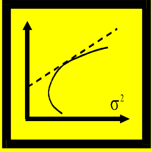

18 March 2002

Green with Envy

SRI investors face additional, more complex, risks than their conventional counterparts

We investigate the risks involved in Socially Responsible Investing. First, we look at the problem using our visual risk analysis toolkit – Risk Invaders! Second, we provide a detailed quantitative analysis including various thematic and style analyses.

- **Socially Responsible Investment (SRI) is gaining broad international recognition.** As the interest in SRI increases, many questions associated with the risks of investing ethically arise.
- **Pre - specified risk models do not form a useful base for managing SRI portfolios.**
- **Analysing socially responsible portfolios is a challenging objective.** It is not obvious whether socially responsible investing is more attractive in terms of the risk/return trade-off. Applying our integrated risk modelling approach, including thematic analysis, we look into the risk structure from different perspectives.
- **The visual approach to risk modelling is a powerful technique.** It enables us to recognise the risks the socially responsible investor faces. It gives us the required depth of analysis and the desired clarity.
- **SRI benchmarks carry relatively high levels of risk in comparison to actively managed institutional portfolios.** Indeed, the expected tracking error of a passive SRI benchmark fund is higher than many institutions would be comfortable with. Risk arising from active fund management would be additional.
- **Surprisingly, two-thirds of risk comes from styles and themes and only one-third from stock specific effects**. This implies that SRI portfolios will have a different long-term risk expectation – and hence return expectation – than conventional portfolios.
- **Excluded industries do not contribute much to the level of the risk.** The largest risks appear to be in Forestry & Paper, Steel & Other Metals and Autos.
- **SRI benchmarks have more exposure to P/E and P/CE than conventional benchmarks on a risk-adjusted basis.**

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Introduction

Socially Responsible Investment ("SRI") is becoming increasingly popular with ever increasing sums of money being allocated to this type of strategy. This is happening at a time when:

- accountability demands on portfolio managers for both risk and return management have never been higher; and
- conventional risk models often do not capture the particular themes and styles of SRI portfolios.

The main goal of this report is to highlight the flexibility and the integrity of our approach to risk modelling. Traditional pre - specified factor risk models have limited application to SRI portfolios, primarily because there are clearly other factors that need to be analysed that more accurately capture the "social" aspects of this type of investment.

The purpose of this report is to establish a methodology that can examine the differences between SRI funds and benchmarks and their standard counterparts with particular emphasis on

- portfolio construction;
- risk management; and
- risk budgeting.

This paper analyses socially responsible investing - our main objective is to determine whether it is (unnecessarily) riskier. We argue that by narrowing the universe of eligible stocks resulting from applying the SRI principles, we take more risks which otherwise could be avoided.

The report is structured in a way that could meet the requirements of all equity portfolio managers - the ones that are interested in the interpretation and visualisation of the results without going into the mathematical details, and also for more quantitative readers. The contents of the chapters can be summarised as follows:

- The section **Socially Responsible Investment** is descriptive and provides the necessary background to socially responsible investing. The historical review and the various characteristics that are discussed aim to familiarise the reader with this concept.
- **Visualisation**: In this chapter we apply the visualisation approach described in a recently published research paper[1].
- **An example of a risk analysis of an SRI portfolio**: Using the methodology described in Equity Portfolio Analysis[2] we analyse FTSE4Good Europe against FTSE Europe.
- A brief conclusion completes the report.

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[1] Let's play Risk Invaders! (9 January 2002), Commerzbank Securities.

[2] Equity Portfolio Analysis, (January 2002), Commerzbank Securities.

Socially Responsible Investment

Socially Responsible Investment (SRI) is becoming very popular. Social investors include individuals, businesses and non-profit organisations. Especially interested in this alternative are the pension funds, for which the incorporation of the social and environmental criteria into pension portfolio guidelines is increasingly becoming a regulatory requirement around Europe.

History

Socially responsible investing (also known as 'ethical investment') has deep roots. It dates back into ancient times when, in many societies, directives of how to be invested ethically were created. More recently, religious investors have refused to be involved in investing in enterprises that produced weapons, or were in the alcohol, tobacco or gambling industries.

Some aspects of the current view of SRI can be traced to other social and environmental movements in 1960s

Some aspects of the current view of SRI can be traced to other social and environmental movements in 1960s e.g. the civil and women rights movements, and the different environmental movements. Gradually the idea of SRI expanded to include management and labour issues and anti-nuclear issues. Inevitably, support services to help investment managers have also been established. For example, in 1983 the Ethical Investment Research Service (EIRIS) was established as a not-for-profit organisation to research into the social, environmental and ethical performance of companies.

From a very modest start – the first US ethical pooled investment vehicle was launched in 1973; in the UK the first unit trust arrived in 1984 funds under management have grown rapidly. Relevant indices have been established to reflect this demand. Launched in 1999, the Dow Jones Sustainability Indices were the world's first global indices tracking the financial performance of leading sustainability-driven companies world-wide. Then in February 2001, FTSE International announced the launch of a family of global equity indices, developed with the research of EIRIS, intended to capture the performance of socially responsible funds.

Recently, socially responsible investing has been gaining many supporters and advocates; it is believed to be the alternative that gives the possibility to everybody to influence the world by supporting the companies who aim at environmental, social as well as financial results. There are two justifications cited for SRI – one based on moral arguments whilst the other is driven by expected financial rewards.

- "*We have not inherited the world from our forefathers - we have borrowed it from our children*". Many investors are attracted by the opportunity to gain money and at the same time to make something good for the world we live in.

- "*It pays to be good*". Many investors believe that SRI offers an attractive alternative for investment; it offers higher return in the long-run and most of the investors are ready to face the higher risk.

How to put SRI into practice

There are three main ways in which investors can implement socially responsible investing.

- **Screening:** This is the practice of choosing stocks according to a given criteria among eligible stocks in a bigger universe. The criteria are usually social or environmental. Applying these screens, the universe of eligible stocks is reduced.

- **Shareholder advocacy**: This includes the actions of the owners, aimed at influencing the corporate decisions toward socially responsible behaviour. The

shareholders believe that this will lead not only to improved well being but also to better long-term financial results.

