in the portfolio, the degree of portfolio diversification, and the effects of diversification on investment performance.

Results Overall findings on ESG factors: **Neutral**

The main result is that, *“not a single characteristic of socially responsible mutual funds is significantly different from that of conventional funds.”* (2005:50).

The specific results are:

1. The effect of diversification on investment performance is not significantly different between SRI and conventional funds.
2. Screening does not introduce a significant size bias.
3. Risk-adjusted performance of SRI and mutual funds are not significantly different.

Target audience	Financial community
Region	US
Time period of study	Jan 1994 - Mar 2001
Financial performance measure(s) - broad	Investment performance
Financial performance measure(s) - specific	Jensen's alpha, Sharpe ratio, eSDAR (excess standard deviation adjusted return)
E, S or G measure(s) - broad	Mainly S
E, S or G measure(s) - specific	Broad study
Unit of measurement	Mutual funds
Number of units	42 SRI funds, 84 conventional funds
Source of ESG data	Morningstar; Kinder, Lydenberg, Domini & Co.
RI approach	Screening

5

Benson, K.L., Brailsford, T.J. & Humphrey, J.E. (2006)

Do socially responsible fund managers really invest differently?

Journal of Business Ethics, 65(4), pp.337-357

Summary This study re-examines the performance difference between SRI funds and conventional funds – an area that the authors note has been the subject of much debate. The aim of the paper is to take this analysis a step further and examine the source of any performance difference between SRI and conventional funds, such as different industry allocations and different stock-picking skills. The authors examine this using regression analysis¹ and conclude that the two types of funds do have significantly different industry allocations and derive performance from different industry sectors. However, stock-picking skills were not found to be significantly different..

Test Preliminary test: Compare SRI fund performance with conventional fund performance (replicates earlier work by other authors).

Main tests:

1. Examine whether there is a difference in the industry allocation of SRI and conventional (domestic) funds.
2. Test whether SRI fund managers and conventional fund managers attempt to earn additional returns by industry selection by benchmarking against the industry composition of the S&P 500 index.
3. Given the industry allocation, test whether there is a difference in the skills of SRI and conventional fund managers.

Results Overall findings on ESG factors: **Neutral**

Preliminary test: Reaffirms previous studies that performance of SRI funds is not distinguishable from conventional funds.

Main tests:

1. Found that industry betas are significantly different from one, and vary across funds and fund types. Therefore, there is a difference in industry allocation between SRI and conventional funds. Most funds have positive betas on the information technology sector, highlighting the fact that the sample period overlapped with the tech boom.

¹ Statistical analysis of the relationship between a dependent variable and a series of independent variables.

2. Although the return on SRI funds and conventional funds were similar over the sample period, the returns are generated through different industry exposures. Most significant difference in industry betas was in the telecommunications and utilities industries.
3. No significant difference in stock-picking skills between SRI fund managers and conventional fund managers.

Commentary The sample period overlaps with the tech boom of the 1990s so some results might be a function of this factor.

Target audience	Financial community
Region	US
Time period of study	First set of tests: Jan 1994 - Dec 2003; Second set of tests: Jan 1999 - Dec 2003
Financial performance measure(s) - broad	Investment performance, regression analysis
Financial performance measure(s) - specific	Sharpe ratio
E, S or G measure(s) - broad	Mainly S
E, S or G measure(s) - specific	Broad study
Unit of measurement	Mutual funds
Number of units	185 SRI funds
Source of ESG data	Morningstar, Social Investment Forum
RI approach	Screening

6

Brammer, S., Brooks, C. & Pavelin, S. (2006)

Corporate social performance and stock returns: UK evidence from disaggregate measures

Financial Management, 35(3), pp.97-116

Summary The authors conclude that the environmental and community indicators are negatively correlated with returns, while the employment indicator is weakly positively related. They note that the results lend some support to the argument that expenditure on some corporate social activities is largely destructive of shareholder value.

Test Test for a positive relationship between stock returns and corporate social responsibility (CSR) performance based on total CSR score and breakdown by environment, community and employee performance.

Results Overall findings on ESG factors: **Neutral/Negative**

The one, two and three-year horizon return data showed that firms scoring higher on the CSR scoring provided by Ethical Investment Research Services (EIRIS) underperformed the FTSE All Share index. High scores on the environment and community measures were found to be associated with lower investment returns. The employment indicator was found to have the opposite effect on stock performance, with low or zero CSR score leading to lower returns across the two and three-year horizons. Noteworthy is that the tests for statistical significance revealed that none of the differences in CSR scores and financial performance were found to be significant.

Commentary The results are highly dependent on the methodology used by EIRIS in terms of the scoring system for CSR, and therefore not transparent or readily comparable to the findings of other

studies. This contradicts findings of other studies that found a positive link such as Derwall et al. (2005).

Target audience	Academic literature on responsible investment and investment professionals
Region	UK
Time period of study	Jun 1997 - Jun 2002
Financial performance measure(s) - broad	CSR performance, stock performance
Financial performance measure(s) - specific	Returns, standard deviations, CSR score
E, S or G measure(s) - broad	E and S
E, S or G measure(s) - specific	CSR score = Community performance, environmental performance, employee performance
Unit of measurement	Stocks
Number of units	451
Source of ESG data	EIRIS*
RI approach	Screening

*The ESG data for this study was used by the authors without the permission of EIRIS.

7

Chong, J., Her, M. & Phillips, G.M. (2006)

To sin or not to sin? Now that's the question

Journal of Asset Management, 6(6), pp.406-417.

Summary This study examines the performance of a socially responsible fund, the Domini Social Equity Fund, versus a socially irresponsible fund, the Vice fund, and also against the S&P 500. This paper uses both traditional (unconditional) performance measures and (conditional) ARCH¹ methods. The authors believe that the ARCH methods provide more robust information (e.g., estimates of Sharpe ratio). The results are generally in favour of the Vice fund, but this could be a factor of the time period chosen, when markets were mainly in the midst of a downturn.

Test Compare the performance of a socially responsible fund (the Domini Social Equity Fund) with that of a socially irresponsible fund (the Vice fund). The S&P 500 is used as benchmark.

First set of tests: Traditional (unconditional) risk/performance measures.

Second set of tests: Conditional risk/performance measures, based on the autoregressive conditional (ARCH) family of models.

Results Overall findings on ESG factors: **Negative**

Overall result from first set of tests (traditional/unconditional): Risk-adjusted return of socially irresponsible investment fund (Vice fund) is better than that of the socially responsible investment fund (Domini fund).

Overall results from second set of tests (conditional/ARCH): The Vice fund outperformed the Domini fund and the S&P 500, while the Domini fund underperformed S&P 500. The Vice fund may not be useful for increasing portfolio diversification as the results show high correlation between the fund and S&P 500, and increasing conditional beta. Sharpe ratio is higher for the Vice fund than the Domini fund.

Commentary The outperformance of the Vice fund may partially be due to the period chosen when markets were in the midst of a downturn, during which a fund such as this may perform better than standard/SRI funds.

1 ARCH stands for Autoregressive Conditional Heteroskedasticity. It is a technique used in finance to model asset price volatility over time.

Target audience	Fund management industry
Region	US
Time period of study	Sep 2002 – Sep 2005
Financial performance measure(s) - broad	Investment performance measures
Financial performance measure(s) - specific	Jensen's alpha, Sharpe ratio
E, S or G measure(s) - broad	Mainly S
E, S or G measure(s) - specific	Broad study
Unit of measurement	Mutual funds
Number of units	1 SRI fund, 1 'vice' fund
Source of ESG data	Yahoo Finance
RI approach	Screening

8

Core, J., Guay, W. & Rusticus, T. (2006)

Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations

Journal of Finance, 56(2), pp.655-687.

Summary This study examines the findings from Gompers, Ishii and Metrick's (GIM) (2003) report that found companies with weak shareholder rights tend to show significant stock market underperformance. The authors replicate the G index used in the GIM report. The authors use return on assets (ROA)¹ to test for a relationship between governance and operating performance. They employ two tests (analyses of the relationship between analyst forecast errors and governance, and the relationship between earnings announcement returns and governance) to determine whether stock market underperformance of companies with weak shareholder rights/poor governance is caused by investor surprise about the poor operating performance of these companies.

Test

- Hypothesis I: Shareholder rights are not associated with future operating performance.
Hypothesis II: Shareholder rights are not associated with analyst forecast errors.
Hypothesis III: Shareholder rights are not associated with excess returns around earnings announcements.
Hypothesis IV: Shareholder rights are not associated with takeover probability.

Results Overall findings on ESG factors: **Neutral**

Overall result: Shareholder rights are not the cause of future abnormal stock returns.

- Hypothesis I: The authors find evidence that weak shareholder rights are associated with lower operating performance, but do not show a causal relationship.
Hypothesis II: In order to show that operating cash flow differences caused by governance cause future stock return differences, the authors investigate whether the differences in operating performance was unexpected by investors, through analyst forecast errors. The evidence suggests that analysts are aware of the link between shareholder rights and operating performance. The authors add a caveat that their results could be influenced by companies engaging in earnings management².
Hypothesis III: The earnings announcement test confirms that surprises about operating performance do not explain differences in observed stock returns between companies with different shareholder rights.

1 Return on assets (ROA) – a measure of a company's profitability, equal to a fiscal year's earnings divided by its total assets, expressed as a percentage.

2 The authors quote recent literature that suggests that managers bias earnings or guide analysts' forecast in an attempt to meet the expectations of the market.

Hypothesis IV: Variations in takeover probability are unlikely to be a major cause of future stock return differences between companies with different levels of shareholder rights.

The authors go on to further investigate the results of the GIM report and conclude that their evidence points away from the GIM report's overall conclusion that differences in shareholder rights are associated with higher returns. They believe that time period-specific returns and/or differences in expected returns likely play a role in explaining the documented abnormal stock returns of strong governance firms.

Target audience	Financial community
Region	US
Time period of study	Sep 1990 - Dec 1999
Financial performance measure(s) - broad	Index performance, corporate accounting
Financial performance measure(s) - specific	ROA, momentum, EPS, book-to-market ratio, alpha
E, S or G measure(s) - broad	G
E, S or G measure(s) - specific	24 corporate governance practices (e.g., poison pill, classified boards, supermajority requirements, golden parachutes)
Unit of measurement	Companies
Number of units	24 corporate governance provisions for approximately 732 companies
Source of ESG data	Investor Responsibility Research Centre (IRRC), Centre for Research in Security Prices (CRSP), Compustat, Institutional Brokers' Estimates System (I/B/E/S)
RI approach	Activism
Link to other articles	Gompers, P., Ishii, J. & Metrick, A. (2003), Corporate governance and equity prices, <i>The Quarterly Journal of Economics</i> , 118(1), pp.107-155.

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Derwall, J., Guenster, N., Bauer, R. & Koedijk, K. (2005)

The eco-efficiency premium puzzle

Financial Analysts Journal, 61(2), pp.51-63

Summary Based on the sample period and eco-efficiency¹ data provided by Innovest, the results suggest that stocks that perform relatively well along environmental dimensions collectively produce superior portfolio returns. The average return on the two constructed portfolios was found to be large (in terms of the estimated difference in alpha generation per annum) and significant on a risk, style and industry-adjusted basis. The statistical significance was reasonably robust to variations in methodology. Overall, the results suggest that the benefits of considering environmental criteria in the investment process can be substantial.

Test The hypothesis being tested is whether a portfolio constructed of environmentally efficient stocks will perform better than less efficient stocks. In other words, does the incorporation of environmental responsibility among corporations provide investment benefits in terms of bolstering portfolio returns?

Results Overall findings on ESG factors: **Positive**

Overall, the portfolio constructed of environmentally efficient stocks was found to produce superior returns to the portfolio of low-ranked environmental stocks. The authors conclude that environmentally responsible investment provides benefits. The return difference was found to be

1 The ratio between goods produced or services rendered and the resources consumed or waste produced.

3.05% p.a. under the Capital Asset Pricing Model (CAPM)¹ framework, although this difference was not statistically significant. The multi-factor model results showed a 5.06% p.a. difference in returns that was significant at the 10% level, but not the 5% level. After adjusting for industry tilt, size and style effects, the results were more robust and significant at the 5% level, with a 6.04% p.a. difference in alpha.

Commentary This paper makes a significant contribution to the literature on environmental criteria and the link to portfolio theory. It not only considers the portfolio effects under the CAPM framework, but also under a multi-factor framework. The results help bolster the portfolio performance argument in support of incorporating environmental factors into portfolio management. The shortcomings of the study are:

1. It is limited to the E within ESG.
2. While the results were clearly favourable under the multi-factor model, the CAPM results suggest that the difference was not statistically significant between high and low eco-efficiency performing stocks.
3. The sample was limited to US stocks and dependent upon the representativeness of the rating methodology used by Innovest on company performance with respect to eco-efficiency.

Target audience	Academic literature portfolio theory and investment professionals
Region	US
Time period of study	Jul 1995 - Dec 2003
Financial performance measure(s) - broad	Portfolio performance in CAPM and multi-factor model frameworks
Financial performance measure(s) - specific	Average return, alpha, beta
E, S or G measure(s) - broad	E
E, S or G measure(s) - specific	Eco-efficiency (defined as the economic value a company creates relative to the waste it generates)
Unit of measurement	Stocks
Number of units	180 companies at end-May 1997, increasing to 450 at end-May 2003
Source of ESG data	Innovest Strategic Value Advisors' eco-efficiency scored data
RI approach	ESG integration

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Geczy, C., Stambaugh, R. & Levin, D. (2005)

Investing in socially responsible mutual funds (working paper)

Viewed 11 December 2006, <<http://cisdm.som.umass.edu/resources/pdffiles/2006/seminar8.pdf>>.

Summary The aim of this study is to determine whether investors who allocate money to socially responsible equity funds suffer financially from this decision. The authors do this by constructing optimal portfolios of mutual funds (whose objectives include SRI), and estimating the impact on performance when applying a variety of performance attribution models (e.g., CAPM and Carhart) and investor behaviour assumptions. The overall result is that when investors believe in the CAPM pricing model, and if they have very little belief in manager skill or little allocation to SRI funds, then the costs of SRI constraints is small. However, as investors start to believe (in varying degrees) in multi-factor models or manager skill, or indeed increase their allocation to SRI funds, the costs of SRI constraints increase.

Test Test whether investors who allocate money to socially responsible equity funds suffer financially from this decision.

¹ Economic model for valuing assets. The simplest version states that the expected excess return of a security over a risk-free asset will be exactly in proportion to its beta.

