

Sustainability and share performance – a long-running debate revisited

in cooperation with:

CCRS | Center for Corporate Responsibility
and Sustainability
at the University of Zurich

ZEW
Zentrum für Europäische
Wirtschaftsforschung GmbH
Centre for European
Economic Research

Dr. Eckhard Plinke
++41 61 277 75 74
eckhard.plinke@sarasin.ch

Copyright fee: CHF 50 / EUR 35

Contents

Executive Summary	5
Sustainability: only good for a clear conscience?	6
Results of empirical studies	13
Contacts	22
Publications	23

Acknowledgements

This report is inspired by and based mainly upon the statistical analysis carried out by the Center for Corporate Responsibility and Sustainability (CCRS) at the University of Zurich, led by Professor Hans-Peter Burkhard, in cooperation with the Federal Institute of Technology (ETH) Zurich and the Centre for European Economic Research (ZEW), Mannheim. The calculations and analyses were performed by Andreas Ziegler (CCRS), Urs von Arx (ETH) and Michael Schröder (ZEW), assisted by Eveline Schwegler (CCRS).

We would like to thank them all for their support and their valuable input to this report.

Executive Summary

The Center for Corporate Responsibility and Sustainability at the University of Zurich (CCRS), in cooperation with the Federal Institute of Technology (ETH) Zurich and the Centre for European Economic Research (ZEW), Mannheim, has performed a statistical analysis to examine the link between sustainability and share performance. This analysis was based upon Bank Sarasin's sustainability ratings for European and US companies. This report updates and expands on a first study co-produced by ZEW and Sarasin back in 2002.¹ The new report provides an opportunity to take stock of the opinions and the latest findings on the correlation between sustainability and share performance. The results can be summarised as follows:

- 1. Sustainability does not compromise financial performance:** The current investigation confirms the findings of the majority of studies published on this topic: sustainability does not have a negative impact on the financial performance of share portfolios. This challenges the widely held opinion that applying a sustainability filter actually restricts the optimal selection of investible stocks and therefore has a negative effect on the risk/return profile of sustainable portfolios. It also refutes the argument that environmental and social initiatives adopted voluntarily by companies are incompatible with market rules and tend to destroy value.
- 2. Sustainability makes a positive contribution to performance in certain cases:** On the contrary, there is much evidence to suggest that many environmental and social impacts pose latent risks to companies in the long run. More sustainable businesses can avoid these risks and even exploit the opportunities they present. This report thus reaffirms the findings of other reports which have shown that sustainability tends to have a positive impact on share performance. The positive influence is concentrated especially on the company rating component of Sarasin's sustainability analysis, but its strength varies depending on which ratings, time frames and regions are analysed – and in some cases is not actually significant. It appears that interdependence has increased in recent years, presumably because of the growing importance of the themes of energy and climate protection. In addition, empirical studies are based on data from the past. In future we expect an increase in the relevance not only of energy and climate protection, but also other environmental and social themes in politics, society and commerce. This will further strengthen the growing links between sustainability and financial parameters.

1) Bank Sarasin, Centre for European Economic Research (ZEW), European Business School: Share Performance and Sustainability, Sarasin Report 2002 and Ziegler, A.; Schröder, M. and Rennings, K.: The Effect of Environmental and Social Performance on the Stock Performance of European Corporations, *Environmental and Resource Economics* 37, 661-680, 2007.

Sustainability: only good for a clear conscience?

Growing importance of sustainable investments

In recent years, investors have become increasingly interested in sustainable investment, or socially responsible investment (SRI) as it is also known. With this style of investment, environmental and social criteria are taken into account when reaching decisions. There has been a parallel trend in corporate governance, with the growing popularity of sustainable management or corporate social responsibility (CSR), i.e. the systematic incorporation of ecological and social aspects when managing the business.

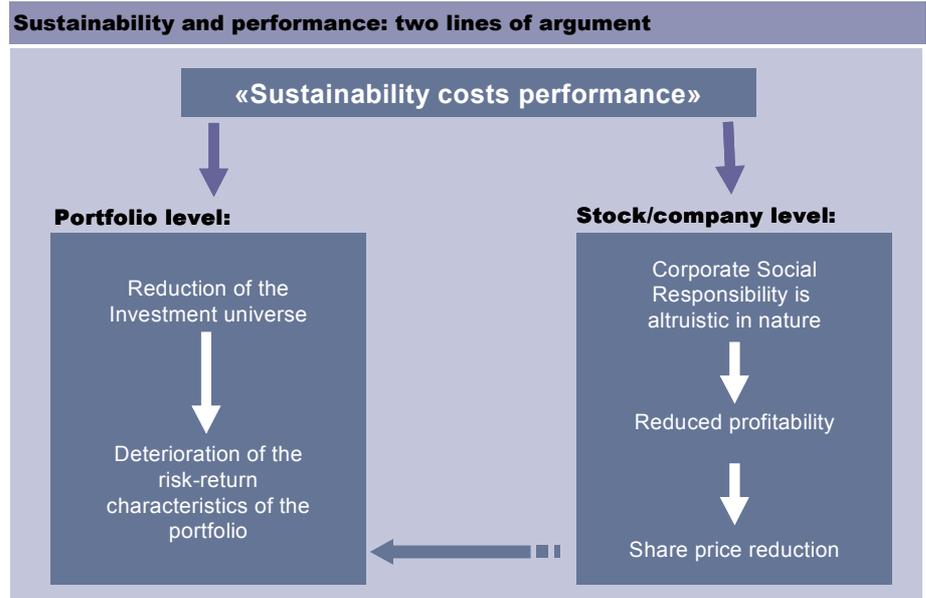
Sustainable investment is ethically motivated to some extent – it strives to limit the negative ecological and social impacts of investment decisions and to encourage progress in both the environmental and social domains. But many investors are also convinced that giving due consideration to social and ecological aspects helps to avoid financial risks, and even to exploit the opportunities they present.