- **Community investing**: This is financing economically disadvantaged people, targeted at improving their living standard. Thanks to the community investors, local organisations can provide such people with housing and different services.

This report covers only the first way viz. Screening.

SRI portfolios - pros and cons

Many researchers have devoted their time and efforts to explore the socially responsible investments and to compare them with the traditional investment policies.

- **Pros**: Moskowitz, who was one of the first to analyse screened portfolios, argued that screened portfolios have an advantage over their counterparts, because the conventional market portfolios often do not incorporate information that is essential for the future performance.

- **Cons**: The traditional view on the subject states that if the markets were efficient, the market portfolio would be always able to outperform all its subsets. And the screened portfolios are a subset of the market portfolio, so this theory applies for them as well. That is why the idea of screening is not favoured by many academics.

Triple Bottom Line

The traditional investment view measures business performance only in financial terms. The successful company of the future, however, is one that is interested also in its social and environmental performance. Although these concepts are not easily quantified, they are gaining wide international acceptance.

The triple bottom line refers to the economic, environmental and social performance.

Broadly speaking, the triple bottom line positions the company in the three-dimensional space **profit, planet, people**. It captures the values, which a sustainable company should embrace.

In more practical terms, triple bottom line accounting involves the reporting not only the traditional financial results of a company, but also the environmental and social performance.

Corporate Sustainability

It is easier to talk about the triple bottom line than to try to implement the ideas behind it. Once taken the decision to pursue the goal of corporate sustainability, the company has a long way to go. The steps to sustainable development could be summarised as follows:

- **Compliance**: Complying with the regulatory environmental standards is the initial phase of the journey.

- **Risk management** is introduced in the next step.

- The **business and sustainable development** phase - the final step, which involves the recognition that the implementation of sustainable business strategies can improve company's results and offer new opportunities.

The principles of SRI are to be invested only in companies that comply with the criteria for corporate sustainability, which is the business approach of embracing socially responsible practices.

Usually three aspects are considered when assessing corporate sustainability - these are the economic, environmental and social approach of the company.

- **Economic**: Strategic planning, risk and crisis management, IT management and IT integration and quality management are among the elements of economic sustainability for which the company is screened before considered for SRI.

- **Environmental**: A clear environmental policy and a well- established environmental management system are among the criteria when screening the eligible stocks for environmental sustainability.

- **Social**: In the social context the company is expected to comply with a Code of Ethics or Business Principles and to adopt an equal opportunity policies. Here primarily are considered the satisfaction and involvement of employees and other stakeholders and the fulfilment of shareholders' requirements for stable financial return and long-term economic growth.

SRI Benchmarks

As recognition of the growing interest in SRI many index providers have launched socially responsible indices to standardise the benchmark for financial products based on the corporate sustainability principles. Such indices are the FTSE4Good Index family and the Dow Jones Sustainability Indexes.

Selecting the constituents in a socially responsible index is a process comprising several steps.

- First, the starting universe of stocks is defined; this is usually the unconstrained universe of one of the benchmark indices that the provider offers. So, for example, in the case of FTSE4Good, a company should be in the FTSE Developed Index to be considered for the corresponding FTSE4Good Global index.

- Second, the companies operating in any excluded industries (tobacco producers, weapons systems manufacturer etc.) are removed. Thus, the eligible universe is created. This step of excluding entire industries is not agreed by all commentators - some believe that only stocks, rather than industries, should be excluded.

- Third, the companies in the eligible universe are screened for corporate sustainability.

Further details on the construction methodologies of the indices can be found from the appropriate websites shown in Table 1.

TABLE 1: **Websites of SRI Index Providers**

	Website
DJSI	http://www.sustainability-indexes.com/
FTSE4Good	http://www.ftse4good.com

Source: Commerzbank Securities

Various definitions of corporate sustainability exist and different index providers emphasise different aspects of the social behaviour of a company. However, the message is always the same - in the socially responsible indices should be included only companies, which apply the triple bottom line approach to their performance.

The table below summarises the views on the corporate sustainability of FTSE4Good indices and DJSI in the framework of the triple bottom line.

TABLE 2: **Corporate sustainability**

	FTSE4Good	**DJSI**
Profit	Economic sustainability	Strategy
Planet	Environment sustainability	Innovation
People	Social issues and stakeholder relations Human rights	Governance Shareholders Employees and other stakeholders

Source: Commerzbank Securities

Visualisation

In our paper entitled *Let's play Risk Invaders!* [1] we argued that there is a big difference between the three branches of risk – risk measurement, risk control and risk management.

In the current market environment there is increasing client accountability and management focus, on risk management – a process that clearly helps the portfolio manager explore his risks as an integral part of his day-to-day decision making process. However, traditional ways of presenting risk results of a portfolio (including pages and pages of statistics) immediately constructs a barrier to many portfolio managers. Through our advanced visualisation techniques we believe that proper robust quantitative tools can be provided to **ALL** portfolio managers that should enable them to practice risk management on their portfolios.

Using exactly the same quantitative techniques we can look at the risk road map for:

- A SRI index against the 'standard' alternative to see where the differences are from a risk and return perspective; and

- For a SRI portfolio against a SRI benchmark index.

For the purposes of this paper we confine our attention to exploring the differences between an SRI index and its standard alternative so that we can gauge the different level of risk between the two index strategies. However, it is a trivial task to extend the analysis to any portfolio measured against any benchmark.

Differences between the FTSE4Good Europe and FTSE Europe

The first analysis is to explore the differences between a SRI index and its 'standard' counterpart. As an example of the techniques involved we are using the FTSE4Good Europe and FTSE Europe. The analysis can be done for other indices upon request. With effect from the close of business on 15th March 2002, a number of changes to the constituents of the FTSE4Good indices were made; these changes have been reflected in this paper.

Chart 1 (on pages 10 and 11 overleaf) shows the 'risk road map' for the FTSE Europe index. The risk road map has been constructed in exactly the same way as in our aforementioned research reports.