Results Overall findings on ESG factors: **Negative**

The finding of this study is that the financial implication to investors in SRI funds depends on how much is allocated to SRI funds along with the investors' prior belief about valuation models and the stock picking skills of investment managers. If the investor has strong belief in the CAPM model and no belief in manager skill or allocates a small proportion of their investment to SRI funds, then the cost implications are small (the authors quote 1 to 2 bp/month). However, when investors begin to believe to some degree in multi-factor models (e.g., Carhart) or in managers' stock picking skills, then the cost implications increase (the authors quote around 30 bp/month). In addition, the larger the amount invested in SRI funds, the greater the cost of the SRI constraint.

Target audience	Academic literature on portfolio theory and investment professionals
Region	US
Time period of study	Jul 1963 - Dec 2001
Financial performance measure(s) - broad	Investment performance, CAPM and multi-factor models
Financial performance measure(s) - specific	Sharpe ratio
E, S or G measure(s) - broad	S
E, S or G measure(s) - specific	20 screening classification categories (e.g., alcohol, irresponsible foreign operations, diversity, firearms, abortion/birth control)
Unit of measurement	Mutual funds
Number of units	Initial sample fund size of 894, narrowed to 34 SRI no-load funds
Source of ESG data	1) Mutual fund data: Survivorship Bias Free Mutual Fund database from the Centre for Research in Security Prices at the University of Chicago. 2) Screening standards: Social Investment Forum; Morningstar; and Brill, Brill & Feigenbaum (2000), SRI World.
RI approach	Screening

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Gompers, P., Ishii, J. & Metrick, A. (2003)

Corporate governance and equity prices

The Quarterly Journal of Economics, 118(1), pp.107-155.

Summary This study examines the association between stock market performance and corporate governance policies. A Governance index (G-index) is created – the level of which gives a measure of the extent to which a company's corporate governance policies favour management or shareholders (a high G-index indicating weaker shareholder rights and lower governance quality). The authors conduct various tests on this G-index and conclude the following: corporate governance was strongly correlated with stock returns during the 1990s; however, the evidence is inconclusive as to the cause of this correlation.

Test

- Hypothesis I: Governance provisions cause higher agency costs. These higher costs were underestimated in the 1990s.
- Hypothesis II: Governance provisions do not cause higher agency costs; rather, these were put in place by 1980s managers who forecasted poor performance for these firms in the 1990s.
- Hypothesis III: Governance provisions do not cause higher agency costs, but their presence is correlated with other characteristics that earned abnormal returns in the 1990s.

- Results** Overall findings on ESG factors: **Positive**
- Overall result: That good corporate governance is strongly correlated with stock returns during the 1990s.
- Hypothesis I: Some evidence in support, but inconclusive.
- Hypothesis II: Negative.
- Hypothesis III: *“Industry classification can explain somewhere between one-sixth and one-third of the benchmark abnormal returns, but we do not find any other observable characteristic that explains the remaining abnormal return.”* (2003:143).

Commentary The sample period overlaps with the tech boom of the 1990s so some results might be a function of this factor.

Target audience	Economists
Region	US
Time period of study	Jan 1990 - Dec 1999
Financial performance measure(s) - broad	Index performance, corporate accounting
Financial performance measure(s) - specific	Tobin’s Q, book-to-market ratio, share price, monthly trading volume, dividend yield, firm size, S&P 500 inclusion, percentage of institutional ownership, past 5-year stock return and sales growth, momentum, return on equity, net profit, sales growth
E, S or G measure(s) - broad	G
E, S or G measure(s) - specific	24 corporate governance practices divided into 5 groups: (1) tactics for delaying hostile bidders (e.g., blank check), (2) voting rights (e.g., cumulative voting), (3) director/officer protection (e.g., golden parachutes), (4) other takeover defences (e.g., poison pill), and (5) state laws (e.g., control share acquisition law)
Unit of measurement	Company
Number of units	24 corporate governance provisions for approximately 1,500 companies
Source of ESG data	Publications of Investor Responsibility Research Centre (IRRC)
RI approach	Activism
Link to other articles	Core, J., Guay, W. & Rusticus, T. (2006), Does weak governance cause weak stock returns? An examination of firm operating performance and investors’ expectations. <i>Journal of Finance</i> , 56(2), pp.655-687.

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Hong, H. & Kacperczyk, M. (2006)

The price of sin: The effects of social norms on markets (working paper)

Viewed 17 August 2007, <<http://finance.sauder.ubc.ca/~mkacpe/index/sin.pdf>>

Summary The authors conclude that ‘sin’ stocks are underpriced and outperform comparables, and that this might be explained by social norms that restrict ownership by more ‘visible’ institutional investors such as pension funds, endowments, university funds, and insurance companies (in contrast to individuals, mutual funds and hedge funds). No systematic relationship was found between litigation risk and stock returns that explained the difference in returns. They conclude that social norms can have important consequences for stock market returns and efficiency.

Test

Hypothesis I: That less institutional investors own stocks in the ‘sin’ sectors, defined as tobacco, alcohol and gaming.

Hypothesis II: That there is a financial cost from not investing in 'sin' stocks.

Hypothesis III: That there is an increased litigation risk associated with 'sin' stocks.

Results Overall findings on ESG factors: Negative

1. That 'sin' stocks have less institutional ownership, with approximately 19% of shares held by institutions which the authors estimate is approximately 14% lower institutional ownership ratio than stocks of comparable characteristics.
2. Using time-series regressions, a portfolio long 'sin' stocks and their short comparables was found to have a return premium of 45 bp/month.
3. Using cross-sectional regressions, 'sin' stocks were found to outperform their comparables by 30 bp/month.
4. The market-to-book ratios of 'sin' stocks are, on average, about 15% lower than those of other companies after controlling for differences in other stock characteristics.
5. Limited evidence to support the litigation risk hypothesis.

Commentary This study attempts to link the social norms literature with the wider influences on institutional investors' decision-making process. However, the authors present a narrow definition of 'sin' stocks that arguably should have also included weapons and the sex industry. In addition, the difference in ownership data between 'sin' stocks and comparable stocks was small: 19% compared to 22% casting serious doubts as to the validity of the overall hypothesis (i.e., that institutions avoid investing in these sectors). Moreover, the trend in the responsible investment community has increasingly moved away from screening in favour of engagement. The growth in the SRI assets under management quoted at the beginning of the paper therefore overstate the potential link between SRI and exclusion of 'sin' stocks, not least because many SRI funds are offered by mutual fund investors.

Target audience	Academic literature on portfolio theory and investment professionals
Region	US
Time period of study	Jan 1980 - Dec 2003 for analysis of share ownership; Jan 1965 - Dec 2004 for stock data
Financial performance measure(s) - broad	Company returns in alcohol, tobacco and gaming sectors
Financial performance measure(s) - specific	Stock prices, stock returns, market-to-book ratio
E, S or G measure(s) – broad	S
E, S or G measure(s) - specific	Exclusion of 'sin' stocks (defined as those in the tobacco, alcohol and gaming sectors)
Unit of measurement	Stocks
Number of units	193
Source of ESG data	1) Share price data: Centre for Research in Security Prices (CRSP) and Compustat; 2) Stock ownership data: CDA Spectrum database of 13-F filings by US institutional investors
RI approach	Screening

Opler, T.C. & Sokobin, J. (1995)

Does coordinated institutional activism work? An analysis of the activities of the Council of Institutional Investors

Unpublished working paper, Ohio State University

Summary The authors set out to examine whether coordinated and primarily ‘quiet’ governance activism generated value by examining the activities of the Council of Institutional Investors (CII). Specifically, they investigate whether firms that appear on the CII focus list experience improvements in performance in subsequent years. The study involves the construction of a benchmark portfolio that takes size, book-to-market ratio and industry performance into account. The authors find that firms on the CII focus list exhibited depressed performance in the three years prior to inclusion in the list, and significant improvements in performance in the following years. The conclusion was that, *“There is substantial evidence that firms on Council of Institutional Investors focus lists far outperformed the market and reasonable comparison group firms in the 1991-93 period. This is consistent with the view that coordinated shareholder activism is effective.”* (1995:15).

Test This study examines whether coordinated and primarily ‘quiet’ governance activism generates value by examining stock market performance of CII focus list firms in the year after their announced listing.

Results Overall findings on ESG factors: **Positive**

The stock market performance of firms on the CII focus list in the year following its listing showed at least 10% higher returns than the S&P 500. Over the full sample period, the CII portfolio exhibited a mean return of 21.2% in the year after listing compared to the market return of 9.5%. The mean one-year stock market performance was found to be two times greater than the long-term performance matched portfolio (5.3%), and five times greater than the book-to-market matched portfolio (2.2%).

Target audience	Academic literature on responsible investment and investment professionals
Region	US
Time period of study	Jan 1991 - Dec 1993
Financial performance measure(s) - broad	Stock performance
Financial performance measure(s) - specific	Stock returns, book-to-market ratio, operating performance
E, S or G measure(s) - broad	G
E, S or G measure(s) - specific	Coordinated institutional shareholder activism
Unit of measurement	Companies
Number of units	99
Source of ESG data	Compustat, CRSP tapes (University of Chicago), Bloomberg, S&P
RI approach	Activism
Link to other articles	Links to Smith (1996) in terms of shareholder activism, but differs as the study examines coordinated shareholder activism rather than the efforts of a single pension fund.

Corporate social and financial performance: A meta-analysis

Organization Studies, 24(3), pp.403-441.

Summary This paper is a meta-analysis study¹ on the relationship between corporate social performance (CSP) and corporate financial performance (CFP). The overall conclusion of the report is that there is a positive relationship between CSP and CFP, but the extent of the positive correlation is impacted by characteristics such as reputation, disclosure of CSP, and market measure of CFP. The study statistically aggregates the results of 52 quantitative research studies on the CSP-CFP relationship (correcting for statistical artefacts such as sampling and measurement error) that were produced from 1972 to 1997.

Test The overall question of the study was originally posed by *Business Week* (1999): “*Can business meet new social, environmental, and financial expectations and still win?*”

Hypothesis I: Corporate social performance (CSP) and corporate financial performance (CFP) are generally positively related across a wide variety of industry and study contexts.

Hypothesis II: There is bidirectional causality between CSP and CFP.

Hypothesis III: CSP is positively correlated with CFP because:

- a. CSP increases managerial competencies, contributes to organisational knowledge about the firms’ market, social, political, technological, and other environments, and thus enhances organisational efficiency.
- b. CSP helps the firm build a positive reputation and goodwill with its external stakeholders.

Hypothesis IV:

- a. A large proportion of cross-study variance is due to statistical or methodological artefacts (sampling and measurement error).
- b. Consistent with stakeholder mismatching, after accounting for statistical artefacts, there will still be differences in the statistical associations between different sub-dimensions of CFP and CSP (after correct matching).

Results Overall findings on ESG factors: **Positive**

Overall question: **Affirmative.**

Hypothesis I: “...*across studies, CSP is positively correlated with CFP.*” (2003:427).

Hypothesis II: “...*relationship tends to be bidirectional and simultaneous.*” (2003:427).

Hypothesis III: “...*reputation appears to be an important mediator of the relationship.*” (2003:427).

Hypothesis IV: “...*stakeholder mismatching, sampling error, and measurement error can explain between 15% and 100% of the cross-study variation in various subsets of CSP-CFP correlations. Corporate virtue in the form of social and, to a lesser extent, environmental responsibility is rewarding in more ways than one.*” (2003:427).

Target audience	General business organisations, management
Region	Global
Time period of study	Jan 1972 - Dec 1997
Financial performance measure(s) - broad	Corporate accounting, investment performance
Financial performance measure(s) - specific	Stock market returns, P/E ratio, ROE, ROA, and others

¹ A meta-analysis study combines the result of several studies that address a set of related research hypotheses.

E, S or G measure(s) - broad	S, and E to a lesser extent
E, S or G measure(s) - specific	Broad study
Unit of measurement	Research studies
Number of units	52
Source of ESG data	ABI/Inform Global and PsycINFO, KLD, Council on Economic Priorities, and others
RI approach	Screening

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Schröder, M. (2004)

The performance of socially responsible investments: Investment funds and indices

Financial Markets and Portfolio Management, 18(2), pp.122-142

Summary Overall, the results show that while most SRI funds underperform their benchmarks, the differences are typically not statistically significant. The results of the performance analysis for the SRI indices revealed that only the Calvin index clearly underperformed the benchmarks, while the FTSE4Good index had a significantly negative alpha in one of the model versions. Most of the SRI indices exhibited a positive but insignificant alpha. The authors conclude that socially screened assets seem to have no clear disadvantage concerning their performance compared to conventional assets.

Test Test whether the performance of SRI funds and indices is not worse than those of conventional assets, as measured by Jensen's alpha¹.

Results Overall findings on ESG factors: **Neutral/Positive**

1. Of the German and Swiss funds, different versions of the model revealed that 5/16, 4/16 and 3/16 of the funds produced a positive alpha. In contrast, only one to two US funds of the thirty studied produced a positive alpha. While negative alpha prevailed, the differences were found to be insignificant in the majority of cases –more so in the US than in Germany and Switzerland.
2. Six of the ten indices show a positive but insignificant alpha, suggesting that the majority of SRI indices exhibit a performance that is equal to or even slightly better than the performance of the conventional benchmark indices.

Commentary The analysis is hampered by the short sample period, with large differences in alpha not showing up as being statistically significant. Nevertheless, the strong prevalence of negative alpha among SRI funds is a concern and needs to be followed up with further analysis to identify the source of underperformance. The authors suggest it has more to do with fund management fees and management costs than the style of management itself, but this proposition needs to be tested.

Target audience	Academic literature on portfolio theory and investment professionals
Region	US, Germany and Switzerland
Time period of study	Varied start date: mid-1990s to Sep 2002
Financial performance measure(s) - broad	Fund and indices
Financial performance measure(s) – specific	Jensen's alpha

¹ A risk-adjusted performance measure that represents the average return on a portfolio over and above that predicted by the capital asset pricing model, given the portfolio's beta and the average market return. This is the portfolio's alpha.

E, S or G measure(s) - broad	ESG
E, S or G measure(s) - specific	Fund and market index level analysis that apply social, ethical and environmental criteria
Unit of measurement	30 US funds, 16 German and Swiss funds, 10 SRI indices
Number of units	56
Source of ESG data	Thompson Financial Datastream database
RI approach	Screening

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Shank, T. M., Manullang, D.K. & Hill, R.P. (2005)

Is it better to be naughty or nice?

Journal of Investing, 14(3), pp.82-87

Summary The results suggest that the ‘nice’ firm portfolio outperformed the ‘naughty’ firm portfolio over a five and ten-year horizon, as the latter produced a positive alpha that was insignificant. The authors conclude that any anecdotal evidence that suggests investing in ‘vice’ is morally appropriate and financially sound cannot be confirmed. Furthermore, the authors argue that careful selection of ethics based corporations may represent value-maximising strategy with superior risk-adjusted earnings potential.

Test How does SRI performance compare to the performance of investment portfolios comprising ‘sin’ stocks (defined as defence, alcohol, gambling and pornography)?

Results Overall findings on ESG factors: **Positive**

1. Over a three-year period, both the ‘naughty’ firm portfolio and the ‘nice’ firm portfolio exhibited positive alpha, although neither was statistically significant.
2. Over a five-year period, both were positive but only the ‘nice’ firm portfolio was significant, with an excess return to the S&P 500 of 0.927%
3. Over a ten-year period, again, both portfolios produced a positive alpha but only the ‘nice’ firm portfolio was significant, with a 1.153% outperformance versus the market.

Commentary This study adds weight to the argument that ‘good’ investment criteria can outperform ‘bad’ stock performance. Naturally, the small number of stocks selected for analysis will be of some concern for potential investors, and further analysis with a larger pool of stocks would be beneficial to test for the size, style and sector effects that will impact on risk/return at the asset allocation level.

Target audience	Investment professionals
Region	US
Time period of study	Dec 1993 - Dec 2003
Financial performance measure(s) - broad	Portfolio returns based on selected stocks of ‘most responsible’ versus ‘most irresponsible’ stocks
Financial performance measure(s) - specific	Jensen’s alpha
E, S or G measure(s) - broad	ESG, with more S than E and G
E, S or G measure(s) - specific	Top 10 holdings of SRI mutual funds versus top 10 holdings of Ahern’s ‘vice’ fund
Unit of measurement	Stocks
Number of units	10 SRI stocks, 10 ‘vice’ stocks

Source of ESG data	Social Investment Forum
RI approach	Screening
Link to other articles	The results of this study contradict those of Hong (2006) which concluded that the exclusion of 'sin' stocks resulted in underperformance. The main advantage of this study over Hong (2006) is the simplicity of the sample selected for analysis, and the direct comparison of 'good' and 'bad' fund portfolios (avoiding any clouding of results with suppositions about the impact of ownership profile).

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Smith, M.P. (1996)

Shareholder activism by institutional investors: Evidence from CalPERS

The Journal of Finance, Vol. 51(1), pp.227-52

Summary This study examines the benefits of shareholder activism through a case study of CalPERS' actions via the focus fund list. The author found that when activism is successful in changing a company's governance structure, then it can result in a statistically significant increase in shareholder wealth. CalPERS were (and still are) regarded as a leader in activism in the US, thus, the author argues that if a positive effect was not found as a result of their activities, then it is unlikely to be found in other activists.

Test The dollar value net benefit to CalPERS as a result of its activism policy was computed by measuring abnormal returns of the targeted firm around the initial announcement of targeting by CalPERS, and comparing that to the returns at the public announcement of the outcome of targeting.

Results Overall findings on ESG factors: **Positive**

"On net, activism appears to be beneficial to CalPERS on a net of costs basis, as the value increase of its holdings from activism is almost US\$ 19 million over the 1987-93 period (for the 34 firms with sufficient data), while its estimated costs of activism over the same period were approximately US\$ 3.5 million (US\$ 500,000 per year)." (1996:251).

Target audience	Financial community
Region	US
Time period of study	Jan 1987 - Dec 1993
Financial performance measure(s) - broad	Stock performance
Financial performance measure(s) - specific	Stock returns, stock price, market-to-book ratio, operating performance
E, S or G measure(s) - broad	G
E, S or G measure(s) - specific	Shareholder activism
Unit of measurement	Companies
Number of units	51
Source of ESG data	CalPERS, Compustat, Centre for Research in Security Prices, S&P stock reports, Dow Jones news retrieval system, and S&P register of corporations, directors & executives
RI approach	Activism

Link to other articles

Links to Opler & Sokobin (1995) in terms of shareholder activism, but differs as the study examines shareholder activism for a single pension fund rather than the efforts of a coordinated group.

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Statman, M. (2000)

Socially responsible mutual funds

Financial Analysts Journal, 56(3), pp.30-39.

Summary The main focus and findings of the paper are twofold. Firstly, a comparison of the Domini Social Index (DSI) performance with the S&P 500 performance revealed that the risk-adjusted returns of the DSI are higher than that of the S&P 500 over the period May 1990 to September 1998. Secondly, an examination of the performance of 31 socially responsible mutual funds over the same time period showed that although the socially responsible mutual funds tend to underperform the S&P 500 and the DSI, they were found to outperform conventional mutual funds of equal asset size.

Test

Hypothesis I: Pooling investing power for something other than making money (i.e., combining social goals with investments) is no worse at making money than pooling it for money alone.

Hypothesis II: Socially responsible mutual funds returns do not fall short of conventional funds.

Results Overall findings on ESG factors: **Positive**

Hypothesis I: Affirmative. The specific result was that the DSI performed as well as the S&P 500. The risk-adjusted return of the DSI was slightly lower than the S&P 500 but the difference was not statistically significant.

Hypothesis II: Socially responsible mutual funds performed better than conventional funds of equal asset size but the difference is not statistically significant. Both the socially responsible funds and conventional funds trailed the S&P 500 by wide margins: 5.02 percentage points a year for the socially responsible funds, and 7.45 percentage points for the conventional funds.

Target audience	Investment management industry
Region	US
Time period of study	May 1990 - Sep 1998
Financial performance measure(s) - broad	Index (DSI and S&P 500) and mutual fund performance
Financial performance measure(s) - specific	Measures to test for Hypothesis I: eSDAR (excess standard-deviation-adjusted return, modified version of Sharpe ratio) and Jensen's alpha. Measures to test for Hypothesis II: esDAR, Jensen's alpha and expense ratio
E, S or G measure(s) - broad	Mainly S
E, S or G measure(s) - specific	Various social measures screened (e.g., diversity, employee relations; sale of military weapon systems, tobacco, alcohol)
Unit of measurement	Investment fund
Number of units	DSI Index = 400 stocks; 31 SRI mutual funds
Source of ESG data	Morningstar, Domini Social Investments
RI approach	Screening
Link to other articles	Statman, M. (2006), Socially responsible indexes: Composition, performance, and tracking error, The Journal of Portfolio Management, 32(3), pp.100-109.

Socially responsible indexes: Composition, performance, and tracking error

The Journal of Portfolio Management, 32(3), pp.100-109

Summary This paper aims to answer three questions:

1. How are socially responsible companies different from conventional companies?
2. Are the returns of socially responsible stocks likely to be higher or lower than those of conventional stocks?
3. What are the tracking errors of portfolios of socially responsible stocks relative to conventional benchmarks? (2006:100).

The authors attempt to do this by comparing the composition, returns and tracking error of the S&P 500 index, whose constituents are conventional companies, with that of four SRI indices (i.e., Domini 400 Social, Calvert Social, Citizens, and the US portion of the Dow Jones Sustainability index). The paper concludes that the, *“Returns of socially responsible indexes generally exceeded returns of the S&P 500 index”*, and that, *“The correlations between the returns of socially responsible indexes and the S&P 500 are high, but tracking errors can be substantial.”* (2006:108).

Test

Hypothesis I: Are the returns of socially responsible stocks likely to be higher or lower than those of conventional stocks?

Hypothesis II: What are the tracking errors of portfolios of socially responsible stocks relative to conventional benchmarks?

Results Overall findings on ESG factors: **Positive**

Hypothesis I: Returns of socially responsible indexes are generally higher than the returns of the S&P 500. For example, *“the monthly alpha of the Domini 400 Social Index during the 14 years May 1990-April 2004 was higher than the S&P500 alpha by 0.09 percentage points (but alphas are not statistically significant).”* (2006:108).

Hypothesis II: The correlation between the returns of socially responsible indices tend to be high, however, tracking errors are also high. For example, *“the mean difference between the returns of the Domini 400 Social Index and the S&P 500 in the 12-month periods was 2.49 percentage points, and the maximum difference was 8.01 percentage points.”* (2006:108).

Target audience	Investment management industry
Region	US
Time period of study	May 1990 - Apr 2004
Financial performance measure(s) - broad	Index performance and characteristics; comparing the Domini 400 Social Index, Calvert Social Index, Citizens Index and the US portion of the Dow Jones Sustainability Index with the S&P 500
Financial performance measure(s) - specific	Sharpe ratio, alpha
E, S or G measure(s) - broad	Mainly S
E, S or G measure(s) - specific	Social characteristics (e.g., community, diversity, employee relations, human rights, alcohol, firearms)
Unit of measurement	Companies
Number of units	Number of companies used for rating companies by characteristic: 3000; number of companies in the 5 indices used varies.

Source of ESG data	KLD Research and Analysis Inc.
RI approach	Screening
Link to other articles	Statman, M. (2000), Socially responsible mutual funds, <i>Financial Analysts Journal</i> , 56(3), pp.30-39.

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Van de Velde, E., Vermeir, W. & Corten, F. (2005),

Corporate social responsibility and financial performance

Corporate Governance, 5(3), pp.129-138.

Summary The authors conclude that although the alpha results were not found to be statistically significant, the effect of the sustainable rating was found to have a positive impact on alpha over the sample period. The unadjusted results illustrated the high sensitivity of the sustainable portfolios with large cap and growth biases. After adjusting for these effects, the authors conclude that there is potential to benefit from potential outperformance of sustainable investment.

Test A positive relationship between stock returns and sustainability ratings based on four constructed sustainability groups: 'best', 'good', 'bad' and 'worst'.

Results Overall findings on ESG factors: **Positive**

On a style-unadjusted basis, the results showed the lowest scoring portfolio of stocks had the highest performance, although the results were insignificant. After adjusting for style, the results flipped and showed that the best performing portfolio is the 'good' portfolio with a monthly outperformance of 20bp, whereas the 'bad' and 'worst' portfolios underperformed by 34bp and 19bp, respectively. The alpha results were insignificant after adjustment.

Commentary This study lends support to the argument that high sustainability rating is associated with higher firm and portfolio performance. It also emphasises the strong style bias associated with sustainability criteria that investors will need to take into account in asset allocation decisions, such as large firm and growth stock bias.

Target audience	Academic literature on responsible investment and investment professionals
Region	Euro zone
Time period of study	Jan 2000 - Nov 2003
Financial performance measure(s) - broad	Sustainability rating and stock performance
Financial performance measure(s) - specific	Sustainability rating and stock performance
E, S or G measure(s) - broad	ESG
E, S or G measure(s) - specific	Human resources, environment, customers & suppliers, community & society, corporate governance
Unit of measurement	Stocks
Number of units	204 - 304
Source of ESG data	Vigeo
RI approach	ESG integration/Screening
Link to other articles	Concurs with Derwall (2005) but contradicts the results of Brammer et al. (2006), although the latter is more biased towards 'ethical' rather than sustainability criteria.

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Key academic findings

As interest in responsible investment among individual and institutional investors has grown over recent decades, the breadth and depth of academic research on measuring the relationship with portfolio performance has expanded. In this report, a sample of academic studies have been selected on the basis of their representativeness by region, by research methods, and the extent to which they measure the financial effect of E, S or G factors on portfolio performance.

Of the twenty studies reviewed, ten showed evidence of a positive relationship between ESG factors and portfolio performance, seven reported a neutral effect and three a negative association. The results vary depending on the research methods used, and some of the studies still refer to a relatively short sample period that makes statistical analysis difficult to interpret. Also worth noting is that there is some confusion within the academic community regarding whether SRI should be a style of its own. While the results vary depending on the factor being studied, the region and the sample period, the evidence suggests that there does not appear to be a performance penalty from taking ESG factors into account in the portfolio management process. A sample of the key studies for each of the E, S and G factors are presented below:

- **Environmental factors:** There are two studies of note that measure the impact of environmental factors on portfolio performance. Derwall et al. (2005) found that the benefits of considering environmental criteria in the investment process can be substantial and are statistically significant. Van de Velde et al. (2005) also found that companies with high sustainability ratings tend to have a positive impact on alpha, although sustainable portfolios were found to be highly sensitive to style biases.
- **Social factors:** The academic papers to date have tended to measure the 'social' effects on performance in terms of 'sin' stocks and the impact of screening out such exposures (e.g., tobacco, arms, sex industry). Some of these studies have found a negative effect (e.g., Chong et al., 2006; Geczy et al., 2005; Hong & Kacperczyk, 2006), while others have found a positive effect (e.g., Statman, 2000; 2006). Future academic studies that measure the impact of including social factors into company valuations (as opposed to screening) will help to measure the value-added of social factors such as a company's relationship with its stakeholders, supply chain management, health and safety, customer satisfaction, labour relations and working conditions. Many of these factors already feature as components of strategic management at the company level, but are often overlooked in the appraisal of long-term shareholder value within the investment community.
- **Corporate governance factors:** The academic evidence evaluating the impact of good corporate governance on company and portfolio performance suggests that there is a positive relationship between the two, although it is not always straightforward to demonstrate this statistically or to isolate the effects from other 'factors'. The study by Gompers et al. (2003) concluded that good corporate governance was strongly correlated with stock returns during the 1990s. Opler & Sokobin (1995) also found that coordinated shareholder activism is effective in bolstering returns; with Smith (1996) reporting that when activism is successful in changing a company's governance structure, then it can result in a significant increase in shareholder wealth.

The notion of 'ESG' is a relatively new term of phrase that is more commonly used by practitioners, as opposed to academics. Going forward, as this terminology becomes more widely adopted

within academia, we expect to see more studies emerge that measure the extent to which ESG and portfolio performance are positively related. There are two key sources of research output on responsible investment that we expect to see over the coming years. Firstly, a large research grant provided by Mistra (a Swedish foundation) was recently established to support the extension of new academic research on investor behaviour and financial performance related to sustainable investment. This research platform commenced in 2003 and is due to progressively release its results over the coming one to two years¹. Another source of new research focused on measuring the financial effects of ESG is being carried out by the European Centre for Corporate Engagement (ECCE), which was established to help practitioners and scholars understand how businesses and financial markets can promote sustainable development.² Over the coming years, we look forward to the release of further research and a rigorous academic debate on the relative merit of integrating ESG factors into investor behaviour and investment processes.

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- 1 See www.sirp.se for further details of the Sustainable Investment Research Platform (SIRP) funded by Mistra. The research program is a joint effort by SIRP at Umeå School of Business (USB) and the European Centre for Corporate Engagement (ECCE) connected to RSM Erasmus University and the University of Maastricht.
 - 2 See www.corporate-engagement.com.