- Firstly, a risk model is built using only return data;

- Secondly, the risk model is input into a clustering routine that groups individual stocks and groups of stocks together so that similar stocks from a risk perspective are clustered together; and

- Thirdly, the clustered results are displayed in a dendrogram.

Since the whole analysis is based solely upon price returns and no other information about a company (e.g. country or industry or any other fundamental ratios) the groupings of stocks reflect the pure structure of the market without any pre-conceived ideas of the importance of any specific factor.

Interpretation of the Risk Road Map

It is most striking how the stocks in Europe cluster together at various levels of risk (the height of the bars). Upon closer investigation it is easy to identify a number of clear industries – a few have been highlighted in Chart 1. For example:

- the oil majors clearly group together low-down in the 'risk road map' reflecting the well-known fact that they are all similar to each other and are relatively low risk.

- At the extreme right hand end of the Chart is a cluster comprising Software and Media & Photography companies. They are far more risky than most other stocks in the benchmark and continue to be unlike anything else in the market. From a risk budgeting perspective, this means that they cannot effectively be hedged by other stocks in the market.

- All of the Greek stocks cluster together – despite the fact that Greece has recently joined the EU, its companies continue to perform more like each other than their industrial competitors.

Superimposed on this risk road map are the stocks contained in the FTSE4Good Europe index – these are shaded in yellow. A number of observations can be made:

- The yellow bars are spread out across the entire chart indicating that although many companies follow socially responsible policies this fact is not a driving force in their stockmarket performance.

- As the yellow bars are spread out across the chart we can conclude that the FTSE4Good portfolio is broadly diversified. However, there are several areas (the absence of the shaded bars) where there is no exposure – this is the source of some of the tracking error. Of course, the FTSE4Good benchmark is 'not allowed' to get exposure to the parts of the market that are unshaded.

- In fact, the expected tracking error of the portfolio is 2.58% per annum. Simply based on this measure, the two portfolios are very different to each other. Further analysis of the sources of this tracking error are given in the rather more quantitative analysis starting on page 12.

- Under the construction rules of the index, only a few industries are automatically excluded from the starting universe to arrive at the eligible universe. These are:

  - Tobacco producers

  - Companies providing strategic parts or services for or manufacturing whole nuclear weapons systems

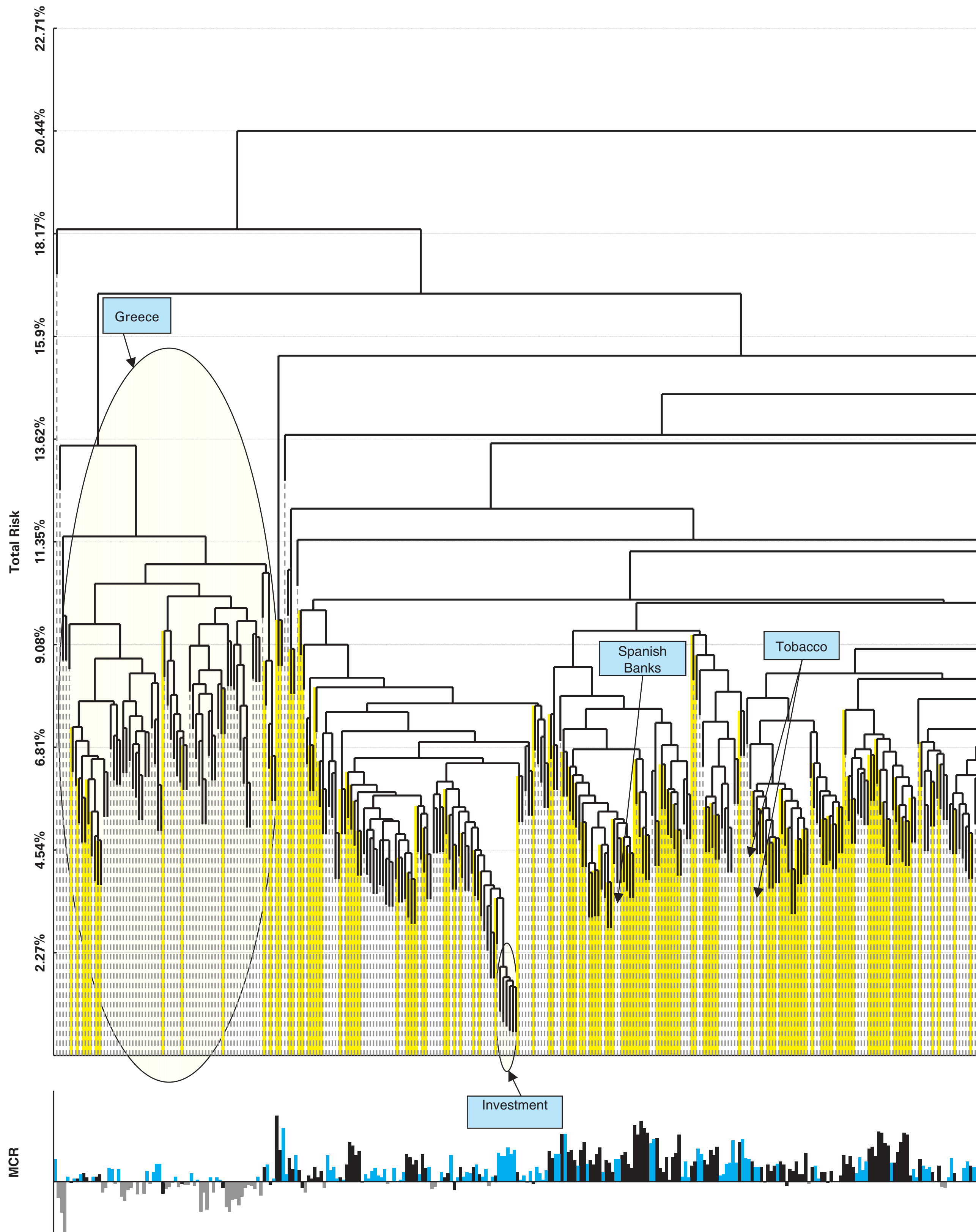
  - Companies manufacturing whole weapons systems