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Overview of broker studies

In recent years, investor awareness of the materiality of ESG factors in building long-term company value has increased as a result of the work of important global initiatives such as the Principles for Responsible Investment, the Equator Principles, and the Enhanced Analytics Initiative. In response to this trend, brokers are increasingly producing investment research on the impact of ESG issues on public company performance.

Research in this area has been primarily thematic in nature and focused on the risks and opportunities associated with specific ESG issues such as climate change. However, more recent work has included comprehensive analysis of ESG factors, examining the relationship between a company's behaviour on these issues and its share price performance. We believe this type of research will become increasingly common, as demand for this analysis grows and the relationships between ESG factors and various measures of investment performance become more defined.

Given the increasing prevalence of this form of ESG research, we have included a review of some broker research on the materiality of these factors on investment performance along with our review of academic research on portfolio performance. Our selection of studies comes from a list of broker research compiled by the UNEP FI Asset Management Working Group (AMWG), representing noteworthy analyses of ESG factors and investment performance. It is important to bear in mind that this list, compiled in the first quarter of 2007, should be viewed as a sample of recent and most commonly produced type of broker research that AMWG members found useful and interesting, instead of an exhaustive list that reflects all the work that is being conducted by the brokerage community.

The ten studies we selected to review from this list were chosen to provide variation across regions, sectors and research methods (e.g., thematic, ESG integration). For consistency, the framework that was used to present the key methods, results, and implications of the academic studies has been applied to these reports.

In the case of thematic research, however, we made one modification to this framework. For these studies, we assigned a neutral rating for 'overall findings on ESG factors' in spite of any positive commentary from the authors. The rationale for this treatment was to prevent any implication of a positive relationship between ESG factors and performance for studies which did not employ a quantitative analysis.

Narrative analysis

- Full academic reference
- Summary
- Test
- Results

Tabular analysis

- Target audience
- Region
- Time period of study
- Financial performance measure(s) – broad
- Financial performance measure(s) – specific
- E, S or G measure(s) – broad
- E, S or G measure(s) – specific
- Unit of measurement
- Number of units
- Source of ESG data
- RI approach
- Link to other articles (as applicable)

	Authors	Title of study	Time period of study	E, S or G	RI approach	Findings on ESG factors
1	Dell, B., McMahon, N., Goller, A., & Gruber, S. (2007), Berstein Research	Berstein energy: An energy or environmental problem? The impact of CO ₂ regulation on oil demand and alternative plays	Feb 2007	Mainly E	Thematic	neutral*
2	Bumm, P., Carballo, I., Halden, D., Lambert, P., Lamotte, C., Ocina, J.R., Patrick, D., Sikorsky, M. & Voisin, S. (2007), Cheuvreux	Biofuel challenges: A shift in leadership?	1990-2005	E	Thematic	neutral*
3	Tyrrell, M. & Brown, M. (2006), Citigroup Global Markets	Sustainability compendium: Updating our sustainable investable themes	Feb 2006	ESG	Thematic/ ESG integration	neutral*
4	Forrest, S., Ling, A., Lanstone M. & Waghorn, J. (2006), Goldman Sachs	Enhanced energy ESG framework	2004-2006	ESG	ESG integration	positive
5	Fox, M., Forrest, S., Ling, A. & Lynch, M. (2007), Goldman Sachs	Global food & beverages: Integrating ESG	1992-2006	ESG	ESG integration	neutral
6	Ling, A., Forrest, S., Mallin-Jones, P. & Feilhauer, S. (2006), Goldman Sachs	Global mining and steel: Integrating ESG	2002-2005	ESG	ESG integration	positive
7	Llewellyn, J. (2007), Lehman Brothers	The business of climate change: Challenges and opportunities	Feb 2007	Mainly E	Thematic	neutral*
8	Palmier, H. & Desmartin, J.P. (2006), Oddo Securities	Nanotechnologies: There are still plenty of opportunities and uncertainties at the bottom	2004-2015	E and S	Thematic	neutral*
9	Hudson, J. & Knott, S. (2006), UBS Investment Research	Alternative alpha: Infrastructure - The long view	Nov 2006	ESG	Screening	neutral
10	Garz, H. & Volk, C. (2007), WestLB Extra-Financial Research	What really counts. The materiality of extra-financial factors	2000-2005	ESG	ESG integration	positive

**While the authors of these thematic studies were generally positive on ESG factors explored, specific tests for correlations between these considerations and investment performance were not conducted. For this reason, a neutral rating was assigned.*

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Review of broker studies

1

Dell, B., McMahon, N., Goller, A. & Gruber, S. (2007)

Berstein energy: An energy or environmental problem? The impact of CO₂ regulation on oil demand and alternative plays.

Berstein Research

Summary The ESG approach applied by Bernstein Research for this report is primarily thematic in nature, focusing on the issues and opportunities associated with CO₂ regulation. The authors examine policy developments over the past twelve months, with particular emphasis on the Kyoto Protocol¹. Based on their analysis of the impact of these developments and their forecast of future political trends, the authors conclude that, *“there is an emerging industry around CO₂ extraction, sequestration, and trading, all of which appear poised to grow rapidly over the next 5-10 years with liquidity also building in the CO₂ emissions credit market.”* (2007:2). However, the growth of this industry in the US will be somewhat moderated by decreasing demand as marginal costs of production are in a long-term upward trend.

Test This thematic study outlines the risks and opportunities of investing in companies with exposure to CO₂ regulation.

Results Overall findings on ESG factors: **Neutral***

The main conclusion is that long-term outlook for crude oil remains positive, even with the emergence of new CO₂ regulations and technologies. Companies that *“embrace alternative solutions first”* (2007: 2) are expected to benefit from a first mover advantage in these emerging industries as well as decreased regulatory costs.

* *Although the authors of this study believe that a company’s response to CO₂ regulations and technologies will have an impact on investment performance, correlation between these factors and investment performance was not demonstrated. Consequently, we have deemed the findings of this study to be neutral towards ESG factors.*

Commentary This research examines the outlook for CO₂ industries (e.g., extraction, sequestration, and trading) under the assumption that the world oil demand will moderate due to increasing marginal costs of production. The authors outline supply and demand trends observed in the natural gas market over the past twenty years and hypothesise that similar dynamics in the world oil market could lead to supplies topping out at under 100Mbpd², which is only 15Mbpd above current levels.

Target audience	Investment management industry
Region	US
Time period of study	Feb 2007
Financial performance measure(s) - broad	Thematic investing, investment performance
Financial performance measure(s) - specific	n/a
E, S or G measure(s) - broad	Mainly E

1 This international agreement, which builds on the United Nations Framework Convention on Climate Change, sets legally binding targets and timetables for cutting the greenhouse gas emissions of industrialised countries. See <http://unfccc.int>.

2 Million barrels per day.

E, S or G measure(s) - specific	Broad overview of CO ₂ industries: examines world oil demand, environmental trends and implications, investment opportunities
Unit of measurement	Stocks
Number of units	Companies with exposure to CO ₂ themes were identified; however, specific ratings and performance were not provided.
Source of ESG data	Berstein Research, Bloomberg, Carbon Dioxide Information Analysis Center, Chicago Climate Exchange, DOE, EIA, IEA, JPA, US Highway Administration
RI approach	Thematic investing

2

Bumm, P., Carballo, I., Halden, D., Lambert, P., Lamotte, C., Ocina, J.R., Patrick, D., Sikorsky, M. & Voisin, S. (2007)

Biofuel challenges: A shift in leadership?

Cheuvreux

Summary This study defines business cases in the biofuel industry, focuses on environmental risks and opportunities, and covers small to mid-sized specialists and large energy players. It cites biofuels' benefits, including encouraging legislation trends worldwide (e.g., Kyoto Protocol, tax incentives), and anticipates the next generation of biofuels that will rely on technology using the lignocellulose chain¹, which is expected to be dominant in the future. However, it also underscores negative effects in terms of carbon balance, deforestation, biodiversity loss and food-energy tradeoffs, along with difficulties concerning land availability and major pricing issues.

The study concludes that while biofuels is indeed an opportunity, there are still many uncertainties. It underscores the need for changes in legislation, and greater efficiency such as improving the technology to reduce biomass to sugar and lowering the capital costs to build cellulosic refineries.

Test Highlight stocks active in the biofuel industry. The study looks into large caps diversifying their portfolios in the alternative energy sector, and small and mid caps focusing solely on biofuels.

Results Overall findings on ESG factors: **Neutral***

The authors clearly view biofuels as an opportunity and beneficial to corporate marketing. In most cases, biofuels account for less than 10% of the total sales of large energy players, which are diversifying their portfolios to cope with new environmental laws and the anticipated scarcity of fossil fuel. However, the authors are cautious as they strive to obtain a clearer understanding of the business cases in this emerging industry. The study reveals contrasting results for small and mid-sized players. While some are achieving robust track records, others are failing to meet targets and experiencing high sensitivity to taxation and to prices of raw materials.

* *This study is thematic in nature and correlation between ESG factors and investment performance was not demonstrated. Therefore, we have assigned a neutral rating.*

Commentary The surge of alternative energy sources such as biofuels will also have to deal with opposition from various parties affected. Adopting the biofuel theme could be a real option in the long run. At this juncture, given the prevailing uncertainties and with smaller players still seemingly fragile, rigorous stock-picking appears to be the more judicious route.

¹ Trees, grasses and agricultural residues are examples of biomass belonging to the lignocellulose chain.

Target audience	Investment management industry
Region	Europe
Time period of study	1990-2005
Financial performance measure(s) - broad	Risk-adjusted share performance
Financial performance measure(s) - specific	DCF (discounted cash flow) valuation models and peer group comparison. Focus on positive contribution to EPS (earnings per share) generation as this industry is relatively new; hence, more in an investment phase rather than a credible cash generation phase.
E, S or G measure(s) - broad	E
E, S or G measure(s) - specific	Holistic view of assessed companies, combining mainstream financial criteria and extra-financial criteria, and mainly focusing on the environment. SWOT (Strengths, weaknesses, opportunities and threats) analysis of each stock in order to define a comprehensive investment case.
Unit of measurement	Stocks
Number of units	13
Source of ESG data	Internal (Cheuvreux research team)
RI approach	Thematic investing

3

Tyrrell, M. & Brown, M. (2006)

Sustainability compendium: Updating our sustainable investable themes

Citigroup Global Markets

Summary Citigroup's first 'Sustainability compendium', published in July 2005, identified ESG factors that are of "*sufficient magnitude to cross a range of sectors*" (2006:6) and outlined the authors' expectations of how various ESG factors could affect each stock market sector. This report provides both an update of these investment themes and an assessment of the impact of these factors. Within each sector, the authors review the performance of companies that were recommended to ESG investors in the year prior and make recommendations on the suitability of these stocks for ESG funds and/or key issues for engagement.

Test This research reviews Citigroup's ESG themes and identifies investment drivers for securities

Results Overall findings on ESG factors: **Neutral***

The authors assert that social and/or environmental factors can be used to identify valuation anomalies between investments. These considerations may also be used to identify long-term risks to companies' business models or opportunities to create new ones.

* *Although the authors of this study believe that ESG factors can be used to identify investment opportunities, positive correlation between these factors and investment performance was not demonstrated. Consequently, we have deemed the findings of this study to be neutral towards ESG factors.*

Target audience	Investment management industry
Region	Global
Time period of study	Feb 2006
Financial performance measure(s) - broad	Thematic investing, sustainability rating
Financial performance measure(s) - specific	n/a
E, S or G measure(s) - broad	ESG

E, S or G measure(s) – specific	Broad study examining key sustainable investment themes within various sectors as well as important cross-sectoral sustainability issues.
Unit of measurement	Stocks
Number of units	Specific company ratings were not given; however, the study shows how securities are exposed to Citigroup’s key ESG themes.
Source of ESG data	Citigroup investment research, IEA, OECD, UNICA
RI approach	Thematic investing, ESG integration
Link to other articles	Updates on Citigroup’s Sustainability Compendium provided by Tyrrell, M. & Brown, M. (Sep 2006, Jan 2007, Jul 2007)

4

Forrest, S., Ling, A., Lanstone, M. & Waghorn, J. (2006)

Enhanced energy ESG framework

Goldman Sachs

Summary Goldman Sachs’ ESG research aims to integrate ESG factors into industrial analysis and valuation per sector, and to identify investment opportunities related to alternative energy, water and other emerging ESG issues. This report updates an initial one dealing with links between long-term drivers of valuation and performance in the energy industry. It brings together the ESG framework analysis – with enhanced clarity in definitions and updated for 2005 data – with their latest industrial analysis (“Global energy: 125 projects to change the world,” Feb 2006). In addition, it incorporates quantitative valuation techniques developed by Goldman Sachs’ Tactical Research Group in their “Director’s Cut” reports. The winners based on the ESG frameworks have outperformed their peers by an average of 5% (Feb 2004 to Aug 2005) and 6% (Aug 2005 to Oct 2006).

Test Demonstrate a positive link between stock returns and the integration of ESG factors into energy industry analysis and valuation.

Results Overall findings on ESG factors: **Positive**

The study reveals a strong link between ESG winners and companies with exposure to the industry’s new legacy assets. The authors believe that access to new legacy assets will drive corporate returns in the medium to long term, and that returns drive valuation and share price performance across the sector and markets (although new legacy assets may have a downside potential as well). Furthermore, they believe that the strong correlation between ESG leaders and stock market performance will continue.

Target audience	Investment management industry
Region	Global
Time period of study	2004-2006
Financial performance measure(s) – broad	Long-term drivers of valuation and performance in the energy industry
Financial performance measure(s) – specific	Corporate performance within industry, society, environment and markets (ESG metrics, industry themes, cash returns and valuation)
E, S or G measure(s) – broad	ESG
E, S or G measure(s) – specific	Corporate governance, social (leadership, labour, communities and investment) and environment
Unit of measurement	Stocks; ESG indicators

Number of units	25 stocks; 28 ESG indicators divided into 5 categories: (1) corporate governance, (2) leadership, (3) labour, (4) communities & investment, (5) environment
Source of ESG data	Goldman Sachs research: (1) Global mining and steel: Integrating ESG, Jul 2006, (2) European media: Integrating ESG, Feb 2006, (3) Global energy: Integrating ESG, Aug 2005, (4) Global energy: Environmental and social issues count, Feb 2004, (5) Global energy: 125 projects to change the world, Feb 2006
RI approach	ESG integration

5

Fox, M., Forrest, S., Ling, A. & Lynch, M. (2007)

Global food & beverages: Integrating ESG

Goldman Sachs

Summary The ESG framework developed by Goldman Sachs views ESG performance as a proxy for management quality insofar as it reflects the company's ability to respond to long-term trends and maintain a competitive advantage. They look at ESG factors as an additional lens that analysts can use in their models when making investment recommendations. While it can be said that management quality is already being taken into account by analysts on a qualitative basis, ESG performance helps highlight changing expectations by adding quantitative data to measure management performance.

Test Identify stocks that combine leadership on ESG factors (measured by ESG rating), good strategic positioning with regard to industry trends, and high share price performance (measured by cash return spreads and valuations).

Results Overall findings on ESG factors: **Neutral**

This report does not attempt to link companies' extra-financial performance with their share price performance. The authors state that their research to date (covering 5 sectors and 120 companies) has not revealed any links between ESG performance and the following:

- growth (calculated through sales, EBITDA¹ and EPS² growth)
- valuations (calculated with ROE³, ROCE⁴ and CROCI⁵)
- valuations (calculated with price/earnings, price/book value, price/dividend, EV⁶/EBITDA, EV/FCF⁷ and EV/DACF⁸)

Commentary The authors are not trying to demonstrate a causality link between ESG performance and financial performance. They believe it would be difficult to prove, partly because of circular references and time lags, and focus instead on making investment recommendations for stocks that perform well on ESG factors, industry trends and valuations.

Target audience	Investment management industry
Region	Global
Time period of study	1992-2006

- 1 Earnings before deduction of interest, taxes, depreciation and amortisation (EBITDA).
- 2 Earnings per share (EPS) – a company's annual earnings divided by the number of shares in issue.
- 3 Return on equity (ROE) – a company's earnings divided by shareholder funds.
- 4 Return on capital employed (ROCE) – a ratio that indicates the efficiency and profitability of a company's capital investments.
- 5 Cash return on capital invested (CROCI) – a method of valuation that compares a company's cash return to its equity. Also known as 'cash return on cash invested.'
- 6 Enterprise value (EV) – a measure of company value calculated as market capitalisation plus debt, minority interest and preferred shares, minus total cash and cash equivalents.
- 7 Free cash flow (FCF) – a measure of financial performance calculated as operating cash flow minus capital expenditures.
- 8 Debt-adjusted cash flow (DACF) – represents the operating cash flow excluding financial expenses after taxes.

Financial performance measure(s) - broad	Share price performance
Financial performance measure(s) - specific	Cash return-driven valuation due to a high correlation between market valuation premiums (EV/GCI ¹) and cash returns (measured by CROCI/WACC ²) over the last 15 years.
E, S or G measure(s) - broad	ESG
E, S or G measure(s) - specific	25 ESG indicators, 7 of which are specific to the food & beverage sector.
Unit of measurement	Stocks
Number of units	30
Source of ESG data	ASSET4
RI approach	ESG integration

6

Ling, A., Forrest, S., Mallin-Jones, P. & Feilhauer, S. (2006)

Global mining and steel: Integrating ESG

Goldman Sachs

Summary This paper analyses 15 mining and 13 steel companies based on a variety of ESG factors. Companies in the two sectors are scored using two different frameworks, which are composed of 50 industry-specific metrics that are weighted according to their materiality. The authors conclude that a company's ESG performance is *"linked to improvement in cash returns and ability to operate in a changing world."* (2006:1). The report identifies sustainable investing opportunities within the sample group based on the companies' ESG and financial performance.

Test Test for a positive relationship between changes in ESG scores and changes in a company's cash flow.

Results Overall findings on ESG factors: **Positive**

The study found a positive link between the change in a company's cash returns – from its historical average (2002-2005) to its future average (2006-2008) – and its overall ESG score (based on 2004 data).

Target audience	Investment management Industry
Region	Global
Time period of study	2002-2005
Financial performance measure(s) - broad	Sustainability rating, stock performance
Financial performance measure(s) - specific	Cash return on capital invested, ESG rating
E, S or G measure(s) – broad	ESG
E, S or G measure(s) – specific	50 objective measures were used to produce a company's ESG ranking relative to its peers. ESG scores comprised of a 20% weighting for corporate governance, 60% for social, and 20% for environmental factors.
Unit of measurement	Stocks
Number of units	28
Source of ESG data	Goldman Sachs research
RI approach	ESG integration

1 Gross cash invested (GCI) – gross tangible and intangible assets before depreciation or write-offs plus investments in associates and working capital.

2 Weighted average cost of capital (WACC) – a calculation of a firm's overall cost of capital that weights each source of finance proportionately (i.e., equity and debt).

The business of climate change: Challenges and opportunities

Lehman Brothers

Summary This paper outlines the science supporting climate change theories and examines potential economic implications and investment opportunities. While the authors view climate change as a slow-moving force, they note that policy responses to the issue are likely to induce sharp changes in asset values. This is likely to occur through the creation of significant liabilities or an increased cost of doing business. The various effects of climate change – regulatory, physical, competitive, and reputational (including litigational) exposure, as well as the creation of new technological and business opportunities – are examined across a variety of industries.

Test This thematic study outlines the key scientific theories supporting climate change and introduces opportunities for investment in promising new technologies. The authors also examine climate change risks for each sector.

Results Overall findings on ESG factors: **Neutral***

The study concludes that climate change has the potential to “*gradually but powerfully change the economic landscape*” and cause “*periodic sharp movements in asset prices.*” (2007:1). The authors also believe that the implications for business are likely to be material to investment performance. Climate change factors, however, must be continually weighed against other business fundamentals and company valuations in order to assess their risk/reward potential.

* *Although the authors of this study believe there is a relationship between climate change factors and asset prices, this potential correlation was not demonstrated through quantitative analysis. Consequently, we have assigned the findings of this report neutral rating towards ESG factors.*

Target audience	Investment management industry
Region	Global
Time period of study	Feb 2007
Financial performance measure(s) - broad	Thematic investing
Financial performance measure(s) - specific	n/a
E, S or G measure(s) - broad	Mainly E
E, S or G measure(s) - specific	Comprehensive overview of climate change covering the science, emerging technologies, public policy, trading schemes and international cooperation
Unit of measurement	Sectors
Number of units	Specific company ratings were not given; however, the study examines climate change across various sectors.
Source of ESG data	Lehman Brothers research, Stern Review ¹
RI approach	Thematic investing

1 Stern Review: The Economics of Climate Change, HM Treasury, 2006. See www.hm-treasury.gov.uk.

Nanotechnologies: There are still plenty of opportunities and uncertainties at the bottom

Oddo Securities

Summary The nanotechnology¹ market is currently led by major players in the chemical and semiconductor industries of Germany and Japan. The industrial development of nanotechnology and the accompanying standardisation efforts have created a natural market for laboratory and metrology equipment, and industrial security and simulation software. In the next decade, a broad spectrum of industries encompassing the environment (e.g., water, renewable energy), aeronautics and space, automotives, civil security, pharmaceuticals, and agriculture are all expected to be high consumers of nanotechnology.

Test Demonstrate risks and opportunities in investing in nanotechnology. Show the existence of new opportunities in product design and performance and new markets (e.g., nano-materials, information nanotechnology, nano-biotechnology), as well as their links to various risks such as poor regulation and hygiene, security and environmental (HSE) issues.

Results Overall findings on ESG factors: **Neutral***

The authors state that nanotechnology offers new opportunities in product design and performance, and opens the door to new markets. However, they also recognise that is confronted with a poor outlook on HSE issues and uncertainty over how regulations will take shape. The authors view nanotechnology as a sensitive subject strategically in terms of potential applications, and from the perspective of potential exposure to societal and HSE risks.

* *This study is thematic in nature and correlation between ESG factors and investment performance was not demonstrated, therefore we have assigned a neutral rating.*

Target audience	Investment management industry/financial community
Region	Global
Time period of study	2004-2015
Financial performance measure(s) – broad	Investment opportunities/stock performance linked to product improvement
Financial performance measure(s) – specific	Stock market returns
E, S or G measure(s) – broad	E and S
E, S or G measure(s) – specific	Hygiene, security & environment (HSE), R&D
Unit of measurement	Stocks and research studies
Number of units	No specific company ratings but shows evolution of nanotechnologies in the US, Western Europe, Japan and others.
Source of ESG data	French Ministry of Environment and academic studies
RI approach	Thematic investing

1 Nanotechnology concerns processes where the output has dimensions on the scale of a billionth of a metre in size. At this dimension, materials take on new physical and chemical properties with potentially breakthrough implications on performance and cost.

Hudson, J. & Knott, S. (2006)

Alternative alpha: Infrastructure - The long view

UBS Investment Research

Summary UBS' approach assumes that ESG factors are embedded in any firm's corporate strategy and as such, these factors can also affect financial performance. With this in mind, the firm has developed an ESG framework (comprising key issues that are expected to act as catalysts for industry change) that it integrates into mainstream equity research. This report provides one example of UBS' approach. The primary focus is twofold. Firstly, the authors identify ESG factors that are likely to drive and influence investment in infrastructure assets and provide investment recommendations from UBS' research universe. Secondly, the report suggests that consideration of long-term environmental factors may provide guidance on short-term investment volatility, particularly in falling markets.

Test Test for a positive relationship between infrastructure stock returns and ESG performance over a five-year period. Returns for groups of stocks (Innovest's top AAA-rated stocks were compared to an equivalent number of CCC-rated companies) were examined relative to their country indices.

Results Overall findings on ESG factors: **Neutral**

Although the study found no evidence of superior returns by the top ESG-rated group over a five-year period, lower-ranked stocks were found to be more volatile when world equity markets were falling.

Target audience	Investment management industry
Region	Global
Time period of study	Nov 2006
Financial performance measure(s) – broad	Thematic investing, sustainability rating, stock performance
Financial performance measure(s) – specific	Returns, alpha, sustainability rating
E, S or G measure(s) – broad	ESG
E, S or G measure(s) – specific	Broad study
Unit of measurement	Stocks
Number of units	60
Source of ESG data	Innovest Strategic Value Advisors
RI approach	Screening

Garz, H. & Volk, C. (2007)

What really counts. The materiality of extra-financial factors

WestLB Extra-Financial Research

Summary The study conducted a two-pronged materiality test on 120 ESG factors at two levels of aggregation. The objective was to determine a correlation with financial measures (plausibility condition) and the statistical significance of the relationship (threshold condition). At the first level of aggregation (the triple bottom line of environment, governance and stakeholder), 198 regressions were run, resulting in 27 factors meeting both materiality tests. Almost half of these correlations related to risk; none related to growth. At the second level of aggregation (under the groupings of policies, management systems, reporting and ESG performance), 72 regressions

were run, resulting in 8 factors meeting both materiality tests. 75% of these correlations related to risk. The study goes on to test 71 sector-specific variables through 1,278 regressions, resulting in 32 factors showing a statistically significant relationship to risk.

Test Test for materiality of extra-financial factors through standard econometric methods on 3,000 relationships.

Results Overall findings on ESG factors: **Positive**

Strong relationship between extra-financial performance and financial risk surrogates (e.g., cost of capital). No significant relationship with other financial variables (e.g., share price performance, valuations, profitability, growth).

Commentary The authors recognise that the link with financial risks being the most pronounced one is partly due to the fact that most ESG indicators used in their rating system do not adequately capture the opportunity side of sustainability/ESG themes. This analysis therefore supports a correlation between extra-financial and financial variables when examining the relationship from a risk perspective.

Target audience	Investment management industry
Region	Euro zone
Time period of study	2000-2005
Financial performance measure(s) - broad	risk, share price performance, valuation, profitability, growth
Financial performance measure(s) - specific	(1) share price return, (2) stock volatility (standard deviation of monthly stock return) or beta (CAPM), (3) price-earnings ratio, book-to-market ratio, price-to-cash flow ratio, (4) ROE, EBIT/EV, EBITDA/EV, (5) EBIT, sales, turnover
E, S or G measure(s) - broad	ESG
E, S or G measure(s) - specific	120 extra-financial indicators
Unit of measurement	Stocks
Number of units	540
Source of ESG data	SiRi
RI approach	ESG integration
Link to other articles	Reference to Graham, Harvey, Rajgopal (2006) on sacrificing long-term value creation for short-term performance, and Bassen et al. (2006) on the association of extra-financial variables and financial risk measures.

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Key broker findings

As mentioned earlier, the selection process took into consideration the need to provide a sample with varying regions, sectors and research methods. Although the sample may be limited in terms of corporate governance and emerging markets studies, our view is that the ten studies we selected are representative of the growing type of ESG research that is currently most commonly produced by brokers.

To date, most brokers seem inclined to conduct thematic research rather than a quantitative ESG analysis. Again, this is reflected by the sample with half of the studies being thematic in nature. Notable exceptions are the expanding compilation of sector-wide studies by brokers such as WestLB and Goldman Sachs. Thematic studies on climate change, renewable energy and other emerging ESG issues such as nanotechnology are becoming more common, as evidenced by the studies of Bernstein Research, Cheuvreux, Lehman Brothers and Oddo Securities, to name a few. Aside from increasing environmental constraints and societal expectations, a primary driver is that industries related to these emerging ESG issues have a high potential to generate new sources of revenue and profit. Bernstein Research concludes that, *“There is an emerging industry around CO₂ extraction, sequestration, and trading, all of which appear poised to grow rapidly over the next 5-10 years with liquidity also building in the CO₂ emissions credit market”* (2007:2). The caveat is that, time and again, market events have shown that today’s promising new entrants do not necessarily become tomorrow’s successful enterprises.

It should be highlighted that the studies involve two analytical dimensions – quantitative and qualitative. In most cases, quantitative analysis resulted in an assumed positive influence of ‘good citizenship’ on the overall economic performance of a company. This is consistent with the posture of Goldman Sachs, which views *“ESG performance as a proxy for management quality, in so far as it reflects the company’s ability to respond to long term trends and maintain a competitive advantage”* (2007). The studies are noticeably market and investment-oriented to generate ideas at the thematic and stock level. From this standpoint, there is not much difference from traditional research. However, the details reveal that the analysed theme or sector was chosen mainly due to its environmental character or societal impacts. It is also noteworthy that ESG criteria (e.g., environmental footprint, corporate governance) are being combined with traditional financial criteria (e.g., earnings per share, price-earnings ratio, return on equity) in order to provide a more holistic and longer-term assessment of the related stocks.