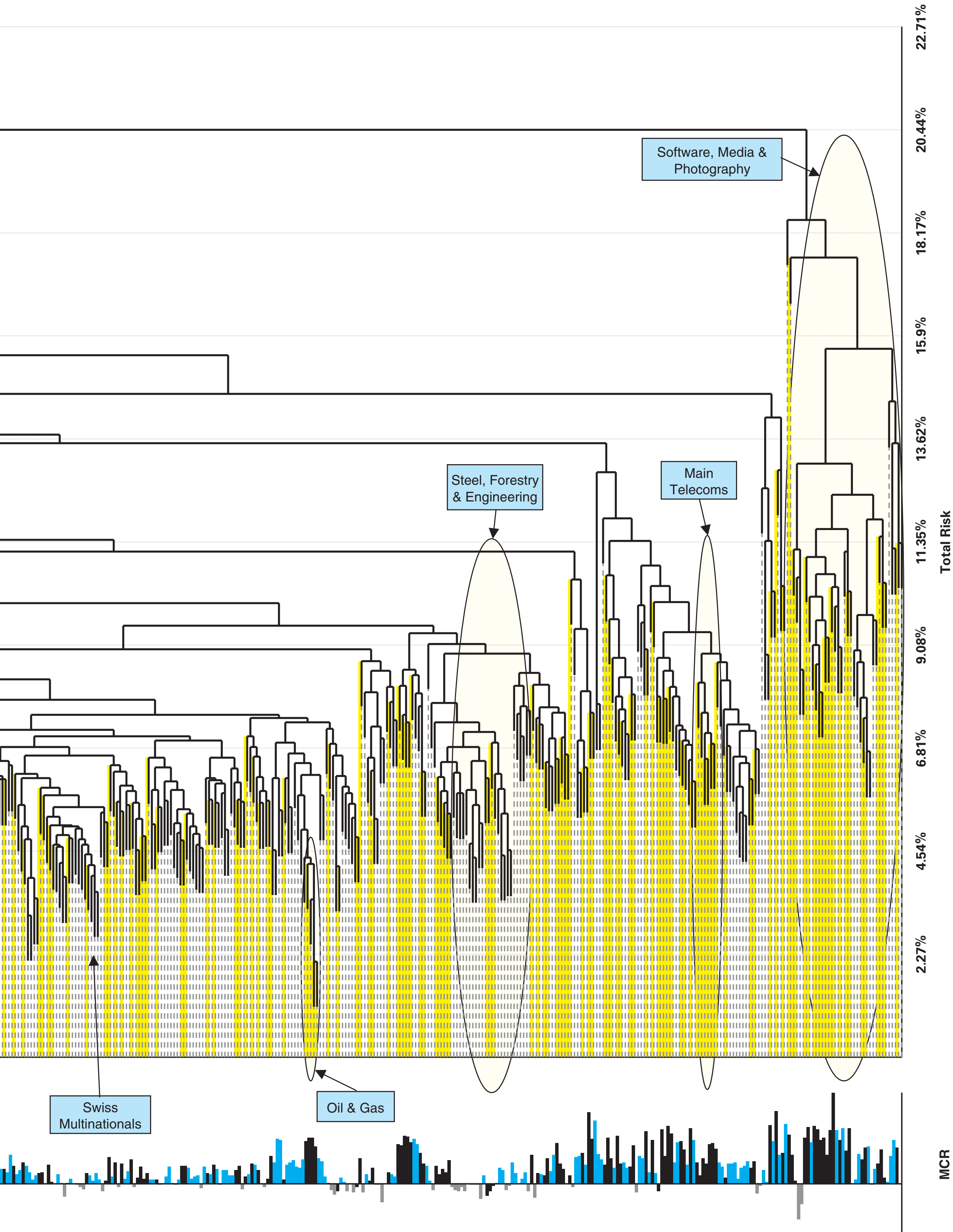
  - Owners or operators of nuclear power stations and those mining or processing uranium.

Therefore, it is no surprise that there are not many clusters where there are no stocks. Nevertheless, for example, there are 'bald' areas in the risk road map in Steel, Forestry & Engineering.

Greece is an eligible country for inclusion in FTSE4Good yet Greek companies clearly fare badly with regard to socially responsible policies.

CHART 1: **Dendrogram and MCR visualisation - FTSE4Good Europe and FTSE Europe**





Source: Commerzbank Securities and FTSE website (www.ftse.com)

An example of an analysis

In this section we apply our equity portfolio risk model to analyse the socially responsible benchmark FTSE4Good Europe (the "portfolio") against the counterpart FTSE Europe (the "benchmark"). A detailed description of the methodology can be found in the research paper Equity Portfolio Analysis[2].

The portfolio is analysed under the following broad headings:

- Basic risk characteristics
- Country exposure decomposition
- Sector exposure decomposition
- Theme & style exposure decomposition
- Individual stock exposure decomposition

Basic risk characteristics

….. a SRI portfolio is likely to incur substantially higher risk relative to a market portfolio simply because it has socially responsible investments

The summary of risk report is presented in Table 3. One can notice that the correlation between the portfolio and benchmark is relatively high. This is not unexpected, as we know that the portfolio - the socially responsible index - is a subset of the eligible universe (all stocks in the benchmark after removing the ones operating in the excluded industries).

TABLE 3: **Risk summary**

Tracking Error	2.58%
Portfolio Beta	1.05
Correlation	0.99

Source: Commerzbank Securities

The expected tracking error is quite high, at 2.58%, in comparison to many actively managed institutional portfolios. In our view the magnitude of this expected tracking error is quite surprising. In practice, it means that a SRI portfolio is likely to incur substantially higher risk relative to a market portfolio simply because it is constrained to hold only socially responsible investments. Accordingly, the investor should have a correspondingly higher expected return. The conventional portfolio beta is 1.05, indicating that SRI investments are slightly more highly geared into a move in the benchmark.

The volatility breakdown (Table 4) shows the portfolio has a volatility of 21.61% compared with 20.52% for the benchmark. Removing the beta exposure of 1.05 (Table 3) is reflected in the line "Residual Risk" in Table 4.

TABLE 4: **Volatility breakdown (annualised)**

All in percentages (%)	Total risk	Factor risk	Stock-specific risk	R-squared
Portfolio	21.61	21.33	3.47	97.42
Benchmark	20.52	20.36	2.62	98.37
Residual Risk	2.40	1.91	1.45	63.47
Tracking Error	2.58	2.10	1.49	66.63

Source: Commerzbank Securities

The FTSE4Good index has meaningful style and theme exposures relative to the market

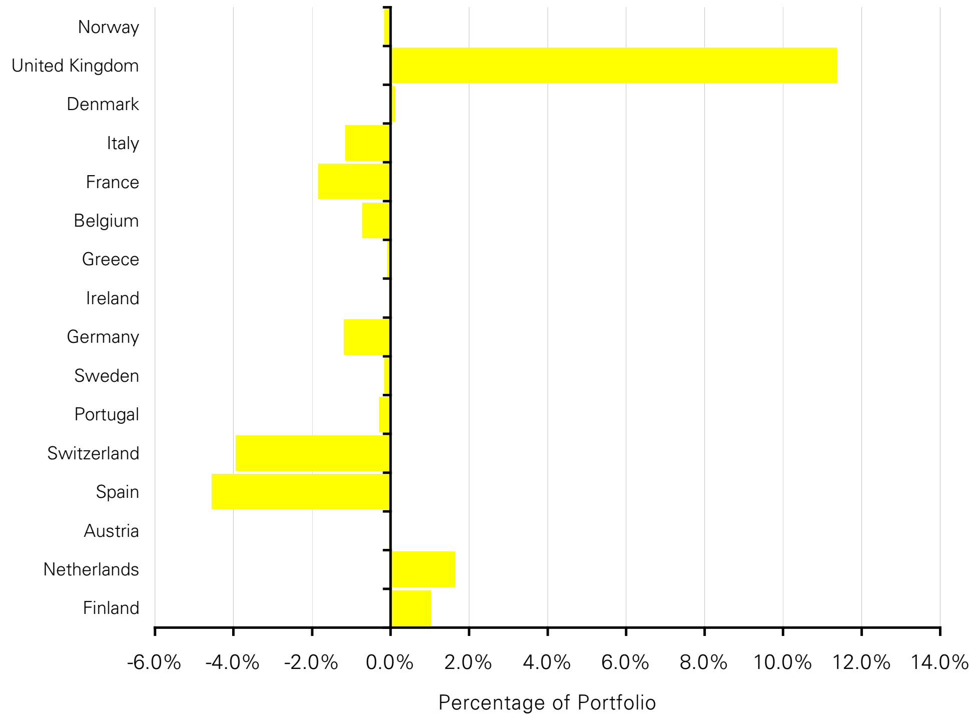
The breakdown of the Tracking error between factor and stock specific risk indicates that almost 2/3rds of the risk comes from factor risk with the balancing 1/3rd coming from specific stock. This means that 2/3rds of the excess risk of the FTSE4Good Europe arises from styles and themes and only 1/3rd from specific stocks. These styles and themes are likely to be permanently in the SRI portfolio. By definition, they can be diversified away in an unconstrained portfolio but this would involve investing in non-SRI stocks! Therefore, a SRI portfolio is likely to have a higher level of risk than a portfolio that is free to invest in any security.

Country exposure decomposition

On a money basis, the UK has an overweight position relative to socially responsible than continental Europe as a whole

Next, the differences between the FTSE4Good Europe and the FTSE Europe indices from a country perspective are analysed. Chart 2 illustrates the aggregate exposure of the portfolio relative to the benchmark with respect to the country groupings. The negative exposures (or underweight) in Switzerland, Spain, France and Italy are offset by the overweight position in the UK.

CHART 2: **Actual country (money) weights (%)**

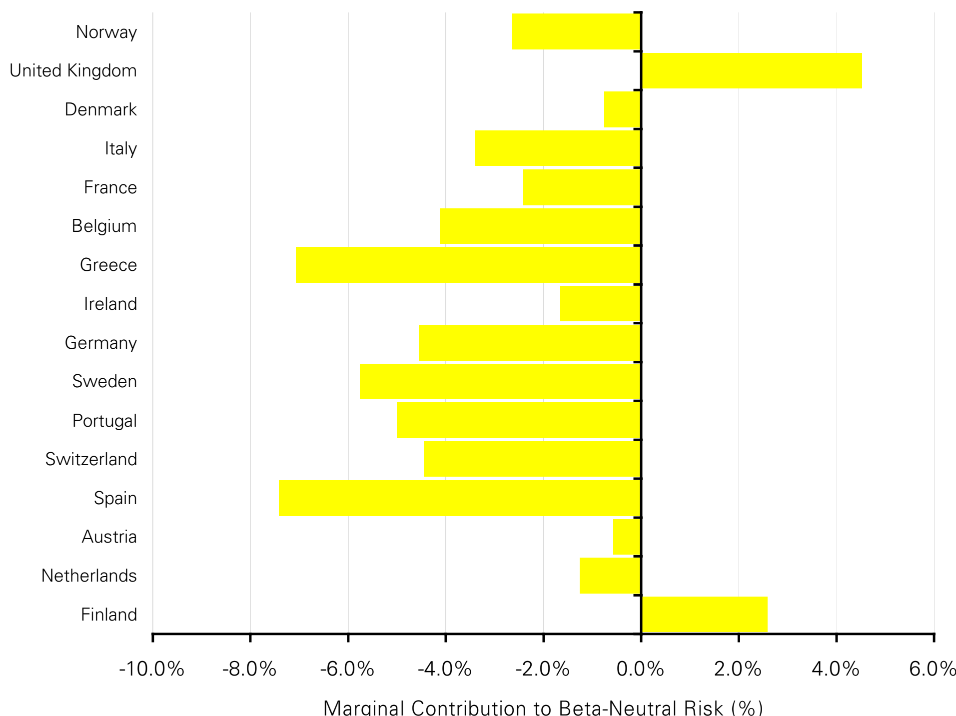


Source: Commerzbank Securities

Whilst this conventional way of looking at country allocation is widely used, of far more interest are the 'risk adjusted' market exposures.