While brokers usually measure ex post that ‘good’ companies have an above average performance, it is still very difficult to find a clear link between share price volatility, the ability to generate cash flow, or sales growth on the one hand; and good human resource management, use of efficient environmental management systems, or the ability to mitigate climate change risks on the other hand. This is not surprising – ESG factors have not yet been analysed long enough and in sufficient detail to allow greater comparability and to identify more distinct linkages with traditional financial criteria. Moreover, ESG factors have not yet been fully taken into account and priced in by many investors.

The studies suggest that there are important reasons to look at ESG factors more closely. Firstly, an investor could generate an initial statistical link. Secondly, as stated by Lehman Brothers, ESG issues, specifically climate change, can *“gradually but powerfully change the economic landscape”* and cause *“periodic sharp movements in asset prices.”* (2007:1). The phrase ‘gradually but powerfully’ is meaningful as climate change can indeed have a strong influence, although

probably over a long-term period. This denotes the underlying reason why integrating ESG factors, which entails a long-term approach, remains to be a great challenge – financial markets primarily have a short-term mindset. The release of quarterly earnings can completely and instantly change the picture.

Yet UBS' study suggests that consideration of long-term investment factors may provide guidance on short-term investment volatility, particularly in falling markets. Indeed, this is an interesting finding as it indicates that dealing properly with ESG issues could have a positive contribution to financial risk mitigation, hence, a proxy for good management. In this vein, it is insightful to review the definition of discounted cash flow (DCF), one of the most well-established stock valuation methodologies. The DCF works on the assumption that the current valuation of a stock is the discounted sum of its future cash flows. The discount rate underscores a company's level of intrinsic risk, while the discounted cash flows reflect today the company's perceived ability to generate excess returns in the future. In other words, if a company is able to address its full risk exposure, both short and long-term, there is conceivably greater risk reduction and enhanced opportunities. Climate change, for example, is mainly perceived as a long-term risk and can offer new opportunities. For this reason, it merits appropriate consideration in the DCF formula.

Our view is that thematic research underpins very promising quantitative ESG research. Goldman Sachs' research integrates ESG factors into industrial analysis and valuation per sector, and identifies investment opportunities across emerging ESG issues. Their research has discovered a strong link between the management's ability to address ESG issues and its ability to steer the company towards sustained growth and profitability and, accordingly, enhanced stock valuation.

In summary, there is already explicit evidence and acknowledgment of the materiality of ESG factors and its influence in driving business strategy. Addressing ESG factors appears to be currently centred on improving risk management, mainly for large caps. The opportunity side is largely viewed through a thematic lens, mainly for small and mid caps, with a primary focus on environmental aspects, or the E. Meanwhile, it seems that the S and the G are labelled under compliance check. This is why there is a vital need for research that aggregates ESG, and links it with compliance, risk and opportunity. We believe that there will be increasing demand for this type of research which, in turn, will facilitate the integration of ESG factors into investment analysis and decision-making.

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Linking academic and broker findings

We have come a long way in terms of beginning to build wider valuation metrics into investment decisions, with collaborative initiatives such as the Principles for Responsible Investment (PRI) and the Enhanced Analytics Initiative (EAI) assisting in this process. Indeed, this report highlighted a number of different approaches that have emerged among the brokerage firms in taking wider factors into account, including top-down thematic strategies, sector 'best-in-class' analysis and bottom-up management of risk/return. The academic research is also expanding in terms of the breadth and depth of approaches used to measure the portfolio effect of ESG factors, with the majority of studies finding a positive to neutral association.

Looking forward, we expect to see continued innovation among practitioners and research by academics on the materiality of ESG factors to support further progress. In terms of brokerage firm research, collaborative efforts among asset owners and asset managers via the EAI, for example, will continue to be key drivers for encouraging further research on the integration of ESG factors into research reports and buy/sell recommendations. We note that most of the brokerage firm research reviewed in this report tends to translate the ESG factors into a qualitative variable for consideration at the macro and micro level, such as a proxy for good management, environmental management systems and positioning with respect to governance and climate change risks. In contrast, the systematic translation of ESG factors into quantitative inputs and financial ratios used in investment appraisals is less developed.

On the academic side, more research is needed to examine the link between the different approaches towards integrating ESG into investment decisions (beyond screening) and portfolio performance, including the effect of engagement and integration into stock selection. In addition to further research, the academic community could also consider widening the core teachings and textbooks used for finance and investment degree programs such that the investment managers of the future are well-equipped to respond to this challenge.

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Appendix

California Public Employees Retirement System (CalPERS)

CalPERS was established by state law in 1932. It is the largest public pension plan in the US and the third largest in the world in terms of asset under management. The pension plan provides a variety of retirement and health benefits programmes and services to the State of California's public employees, retirees, and their families. CalPERS is a defined benefit retirement plan.

For more information: www.calpers.ca.gov

Calvert Social Index™

The Calvert Social Index™ is a broad-based, rigorously constructed benchmark for measuring the performance of large, US-based socially responsible companies.

For more information: www.calvert.com

Citizens Index

The Citizens Index, created and maintained by Citizens Advisers, is comprised of approximately 300 companies selected to represent what it believes are the best large-cap companies across a broad range of industries – in terms of business fundamentals and corporate citizenship. By allocating weight in the index according to the size of a company, the Citizens Index automatically focuses on companies that are growing and deemphasizes those that are lagging.

For more information: www.efund.com

Council of Institutional Investors (CII)

The Council of Institutional Investors is the premier U.S. shareowner-rights organisation. It is a not-for-profit association of 130 public, labor, and corporate pension funds with assets exceeding US\$ 3 trillion. The Council works to educate members and the public about corporate governance, and to advocate for strong governance standards on issues ranging from executive compensation to the election of corporate directors.

Member funds are major long-term shareowners with a duty to protect the retirement assets of millions of American workers. CII believes that by pooling their resources, institutional investors can and should use their proxy power to hold the companies in which they invest accountable. Since it was founded in 1985, the Council has encouraged member funds to use their proxy votes, shareowner resolutions, pressure on regulators, discussions with companies and, when necessary, litigation to protect plan assets.

For more information: www.cii.org

Domini Social Equity Fund®

The Domini Social Equity Fund® is Domini's flagship mutual fund which was launched in 1991. The Fund offers core stock market exposure through a portfolio of primarily large-cap domestic stocks subject to a set of social and environmental standards.

For more information: www.domini.com

Domini 400 SocialSM Index

KLD's Domini 400 SocialSM Index (DS400) is a float-adjusted market capitalisation weighted common stock index modelled on the S&P 500® Index. The DS400 is the first benchmark for equity portfolios subject to multiple social screens. It is a widely recognised benchmark for measuring the impact of social screening on financial returns and the performance of socially screened portfolios.

For more information: www.kld.com

Dow Jones Sustainability Index

Launched in 1999, the Dow Jones Sustainability Indexes track the financial performance of the leading sustainability-driven companies worldwide. Based on the cooperation of Dow Jones Indexes, STOXX Limited and SAM Group the indexes provide asset managers with reliable and objective benchmarks to manage sustainability portfolios. The DJSI family currently comprises global, European, Eurozone, North American and US benchmarks.

For more information: www.sustainability-indexes.com

Enhanced Analytics Initiative (EAI)

The EAI is an international collaboration between asset owners and asset managers aimed at encouraging better investment research, in particular research that take account of the impact of extra-financial issues on long-term investment. The Initiative currently represents total assets under management of c. €1.8 trillion (c. US\$2.4 trillion).

The EAI seeks to address the absence of quality, long-term research which considers material extra-financial issues. The Initiative incentivises research providers to compile better and more detailed analysis of extra financial issues within mainstream research. Its impact depends on offering credible market incentives to interested and appropriate research agencies to encourage them to adapt their research process and to become more innovative.

For more information: www.enhancedanalytics.com

Ethical Investment Research Services (EIRIS)

EIRIS is a leading global provider of independent research into the social, environmental and ethical performance of companies. It is a UK based organisation with an office in the USA and a representative office in Japan, and its international research partners together have a wealth of experience in the field of socially responsible investment (SRI) research. EIRIS provides comprehensive research of more than 2,800 companies in Europe, North America and Asia Pacific. EIRIS has over 70 institutional clients including pension and retail fund managers, banks, private client brokers, charities and religious institutions across Europe, the USA and Asia.

A not-for-profit organisation, EIRIS does not investigate companies' financial status but looks at their social, environmental and ethical policies and practices.

For more information: www.eiris.org

European Centre for Corporate Engagement (ECCE)

ECCE is a 'lab for sustainable investment'; a multidisciplinary research network founded by researchers with established track records in the academic domain and in practice. It is an internationally oriented research consortium devoted to delivering top-ranked research in the fields of corporate engagement and sustainable finance.

ECCE helps practitioners and scholars understand how business and financial markets can promote sustainable development by considering environmental, social and corporate governance (ESG) issues.

For more information: www.corporate-engagement.com

FTSE All-Share Index

The FTSE All-Share is a market capitalisation weighted index representing the performance of all eligible companies listed on the London Stock Exchange's main market, which pass screening for size and liquidity. Today the FTSE All-Share Index covers 683 companies with a combined value of nearly £1.82 trillion (as at 31 August 2007) – approximately 98% of the UK's market capitalisation.

The FTSE All-Share Index is considered to be the best performance measure of the overall London equity market with the vast majority of UK-focused money invested in funds which track it. The FTSE All-Share Index also accounts for 11.11% of the world's equity market capitalisation (based on the FTSE All-World Index as of 31 August 2007).

For more information: www.ftse.com

FTSE4Good Index Series

Launched in 2001, the FTSE4Good Index Series is a series of benchmark and tradable indices for socially responsible investors. The index series is derived from the globally recognised FTSE Global Equity Index Series, offering FTSE's world-famous hallmark of cutting-edge index design and calculation technology.

For more information: www.ftse.com

Mistra

Mistra is a Swedish foundation which supports research aimed at solving strategic environmental problems. Mistra distributes about SEK 200 million a year to environmental research. Currently, Mistra funds about 20 major programmes, each of which should have a time span of between six and eight years.

For more information: www.mistra.org

Moskowitz Prize for Socially Responsible Investing

The annual Moskowitz Prize is the only global award recognising outstanding quantitative research in the field of socially responsible investing (SRI). The prize was launched in 1996 by the Social Investment Forum – the national trade association for the socially and environmentally responsible investing (SRI) industry – to recognise the best quantitative SRI study.

The Moskowitz Prize is named for Milton Moskowitz, one of the first investigators to publish comparisons of the financial performance of screened and unscreened portfolios. His distinguished works include "The 100 Best Companies to Work for in America", an annual list published in *Fortune* magazine, and "The Global Marketplace: 102 of the Most Influential Companies Outside America".

For more information:

www.haas.berkeley.edu/responsiblebusiness/MoskowitzResearchProgram

Principles for Responsible Investment

The Principles for Responsible Investment (PRI) were developed by an international group of institutional investors supported by a multi-stakeholder group of experts from the investment industry, intergovernmental and governmental organisations, civil society and academia. The process was convened by the United Nations Secretary-General and coordinated by the United Nations Environment Programme Finance Initiative (UNEP FI) and the UN Global Compact.

The PRI reflects the core values of the group of large investors whose investment horizon is generally long, and whose portfolios are often highly diversified. However, the Principles are open to all institutional investors, investment managers and professional service partners to

support.

PRI signatories believe that environmental, social, and corporate governance issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes, and through time). They also recognise that applying the Principles may better align investors with broader objectives of society.

For more information: www.unpri.org

S&P 500 Index

Widely regarded as the best single gauge of the U.S. equities market, this world-renowned index includes 500 leading companies in leading industries of the U.S. economy. S&P 500 is a core component of the U.S. indices that could be used as building blocks for portfolio construction. It is also the U.S. component of S&P Global 1200.

For more information: <http://www2.standardandpoors.com>

Studies of Socially Responsible Investing

This a resource for investment professionals, academics, and other people interested in the quantitative aspects of socially responsible investing (SRI). This site is a project of the Moskowitz Research Program, which is affiliated with the Center for Responsible Business at the Haas School of Business, University of California, Berkeley.

For more information: www.sristudies.org

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The language of responsible investment

This section of the report is a reproduction of “The language of responsible investment – An industry guide to key terms and organisations” published in 2007 by Mercer’s Investment Consulting business.

Responsible investment

The evolution of socially responsible investment (SRI) and responsible investment (RI) has recently been characterised by greater incorporation of environmental, social, and corporate governance (ESG) factors within traditional investment decision-making processes. This has been driven by growing recognition among investors that responsible corporate behaviour with respect to ESG issues can have a positive influence on the financial performance of companies – particularly over the long term. This is an important shift in acceptance of ESG considerations from “ethical” or “socially responsible” investors to mainstream investors.

As with many industries, the complex world of responsible investment seems to have its own language. Although specialists within the field are encouraged to use clear language rather than technical terms, jargon has unavoidably developed. To help you better understand and interpret the term you may encounter, we have compiled this glossary. Some terms may have meanings beyond the responsible investment world, but we do not discuss those meanings here. This glossary is intended to supplement rather than replace similar resources that cover existing investment concepts.

Active ownership

The voting of company shares and/or the engaging of corporate managers and boards of directors in dialogue on environmental, social and corporate governance issues as well as on business strategy issues. This is increasingly pursued in an effort to reduce risk and enhance long-term shareholder value. See also *Collaborative engagement* and *Shareholder engagement*.

Avoidance

See *Negative screening*.

Best-in-class

The focusing of investments in 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.

Cleantech

A range of products, services and processes that either directly reduce or eliminate ecological impacts or have the potential to provide performance at least matching that of traditional alternatives whilst requiring lower resource inputs, or a different mix of inputs. Cleantech is an investment theme rather than an industrial sector as it may include investments in agriculture, energy, manufacturing, materials, technology, transportation, and water. In 2005, Cleantech was North America’s 5th largest venture capital investment category, attracting more than US\$ 1.6 billion.

Climate change

A change of climate which is attributed to natural or anthropogenic activity that alters the

composition of the global atmosphere and changes weather patterns on a global scale. There is compelling evidence that that increasing concentration of greenhouse gases in the atmosphere are attributable to human activity and are increasing the greenhouse effect and causing climate change.

Climate risks

The risks stemming from climate change that have the potential to affect companies, industries, and whole economies. There are five key areas of business risk associated with climate change: regulatory, physical, litigation, competitiveness and reputational.

Collaborative engagement

The engagement activities conducted collaboratively by multiple parties (for example, pension funds or fund managers) in order to gain leverage and minimise costs and risks. Collaborative engagement forms a subset of collaborative initiatives. See also *Active ownership* and *Shareholder engagement*.

Collaborative initiatives

The initiatives conducted collaboratively by multiple parties (for example, pension funds and/or fund managers) in order to gain leverage and minimise costs and risks. The Principles for Responsible Investment, the Carbon Disclosure Project, and the national and regional social investment organisations are examples of collaborative initiatives.

Community investment

The capital from investors that is directed to communities underserved by traditional financial services. It provides access to credit, equity, capital and basic banking products that communities would otherwise not have.

Corporate citizenship

See *Corporate social responsibility*.

Corporate governance

The procedures and processes according to which an organisation (in this context, mainly a company) is directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organisation – such as the board, managers, shareholders, and other stakeholders – lay down the rules and procedures for decision making. There are both national and international best practice standards.

Corporate social responsibility (CSR)

The 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. Often the policies and procedures encompass a wide range of practices related to all levels of business activity, including corporate governance, employee relations, supply chain relationships, customer relationships, environmental management, philanthropy, and community involvement. Investors in companies, including institutional investors like pension funds, can use their leverage (through responsible investment) to encourage companies to adopt CSR practices. CSR practices have been linked to improved financial performance.

Divestment

The selling and disposing of shares or other assets. Changes in corporate behaviour or investment policies can lead investors to reduce or eliminate investments. Investors who practice active ownership often view divestment as the last resort. Divestment gained prominence during the boycott of companies doing business in South Africa, prior to the dismantling of apartheid. More recently, a campaign has begun to encourage divestment from companies doing business in Sudan.

Eco-efficiency

The ratio between goods produced or services rendered and the resources consumed or waste produced.

Economically targeted investment

An investment that aims to achieve a market rate of return while improving social conditions through, for example, investments that provide public housing or employment opportunities.

Emerging managers

See *MFOE*.

Engagement

See *Shareholder engagement*.

Engagement overlay service

A third party service that engages investee companies on behalf of shareholder clients. Currently offered by a small number of investment fund managers and independent service providers.

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 behaviour. No definitive list of ESG issues exists, but they typically display one or more of the following characteristics:

- Issues that have traditionally been considered non-financial or not material
- A medium or long-term time horizon
- Qualitative objects that are not readily quantifiable in monetary terms
- Externalities (costs borne by other firms or by society at large) not well captured by market mechanisms
- A changing regulatory or policy framework
- Patterns arising throughout a company's supply chain (and therefore susceptible to unknown risks)
- A public-concern focus

ESG integration

The active investment management processes that include an analysis of environmental, social, and corporate governance risks and opportunities.

ESG research provider

A firm that provides environmental, social, corporate governance or ethical research for use in investment decisions or shareholder engagement activities. Traditional sell-side researchers are increasingly offering environmental, social and corporate governance research.

Ethical investing

The 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 screening.

Extra-financial factors

The factors that have the potential to have at least a long-term effect on financial performance but lie outside the usual span of variables that get integrated into investment decisions, irrespective of whether they are part of the research process. They include ESG factors but also traditional financial factors that are often ignored or under-utilised, at least in terms of the alignment of investments with the interests of beneficiaries.

Fiduciary duties

The duties imposed upon a person who exercises some discretionary power in the interests of another person in circumstances that give rise to a relationship of trust and confidence. Fiduciary duties are the key source of limits on the discretion of investment decision makers in common law jurisdictions. The most important fiduciary duties are the duty to act prudently and the duty to act in accordance with the purpose for which investment powers are granted (also known as the duty of loyalty). See also *Prudent man rule*.

Greenhouse gases

The gases that contribute to the greenhouse effect and global warming. The gases are released into the atmosphere through the combustion of organic matter (including fossil fuels) and through natural processes. The Kyoto Protocol deals with the following greenhouse gases: carbon dioxide, nitrous oxide, methane, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons. Focus of collaborative engagement initiatives such as the Carbon Disclosure Project.

Green investing

An investment philosophy that includes criteria relating to the environmental impact of the underlying investment.

Minority and female owned and/or emerging manager (MFOE)

Investment managers owned by minorities or females or have a relatively small amount of assets under management. The definition of “minority” managers can vary but commonly includes those firms majority owned by African American, Native American, Asian American, and Hispanic groups. In some cases, disabled and veteran owners also meet the definition for inclusion under an investor’s policy in this area. The definition of “emerging” also varies but generally connotes a manager with between zero and several hundred millions in asset management or that has a performance record of less than three years. A firm can be minority or female owned without being considered emerging, or vice versa. These managers would not ordinarily be included in a manager search and would benefit from an affirmative action program.

Mission-based investing

The incorporation of an organisation’s mission within its investment decision-making process.

Negative screening

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. Common negative screens exclude investments in tobacco, alcohol, and weapons manufacturers. Other negative screens aim to exclude companies that are considered poor executors in the areas of environmental and social management or corporate governance.

Portfolio tilt

The adoption of a particular view on a sector or issue by overweighting or underweighting the portfolio relative to the benchmark.

Positive screening

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. The criteria could include environmental, social, corporate governance or ethical issues. Common positive screens include measures of energy efficiency, environmental management or employment standards. Increasingly, these factors are deemed desirable attributes for both financial and non-financial measures. In this case, see also *ESG integration*.

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 policy

The written policy which articulates how proxy voting decisions are to be made and executed. Proxy voting policies can include specific guidance on environmental, social, corporate governance and ethical voting decisions.

Proxy voting advisory service provider

A third party who provides background information and advice in relation to proxy issues.

Prudent man rule

A common rule pertaining to fiduciary duty in Anglo-Saxon countries. The OECD states the rule in terms of the following broad principle: "A fiduciary should discharge his or her duties with the care, skill, prudence and diligence that a prudent person acting in a like capacity would use in the conduct of an enterprise of like character and aims." Applications vary by country. In the United States, The Employee Retirement Income Security Act of 1974 (ERISA) outlines minimum standards for private pension plans that have since been adopted by many public pension plans. See also *Fiduciary duties*.

Responsible investment (RI)

The integration of environmental, social and corporate governance (ESG) considerations into investment management processes and ownership practices in the belief that these factors can have an impact on financial performance. Responsible investment can be practiced across all asset classes.

Responsible investment policy statement

A general (usually public) statement on responsible investment adopted by boards of trustees or directors that directs investment staff practices and decisions. This can be included within a broader investment policy statement and/or developed as standalone RI policy statement.

Responsible property investment

A property investment approach that includes the consideration of environmental, social and corporate governance issues. Energy and resource efficiency, both in construction and ongoing operations is a common consideration, as is social impact.

Restricted list

A list of securities that are not to be included in a portfolio by an investment manager. Typically facilitates implementation of negative screening.

Screening

An investment approach that employs certain criteria (for example, environmental, social, corporate governance or ethical considerations) in investment decision-making and portfolio construction. Only investments that meet certain criteria are included in investment portfolios. See also *Negative screening* and *Positive screening*.

SEE (social, ethical and environmental)

The acronym that emerged in Europe to describe the social, ethical, and environmental issues that responsible investors are considering in the context of corporate behaviour. No definitive

list of SEE issues exists, but there is significant overlap with ESG issues.

Shareholder

An investor who holds preferred or common shares of a corporation.

Shareholder activism

A public or confrontational approach to shareholder engagement. In addition to shareholder engagement, pressure can be exerted on companies through strategic divestment or attempts to influence public opinion. See also *Active ownership*.

Shareholder engagement

The practice of monitoring corporate behaviour 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 performance on environmental, social and corporate governance issues.

Shareholder proposal

A shareholder request that the company or its board of directors take particular action. Proposed by the shareholder, this request may be presented at a company's general shareholders' meeting and voted on by all shareholders. In some instances, shareholder proposals are withdrawn by shareholders or disallowed by regulators.

Shareholder resolution

See also *Shareholder proposal*.

“Short-termism”

The bias some investors demonstrate for near or immediate-term investment performance and share price appreciation instead of long-term investment performance. This bias may put pressure on corporate managers to make decisions that boost short-term accounting measures of profitability rather than long-term economic profitability.

“Sin stock”

The stock of a company that provides goods or services that the investor has deemed unethical. Common examples include the stock of companies that are involved in the production or provision of tobacco, alcohol, pornography or gaming facilities.

Social investment policy statement

A general statement on social investment adopted by a board of trustees. See also *Responsible investment policy statement*.

Socially responsible investment (SRI)

An investment process that seeks to achieve social and environmental objectives alongside financial objectives.

Stakeholders

The individuals or organisations with an interest in the actions and impacts of an organisation. They may be customers, suppliers, shareholders, employees, communities, members of special interest groups, non-governmental organisations, or regulators.

Sustainability

See *Sustainable development*.

Sustainability report

A report produced by an organisation to inform stakeholders about its policies, programs and performance regarding environmental, social and economic issues. Sustainability reports, also known as corporate citizenship reports or CSR reports, are usually voluntary and relatively few are independently audited or integrated into financial reports. Numerous corporations are now employing sustainability reports to expand public disclosure beyond financial metrics. The

Global Reporting Initiative provides a framework for sustainability reporting.

Sustainable development

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.

Thematic investment

The selected investment in companies with a commitment to chosen responsible business products and/or services, such as environmental technologies. See also *Cleantech* and *Community investment*.

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. See also *Sustainability report*.

Universal owner

A large investor who holds a broad selection of investments in different public companies as well as other assets and who therefore is tied to the performance of markets or economies as a whole – not just to the performance of individual holdings. These investors have a vested interest in the long-term health of the economy, making public policy issues and cross-market ESG concerns particularly relevant.

Acronyms

CSR	Corporate social responsibility
ESG	Environmental, social and corporate governance
ETI	Economically targeted investing
NGO	Non-governmental organisation
RI	Responsible investment
SEE	Social, environmental and ethical
SRI	Socially responsible investment

Codes, conventions, initiatives and relevant organisations

Since the 1990s, voluntary codes and conventions have become an increasingly important mechanism for promoting shared social, environmental and economic aims. They have proved an effective tool for achieving change, often providing a more acceptable and timely alternative to regulation. A wide number of stakeholders (such as investors, companies, and non-profit organisations) have chosen to participate in the design and implementation of such codes, thus reinforcing their value.

These initiatives sometimes have a specific aim, such as disclosure of information. Networks on wider investment concerns or issue have also emerged. Together, they now represent an important mechanism for enabling investors to join together to promote corporate change where this is seen to enhance or protect shareholder value. This collaborative approach is a resource-efficient way to gain information (about an issue, company or sector), to support investment decision-making, and to deliver a consistent message to corporations on various issues.

Below is a list of ESG-related codes, conventions, initiatives and relevant organisations which may be of interest to investors.

Asia-Pacific

Asian Corporate Governance Association (ACGA)	www.acga-asia.org
Association for Sustainable & Responsible Investment in Asia (AsrIA)	www.asria.org
Ethical Investment Association (EIA) (Australia/New Zealand)	www.eia.org.au
Investor Group for Climate Change Australia/New Zealand (IGCC)	www.igcc.org.au
Social Investment Forum Japan (SIF-Japan)	www.sifjapan.org

Canada

Canadian Coalition for Good Governance (CCGG)	www.ccg.ca
Canadian Social Investment Organisation (SIO)	www.socialinvestment.ca
Shareholder Association for Research and Education (SHARE)	www.share.ca

Europe

Belgian Sustainable and Socially Responsible Investment Forum (BELSIF)	www.belsif.be
European Corporate Governance Institute	www.ecgi.org
European Social Investment Forum (Eurosif)	www.eurosif.org
Forum Nachhaltige Geldanlagen (FNG) (Germany)	www.forum-ng.de
Forum per la Finanza Sostenibile (Italy)	www.finanzasostenibile.it
French Social Investment Forum (French SIF)	www.frenchsif.org
Institutional Investors Group on Climate Change (IIGCC)	www.iigcc.org
Marathon Club	www.marathonclub.co.uk
Sveriges Forum för Hållbara Investeringar (SWESIF) (Sweden)	www.swesif.org
UK Social Investment Forum	www.uksif.org
Vereniging van Beleggers voor duurzame Ontwikkeling (VBDO) (Netherlands)	www.vbdo.nl

Global

Carbon Disclosure Project (CDP)	www.cdproject.net
Enhanced Analytics Initiative (EAI)	www.enhancedanalytics.com
Extractive Industries Transparency Initiative (EITI)	www.eitransparency.org
Global Reporting Initiative (GRI)	www.globalreporting.org
International Corporate Governance Network (ICGN)	www.icgn.org
International Labour Organization Standards (ILO)	www.ilo.org
OECD Principles of Corporate Governance	www.oecd.org
OECD Guidelines for Multinational Enterprises (MNEs)	www.oecd.org

Principles for Responsible Investment (PRI)
Social Investment Research Analyst Network (SIRAN)
Sullivan Principles
UN Environment Programme Finance Initiative (UNEP FI)
UN Global Compact

www.unpri.org
www.siran.org
www.globalsullivanprinciples.org
www.unepfi.org
www.unglobalcompact.org

U.S.

Ceres
Council of Institutional Investors (CII)
Interfaith Center on Corporate Responsibility (ICCR)
Investor Network on Climate Risk (INCR)
Investor Network on Environmental Health
Social Investment Forum (SIF)

www.ceres.org
www.cii.org
www.iccr.org
www.incr.com
www.investorenvironmentalhealthnetwork.org
www.socialinvest.org

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Glossary

Active management

Approach to investment management which aims to outperform a particular market index or benchmark through asset allocation and/or stock selection decisions. See also *Passive management*.

Activism

Intervention by shareholders using their ownership rights to influence the actions of corporate management with a view to enhancing the value of the company.

Agency broker

Brokers/dealers who act as agents between market makers and investors.

Alpha

Statistical measure of the incremental return added by an investment manager through active management.

Alternative investments

Investments that do not fit into the mainstream areas of equities, bonds and property and which would normally only form a small proportion of pension plan portfolios. Examples include private equity/venture capital, hedge funds and commodities.

Analyst

See *Investment analyst*.

Asset allocation

Distribution of investments across categories of assets such as cash, equities and bonds. Asset allocation affects both risk and return and is a central concept in financial planning and investment management.

Asset manager

Firm or individual who manages (i.e., buys and sells) a portfolio of assets.

Basis point

1/100 of 1 percent, or 0.01 percent, thus 100bp = 1 percent.

Benchmark

Measure against which a portfolio's performance is assessed. The benchmark may take the form of a market index for portfolios focusing on a particular market (e.g., MSCI World Equity Index) or be a peer group average or median.

Beta

Statistical measure of risk or volatility. Indicates the sensitivity of a security or portfolio to movements in the market index. Securities/portfolios with a beta greater than one are expected to be more volatile than the market as a whole, outperforming in rising markets and underperforming in falling ones.