Chart 3 illustrates the marginal contribution to risk on the theme level country. It is the measure of how our portfolio will react to changes / shocks in the respective country. As can be seen, the UK overweight is not so dramatic from the behavioural perspective as it is from the accounting one (Chart 2). At the same time, Spain and Greece turn to be our biggest underweight in terms of the 'risk adjusted' market exposures.

CHART 3: **Risk overweight/underweight (marginal contribution to beta-neutral active risk)**



Source: Commerzbank Securities

Sector exposure decomposition

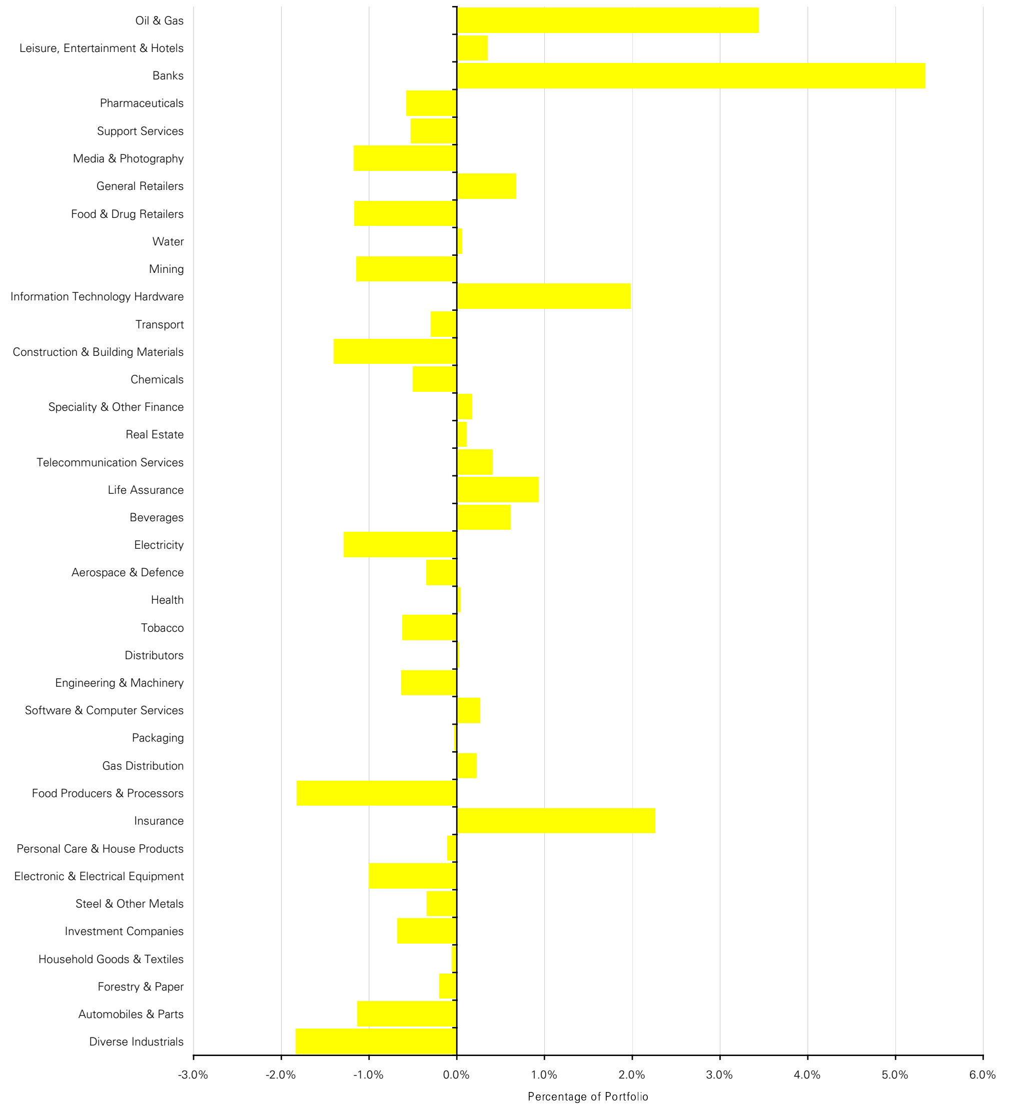
Charts 4 and 5 summarise the sector risk exposure of our portfolio and benchmark, and also looks at the active portfolio and beta neutralised portfolio both from accounting (market capitalisation weighting) and behavioural (risk adjusted beta neutral) view.

From Chart 4 it can be seen that the biggest overweight is the Banks sector (6.34%), and our biggest underweight is the Diverse Industrials sector (-1.84%), because no companies are included in the portfolio at all. Other overweight sectors are Oil & Gas, Insurance and Information Technology Hardware; underweight sectors include Food Producers & Processors, Electricity, Construction & Building Materials, Food & Drug Retailers, Media & Photography and Mining. It is noticeable that the underweight sectors are spread across the market. It is hardly surprising that the Tobacco sector is underweight (-0.62%) since it is one of the excluded industries.

However, a far more meaningful understanding of the portfolio can be obtained if the 'risk adjusted' market exposures view (Chart 5) on the portfolio with the market capitalisation weights (Chart 4) view are compared. The biggest overweight from a 'risk adjusted' market exposures perspective is now the sector Oil & Gas followed closely by Leisure and Gas Distribution. The biggest underweight is the sector Steel & Other Metals, Forestry & Paper, Automobiles, Electronic & Electrical Equipment.