Book-to-market ratio*

A ratio used to find the value of a company by comparing the book value of a firm to its market value. Book value is calculated by looking at the firm's historical cost, or accounting value. Market value is determined in the stock market through its market capitalisation.

Bottom-up

Approach to active investment management that gives priority to the identification and selection of companies (with less emphasis accorded to sector and geographic region) to build up an investment portfolio. This is the opposite of a top-down approach. See also *Stock selection* and *Top-down*.

Broker/Dealer

Individual or firm that acts as an intermediary between buyers and sellers usually for payment of a commission. It may also buy securities to sell for a profit while fulfilling its role as a dealer.

Buy and hold strategy

An investment strategy in which stocks are bought and then held for a long period of time regardless of short-term market movements.

Capital asset pricing model (CAPM)

Economic model for valuing assets. The simplest version states that the expected excess return of a security over a risk-free asset will be exactly in proportion to its beta.

Cash return on capital invested (CROCI)*

A method of valuation that compares a company's cash return to its equity. Developed by the Deutsche Bank's global valuation group, CROCI provides analysts with a cash flow based metric for evaluating the earnings of a company. Also known as "cash return on cash invested".

Debt-adjusted cash flow (DACF)**

Represents the operating cash flow excluding financial expenses after taxes.

Discounted cash flow (DCF)

Process by which future cash flows (e.g., dividends or interest payments) are adjusted to allow for the time value of money to arrive at a value in today's terms.

Diversification

Risk management technique which involves spreading investments across a range of different investment opportunities, thus helping to reduce overall risk. The risk reduction arises from the different investments not being perfectly correlated. Diversification reduces both the upside and downside potential and allows for more consistent performance under a wide range of economic conditions.

Dividend yield

Company's dividend per share divided by its current share price.

Earnings per share (EPS)

Company's annual earnings divided by the number of shares in issue. "Fully diluted" earnings per share takes account of the total number of shares allowing for any convertible securities.

EBITDA

Earnings before deduction of interest, taxes, depreciation and amortisation (an accounting term).

Enterprise value (EV)*

A measure of a company's value, often used as an alternative to straightforward market capitalisation. EV is calculated as market cap plus debt, minority interest and preferred shares, minus total cash and cash equivalents.

Euroland/Eurozone

The group of countries which use the Euro as their common currency.

Excess return

Return of a security or portfolio in excess of its benchmark.

Free cash flow (FCF)*

A measure of financial performance calculated as operating cash flow minus capital expenditures. In other words, free cash flow represents the cash that a company is able to generate after laying out the money required to maintain or expand its asset base.

Fund manager

Usually a member of an investment management team who is responsible for ensuring that client portfolios are invested in accordance with agreed mandates and are kept in line with the asset mix specified by the investment team. The fund manager may also be responsible for client reporting and relationship management. See also *Investment manager*.

Gross cash invested (GCI)**

Gross tangible and intangible assets before depreciation or write-offs plus investments in associates and working capital.

Growth fund

A fund that has the aim of achieving capital appreciation, typically an equity portfolio that has the aim of achieving capital appreciation by investing in growth stocks.

Growth stock

Stock that is expected to achieve above average earnings growth. Growth stocks normally have a high P/E ratio relative to the market as a whole as investors anticipate that earnings will increase in the future.

Hedge fund

A fund that seeks to generate investment returns by using non-traditional investment strategies, utilising mechanisms such as short selling, leverage, programme trading, arbitrage, and tools such as options, futures, swaps, and forwards (derivatives in general).

Index

- a. Measure updated regularly that gives a representation of the movement in value of a particular market or a specified group of securities.
- b. List of prices or other characteristics representing a particular group of goods or services which gives an indication of movements over time (e.g., the retail price index, the average earnings index and the retail sales index).
- c. To invest in line with the index weightings.

Index-tracking fund (or Index fund)

Investment fund which aims to match the returns on a particular market index. The fund may hold all the stocks in the particular index or, more commonly, use a mathematical model to select a sample that will perform as closely as possible to the index.

Investment analyst

Individual who specialises in the analysis of companies and their performance. An analyst normally gathers information by studying the information contained in company annual reports, researching the product markets in which a particular company operates, visiting manufacturing sites, and meeting with key company personnel. Analysts may also analyse markets and economies.

Investment manager

Organisation that invests assets on behalf of third parties for a fee. Can also refer to the individual responsible for day-to-day management of the assets, although this individual is more often referred to as a fund manager or portfolio manager.

Investment performance

Total return earned on a portfolio of assets over a particular period.

Jensen's alpha* (or Jensen's measure)

A risk-adjusted performance measure that represents the average return on a portfolio over and above that predicted by the capital asset pricing model, given the portfolio's beta and the average market return. This is the portfolio's alpha.

Large cap stock

Stock with a market capitalisation of among the largest within a market (e.g., the capitalisation of one of the top 100 companies in the UK as represented by the FTSE 100 Index; in the US, it is defined as a stock with a market capitalisation of over US\$ 5 billion). See also *Small cap stock* and *Mid cap stock*.

Long position

State of actually owning a security, contract or commodity. See also *Short position*.

Managed fund

Pooled fund that invests across a wide range of asset classes.

Market capitalisation

Total market value of securities issued by a company, industry, sector or market(s). It is calculated by multiplying the market price per share by the number of shares issued.

Mid cap stock

Stock with a middle-ranking market capitalisation within a market (e.g., in the UK a mid-cap stock is normally considered to be one placed in the FTSE Mid 250 Index; in the US, it is defined as a stock with a market capitalisation of between US\$ 1 billion and US\$ 5 billion). See also *Small cap stock* and *Large cap stock*.

Modern portfolio theory

Theory of portfolio optimisation that seeks to construct an optimal portfolio by considering the relationship between risk and return.

Momentum

Extent to which stock market values are supported by a strong level of trading activity and investor interest. Also refers to an investment style of purchasing stocks that have recently exhibited strong price growth.

Mutual fund

US name for an open-ended pooled fund operated by an investment manager.

Outperformance

Used to refer to the performance of a portfolio relative to its benchmark – a portfolio is said to outperform if its return is greater than that of its benchmark. Underperformance is defined similarly.

Overweight

Exposure to a specific asset (or asset class) which is higher than the proportion it represents in the market index or benchmark against which the portfolio is measured. Investment managers may take

overweight positions in shares or sectors they expect to outperform in order to add value to the portfolio. See also *Underweight*.

Passive management

Portfolio which aims to replicate a particular market index or benchmark fund and does not attempt to actively manage the portfolio. See also *Active management*.

Portfolio

Block of assets generally managed under the same mandate.

Portfolio manager

See *Fund manager*.

Price earnings ratio (P/E ratio)

Commonly used indicator of the value of a stock calculated as a company's current share price divided by its earnings per share. A high P/E ratio may be justified because a company is expected to increase its earnings per share or it may indicate simply that the company is expensive.

Qualitative analysis

Assessing the value of an investment by examining mainly non-numeric characteristics such as management, people, process, etc.

Quantitative (Quant) analysis

Use of mathematical and statistical techniques to make investment decisions.

Rebalancing

Making adjustments to a portfolio to counteract the fact that different assets have performed differently over a period, and thus comprise different percentages of the portfolio than originally intended.

Regression*

A statistical measure that attempts to determine the strength of the relationship between one dependent variable (usually denoted by Y) and a series of other changing variables (known as independent variables).

Return

Increase in value of an investment over a period of time, expressed as a percentage of the value of the investment at the start of the period.

Return on assets (ROA)*

An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage.

Return on capital employed (ROCE)*

A ratio that indicates the efficiency and profitability of a company's capital investments.

Return on equity (ROE)

Company earnings divided by shareholder's funds.

Risk adjusted return

Any measure of the return earned by an investment that is adjusted to take into account the level of risk taken to achieve it.

Risk/Return trade off

Amount of expected return that must be sacrificed in order to reduce risk.

Sharpe ratio

Statistical measure of reward per unit of risk. It is calculated as the excess return over the risk-free return divided by the standard deviation of the excess returns. (Developed by William F. Sharpe).

Short position

Whereby an investor sells a stock that the investor does not own. The investor is expecting the stock value to fall thereby making a profit when the position is closed at the lower price. See also *Long position*.

Small cap stock

Stock with a market capitalisation of among the smallest within a market, although the definition of what is small is to some extent arbitrary (e.g., in the UK, it is usually defined as a stock with a capitalisation below that of the top 350 companies in the UK as represented by the FTSE Small Cap Index). See also *Large cap stock* and *Mid cap stock*.

Stock selection

Selection by investment managers of a portfolio of stocks in a particular market or sector, usually based on technical or fundamental analysis and usually with the aim of achieving a return superior to the overall market or sector or benchmark thereof.

Style

Approach followed by an active investment manager in selecting stocks. See also *Growth investor/manager* and *Value investor/manager*.

Tilt

Adoption of a particular view on a sector by overweighting or underweighting that sector relative to the portfolio benchmark (e.g., a portfolio which overweight resource shares and underweight industrials would be described as having a tilt towards resources and away from industrials).

Tobin's Q ratio*

A ratio devised by James Tobin of Yale University, Nobel laureate in economics, who hypothesised 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.

Top-down

Approach to investment analysis which starts from macro-economic factors (GDP growth, interest rates, inflation, etc.) and business cycle analysis to identify a portfolio distribution across asset classes, then a country/currency mix, a sector distribution, and ultimately a stock selection. It is the converse of the bottom-up approach. See also *Bottom-up*.

Tracking error

Measure of the variability of investment returns relative to a benchmark or index. It is usually expressed as the annualised standard deviation of relative returns. Can be expressed as either ex-post, which is simply the historical tracking error, or ex-ante, which is a forward-looking estimate of the future tracking error.

Underperformance

See *Outperformance*.

Underweight

Exposure to a specific asset (or asset class) which is lower than the proportion it represents in the benchmark against which the portfolio is measured. See also *Overweight*.

Universe

Term sometimes used to describe the total number of operators or competitors in a particular field, or the number of available stocks from which a portfolio is selected. Investment manager performance surveys are also referred to in this way.

Valuation

Process of determining the value of a portfolio of assets including any accrued income.

Value investment

Approach to investment which places emphasis on identifying shares which are believed to be underpriced (on the basis of indicators such as P/E ratio and dividend yield) by the market.

Volatility

The variability of the price of a security. Typically quantified as standard deviation.

Weighted average cost of capital (WACC)

Calculation of a firm's overall cost of capital that weights each source of finance proportionately (i.e., equity and debt).

Weighting

Proportion of an index or portfolio made up of an individual or group of items, usually expressed as a percentage (e.g., the percentage of a portfolio invested in a region or any one stock).

Source: Investment Dictionary, 2005 edition, Mercer's Investment Consulting business (unless otherwise indicated)

*See <http://investopedia.com>

**See [www.sgresearch.socgen.com/net/eqtypub.nsf/vxf/compliance/\\$file/Glossary.pdf](http://www.sgresearch.socgen.com/net/eqtypub.nsf/vxf/compliance/$file/Glossary.pdf)

***See <http://pages.stern.nyu.edu/~iag/workshops/2006-2007/workshop5.pdf>

UNEP Finance Initiative

The United Nations Environment Programme Finance Initiative (UNEP FI) is a strategic public-private partnership between UNEP and the global financial services sector. UNEP FI works with over 175 financial institutions that are signatories to the UNEP FI Statements, and a range of partner organisations, to develop and promote linkages between the environment, sustainability and financial performance. Through a comprehensive work programme, regional activities, training and research, UNEP FI carries out its mission to identify, promote and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

For more information: www.unepfi.org

E-mail: fi@unepfi.org

UNEP FI Asset Management Working Group

The UNEP FI Asset Management Working Group is a global platform of asset managers that collaborate to understand the ways that ESG factors can affect investment value, and the evolving techniques for their integration into investment decision-making and ownership practices.

Member institutions:

ABN AMRO Banco Real Brasil	Acuity Investment Management
BNP Paribas Asset Management	Calvert Group, Ltd.
ClearBridge Advisors	Eurizon Capital
Groupama Asset Management	Henderson Global Investors
Hermes Pensions Management	HSBC Investments
Mitsubishi UFJ Trust & Banking Corp.	Morley Fund Management
Pax World Management Corp.	RCM (UK)

For more information: www.unepfi.org/work_streams/investment/amwg

E-mail: investment@unepfi.org

Mercer's Investment Consulting business

Mercer is a leading global provider of investment consulting services, and offers customized guidance at every stage of the investment decision, risk management and investment monitoring process. We have been dedicated to meeting the needs of clients for more than 30 years, and we work with the fiduciaries of pension funds, foundations, endowments and other investors in some 35 countries.

We assist with every aspect of institutional investing (and retail portfolios in some geographies), from strategy, structure and implementation to ongoing portfolio management. We create value through our commitment to thought leadership; world-class, independent research; and top-notch consultants with local expertise.

In 2004, Mercer's investment consulting business formed a specialist global Responsible Investment (RI) business unit dedicated to developing intellectual capital in this field. In this unit we work with investment fiduciaries around the world to implement RI programs and offer a range of services - from policy development to manager selection and monitoring.

For more information: www.mercer.com/ri

The UNEP Finance Initiative and its Asset Management Working Group

The United Nations Environment Programme Finance Initiative (UNEP FI) is a strategic public-private partnership between UNEP and the global financial services sector. UNEP FI works with over 175 financial institutions that are signatories to the UNEP FI Statements, and a range of partner organisations, to develop and promote linkages between the environment, sustainability and financial performance. Through a comprehensive work programme, regional activities, training and research, UNEP FI carries out its mission to identify, promote and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

The UNEP FI Asset Management Working Group is a global platform of asset managers that collaborate to understand the ways environmental, social and governance factors can affect investment value, and the evolving techniques for their integration into investment analysis and decision-making.

Mercer's Investment Consulting business

Mercer is a leading global provider of investment consulting services, and offers customized guidance at every stage of the investment decision, risk management and investment monitoring process. We have been dedicated to meeting the needs of clients for more than 30 years, and we work with the fiduciaries of pension funds, foundations, endowments and other investors in some 35 countries.

We assist with every aspect of institutional investing (and retail portfolios in some geographies), from strategy, structure and implementation to ongoing portfolio management. We create value through our commitment to thought leadership; world-class, independent research; and top-notch consultants with local expertise.

In 2004, Mercer's investment consulting business formed a specialist global Responsible Investment (RI) business unit dedicated to developing intellectual capital in this field. In this unit we work with investment fiduciaries around the world to implement RI programs and offer a range of services – from policy development to manager selection and monitoring.