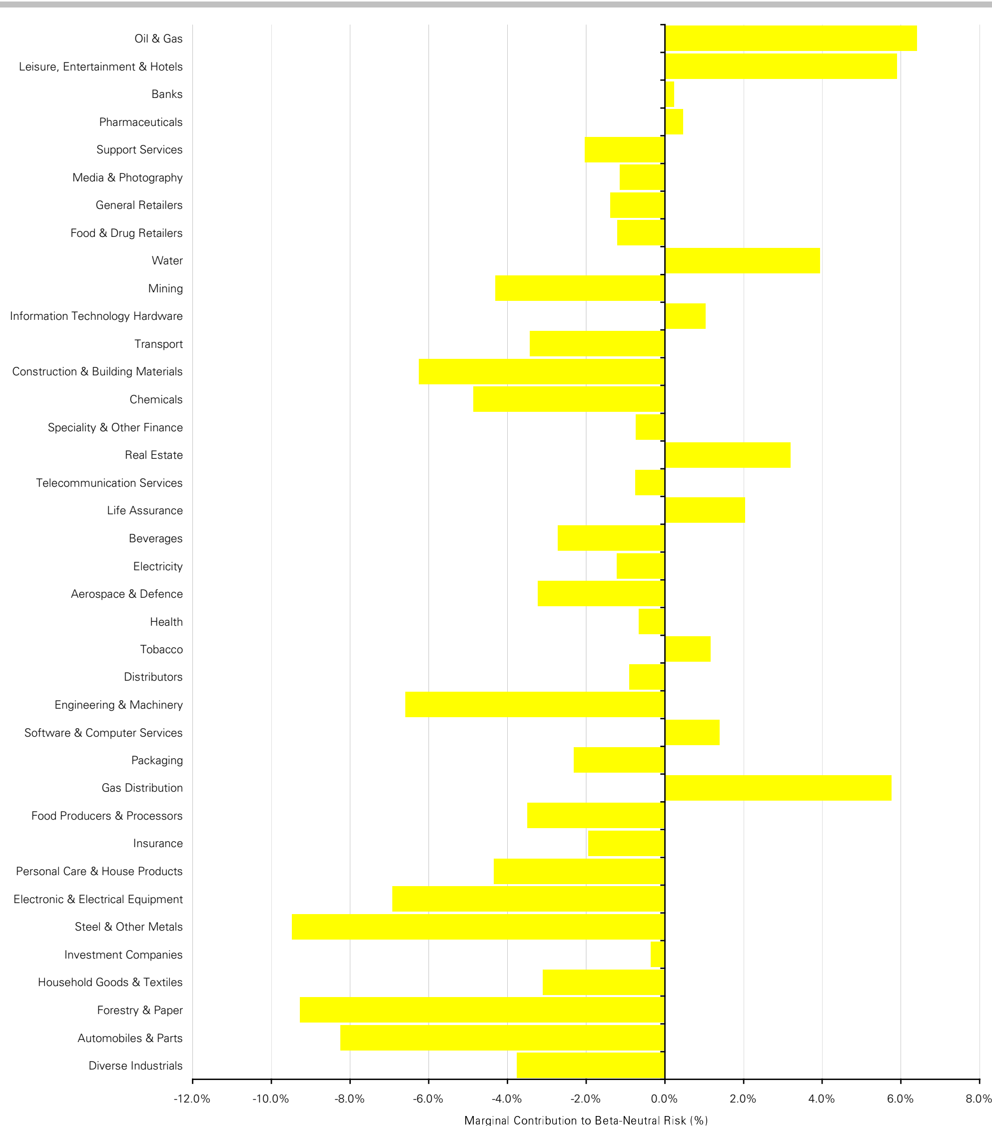
It is interesting to compare these quantitative results with those obtained from the visualisation process. It is clear from Chart 1, that the SRI portfolio is taking risk in these sectors by not having exposure in these areas of the market.

CHART 4: **Actual sector (money) weights (%)**



Source: Commerzbank Securities

CHART 5: **Risk overweight/underweight (marginal contribution to beta-neutral active risk)**



Source: Commerzbank Securities

Theme & Style exposure decomposition

The Theme & Style attribution analysis is especially interesting for SRI portfolios.

We have argued in an earlier report (see Equity Portfolio Analysis, January 2002) that there is no unique correct view of analysing the risk of a portfolio (as implied by a pre-specified factor model). Rather, portfolio managers should be able to view the risk of their portfolios in a way that reflects what themes and styles they are trying to capture in their portfolio at any particular point of time. In this section of the report, we look at a limited range of themes and styles in the SRI portfolio.

By studying different fundamental attributes and investment ratios, researchers have tried to find arguments in favour of, or against, the idea of SRI.

Valuation themes and styles

Many researches find that screened portfolios tend to have smaller average capitalisation (size), higher price/book ratios, higher P/E ratio and more attractive performance ratios than their unscreened counterparts.

Despite these conclusions (which hold for most of the cases studied), researchers still have no unique opinion on the impact of these factors on SRI. In other words, there is no proof in favour of SRI. This fact discourages many investors who are seeking strong evidence of performance advantage of screened portfolios over the conventional ones. However, it is not clear why this performance advantage should exist on a risk-adjusted basis.

We have performed a thematic analysis to find the impact of a number of valuation attributes on the risk of the portfolio. The results are summarised in Table 5.

The results of our thematic analysis show that the SRI portfolio is overweight in size. This is not typical for screened portfolios, but it is not unexpected for this particular case because the portfolio overweighs the benchmark in some of the biggest companies included in FTSE Europe, such as HSBC, Vodafone, Nokia, BP, etc.

Our thematic analysis confirms the other findings of the researchers, i.e. the SRI benchmark is overweight in the price/book value and price/cash earnings ratios. However, we can extend the analysis, looking at the risk adjusted Beta-neutralised Marginal contribution column of Table 5. Applying the behavioural analysis we can state that the SRI portfolio are overweight for almost all themes (with the exception of Dividend Yield, IBES EPS Expectations and IBES Revisions)

TABLE 5: **Theme / style analysis with a selection of investment themes**

	Active portfolio		Beta-neutralised	
Theme / Style	**Value**	**Marginal contribution**	**Value**	**Marginal contribution**
Size (market cap. USD)	0.47	1.24%	0.36	0.77%
Liquidity (traded value USD)	0.44	0.88%	0.39	1.08%
Valuation (Price/Book Value)	0.08	0.71%	0.07	0.77%
Valuation (Price/Cash Earnings)	0.06	0.68%	0.05	1.91%
Valuation (Price/Sales)	0.00	0.62%	0.01	1.88%
Valuation (Current Ratio)	0.00	0.14%	0.01	1.76%
Dividend Yield	0.02	-0.46%	0.02	-0.67%
Payout Ratio	-0.04	-0.22%	-0.04	0.16%
IBES EPS Expectations (FY1 / Actual)	0.01	-0.07%	0.01	-0.25%
IBES Revisons (ups-downs/no. of estimates)	-0.01	-0.23%	-0.02	-0.36%

Source: Commerzbank Securities

The themes and styles analysed in Table 5 are just a few examples of variables that can be analysed – in fact, it is most appropriate for the fund manager to specify the exact definition of the variables in which he is interested. Irrespective of the variables chosen, our analysis can determine the portfolio exposure on both a 'money' and risk-adjusted basis to the variable.

Economic Themes

This section illustrates our time series approach. We analyse a number of economic time series – the list is by no means exhaustive but gives a flavour of the sort of analysis that can be performed.

Table 6 summarises the results. The column "Beta-neutralised" shows the marginal contribution to the beta-neutralised portfolio, i.e. after removing the market influence. We see that the portfolio is underweight in UK CPI (Beverage & Tobacco).

TABLE 6: **Theme / Style Analysis With A Selection Of Economic Time Series Themes**

		Marginal Contribution			
Theme / Style	**R Squared**	**Portfolio**	**Benchmark**	**Active Portfolio**	**Beta-neutralised**
Germany CPI (All items)	41.43%	0.81%	0.93%	-0.64%	-1.06%
Germany CPI Food + alcohol-free drinks	34.14%	3.98%	4.66%	-3.74%	-5.89%
Germany CPI Energy	56.89%	-2.63%	-4.70%	15.37%	18.42%
Germany CPI (All items less food)	43.76%	0.36%	0.40%	-0.21%	-0.39%
Germany CPI (Housing - rental services)	30.20%	1.24%	1.22%	0.61%	0.17%
Germany CPI (Services - excluding rent)	34.78%	-1.41%	-1.33%	-1.19%	-0.75%
UK CPI (All items less seasonal food)	57.31%	2.01%	1.85%	2.08%	1.51%
UK CPI (All items)	58.72%	1.65%	1.60%	1.07%	0.52%
UK CPI (Beverage & Tobacco)	31.55%	10.90%	11.09%	3.07%	-1.12%
UK CPI (Food)	35.97%	-3.34%	-2.48%	-8.30%	-7.95%
UK CPI (Fuel & Electricity)	32.10%	-2.54%	-2.77%	0.77%	1.94%
UK CPI (All items less food)	60.73%	0.99%	1.05%	0.01%	-0.41%
UK CPI (Housing)	45.68%	4.82%	5.03%	0.35%	-1.62%

Source: Commerzbank Securities

Individual stock exposure decomposition

As has been noted earlier, only approximately 1/3rd of the risk between the FTSE4Good Europe and the FTSE Europe index arises from stock specific effects.

First we look at the individual stocks risk characteristics. We take a closer look at the marginal contribution to risk of all stocks. This gives us the information which stocks add to the risk and which are less risky.

We already displayed in the dendrogram (Chart 1) the marginal contribution to risk of all stocks in the universe. We are especially interested in the stocks included in the portfolio, which are shaded in the dendogram.

Table 7 summarises the most diversifying stocks in the portfolio. These are stocks with negative marginal contribution to risk, which means that increasing our weight in these stocks will decrease the tracking error. For example, if we were to obtain an extra 0.1% of Altec, our tracking error would decline by 0.1% * -3.19% * 2.58% = 0.008 basis points.

TABLE 7: **Risk-adjusted underweights**

Company name	Portfolio weight	Benchmark weight	Marginal contribution
Altec	0.00%	0.00%	-3.19%
Stora Enso	0.16%	0.11%	-3.02%
Cosmote Mobile Communications	0.00%	0.00%	-2.37%
Telecel Com. Pessoais	0.01%	0.01%	-2.04%
Electrolux	0.17%	0.12%	-1.91%
Henkel	0.10%	0.07%	-1.87%
Mobistar	0.00%	0.00%	-1.82%
Sarantis	0.00%	0.00%	-1.61%
Hellenic Exchanges	0.01%	0.00%	-0.97%
SCA	0.15%	0.11%	-0.86%

Source: Commerzbank Securities

Table 8 summarises the least diversifying stocks in our portfolio. These are the companies that add most to our tracking error.

TABLE 8: **Risk-adjusted overweights**

Company name	Portfolio weight	Benchmark weight	Marginal contribution
Misys	0.09%	0.06%	24.82%
Marconi	0.05%	0.03%	20.04%
Enterprise Oil	0.10%	0.07%	19.87%
Compass Group	0.51%	0.36%	18.17%
Vodafone	5.45%	3.77%	17.45%
Reuters	0.44%	0.31%	16.52%
HSBC	3.40%	2.36%	16.36%
P & O Princess Cruises	0.12%	0.09%	16.35%
Cap Gemini	0.27%	0.19%	16.10%

Source: Commerzbank Securities

Conclusions

- Socially Responsible Investment (SRI) is gaining broad international acceptance. Therefore a growing number of researchers dedicate their studies to the issues related to it.

- Our integrated risk approach, including thematic analysis provides a flexible framework for equity portfolio analysis. It can readily deal with new and challenging problems such as exploring socially responsible investing.

- Being a subset of the universe, the socially responsible portfolios face more risks than their traditional counterparts. Applying our equity portfolio analysis we examine the risks associated with SRI from varying perspectives.

- Recognising the risks and interpreting the risk structure of the socially responsible portfolio can be done in a very comprehensible way applying our visualisation approach.

Notes:

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Terms: BUY - 15% or more outperformance; ACCUMULATE - 5% to 15% outperformance; HOLD - 5% underperformance to 5% outperformance; REDUCE - 5% to 15% underperformance; SELL - 15% or more underperformance.

Period: During the forthcoming 12 months, at any time during that period and not necessarily just at the end of those 12 months.

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1. Stocks included in the Dow Jones STOXX index have their expected performance relative to this index. Commerzbank has no house forecast for this index, and thus a recommendation is made on the basis of absolute performance. Recommendations are adjusted accordingly as and when the index changes.

2. All other stocks are compared to their relevant local country index and Neuer Markt stocks are compared to the Neuer Markt Index.

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