“No such thing as a free lunch”

The idea that sustainable investment is to a certain extent supposed to “kill two birds with one stone” – i.e. to do good, while at the same time generating an attractive return – seems rather suspect to more sceptical observers who believe there is “no such thing as a free lunch”. There is certainly a widely held view that sustainable investment tends to compromise performance. This is based on two lines of argument:

1. **At the fund or portfolio level:** Imposing environmental and social criteria on equity investments restricts the investment universe, i.e. it limits the number of companies eligible for investment. As far as portfolio theory goes, a sustainability filter basically limits the opportunities for diversification and therefore undermines the risk/return relationship.
2. **At the individual stock/company level:** Many people believe that environmental improvements or social benefits (such as additional staff perks or funding of charitable projects) over and above the legal minimum requirements lead to competitive disadvantages or even additional costs for companies, which ultimately drags down their share price.

This report begins by discussing these arguments at theoretical level and then provides an overview of the findings of studies that have examined this topic through empirical and/or statistical analysis.



Source: Bank Sarasin & Co. Ltd

Portfolio level: weaker performance due to limited stock selection?

Limited stock selection not particularly relevant in practice

Although the argument that sustainability criteria effectively limit the selection of investible stocks is correct in theory, in practice it is not particularly relevant, as it has been demonstrated that shares screened against sustainability criteria provide a big enough investment universe for assembling a well-diversified investment fund or portfolio. Sarasin’s sustainable investment universe, for example, currently comprises around 700 international shares. In the case of actively managed sustainability funds and mandates, the restriction on the investment universe is therefore of no practical relevance: portfolio managers of “conventional” (non-sustainable) actively managed funds also work with a limited universe of investible stocks.

With sustainability funds geared more closely to a conventional benchmark (stock index), or in the case of sustainability indexes composed from conventional stock indexes, limiting the universe can exert a bigger influence and result in a higher risk as measured by the tracking error. In practice, however, most of the products offered on the market still have a relatively large number of stocks left even after sustainability screening, which makes any limitations on diversification generally minimal as well.

This line of argument is also based on the assumption that the sustainable stocks are selected from a pre-defined share universe (e.g. a stock index). In practice, however, the sustainability analysis generates additional stock ideas that do not usually feature on the “radar screens” of financial analysts, and actually expand the investment universe. These often concern companies with a smaller market capitalisation, which stand out by virtue of the excellent environmental or social benefits of their products or services (e.g. renewable energies or water treatment).

Sustainability filters can reduce systematic risks

So the use of a “sustainability filter” does not increase the portfolio risk, but can actually help to reduce it, because some sustainability criteria at least present what are known as systematic risks.²

Many problems associated with sustainable development are global in nature and are inextricably linked with global economic development via various reciprocal effects. This is particularly true for climate change, for example: this is a global problem which cannot be solved in isolation by individual regions or countries. Since climate change is closely linked to energy generation and consumption, and energy is required for all commercial activities, measures to reduce climate change affect more or less the entire economy. Most industries and companies are affected by the shortage of energy and its rising cost as a result of stricter climate protection measures.

Climate change therefore influences virtually the entire stock market and as a result presents a systematic risk as far as portfolio theory is concerned. Systematic risks cannot be reduced in a share portfolio through diversification. Sustainability analyses can make a contribution to reducing these risks, however, by flagging up information on long-term interrelationships (e.g. forthcoming political measures and the ensuing costs) which financial markets usually only take into consideration if there are short-term monetary consequences. A sustainability analysis identifies particularly energy-intensive and CO₂-intensive companies and activities, for example. These can then be excluded from an investment portfolio at an early stage, thereby reducing the risk of the share price being eroded by the imposition of tougher environmental regulations.

Sustainability funds do not actually produce systematically lower returns

Empirical studies also confirm that investors in sustainability funds and indexes do not in fact have to accept any compromise on financial performance:³ They come to the conclusion that the risk-adjusted return on sustainability funds and indexes is not significantly different from the market, i.e. “conventional” funds or stock market indexes.

Individual company level: Competitive disadvantage through corporate social responsibility?

Company level: ‘the business of business is business’?

The second aspect of the correlation between sustainability and financial performance can be found at the level of the individual company. The question here is the extent to which environmental and social activities or benefits affect the profit & loss account, and ultimately the enterprise value and share price as well. The idea that this relationship can only ever be negative is frequently heard in ideological discussions about the benefits of a market economy. The argument runs that environmental and social aspects, where financially relevant (e.g. high

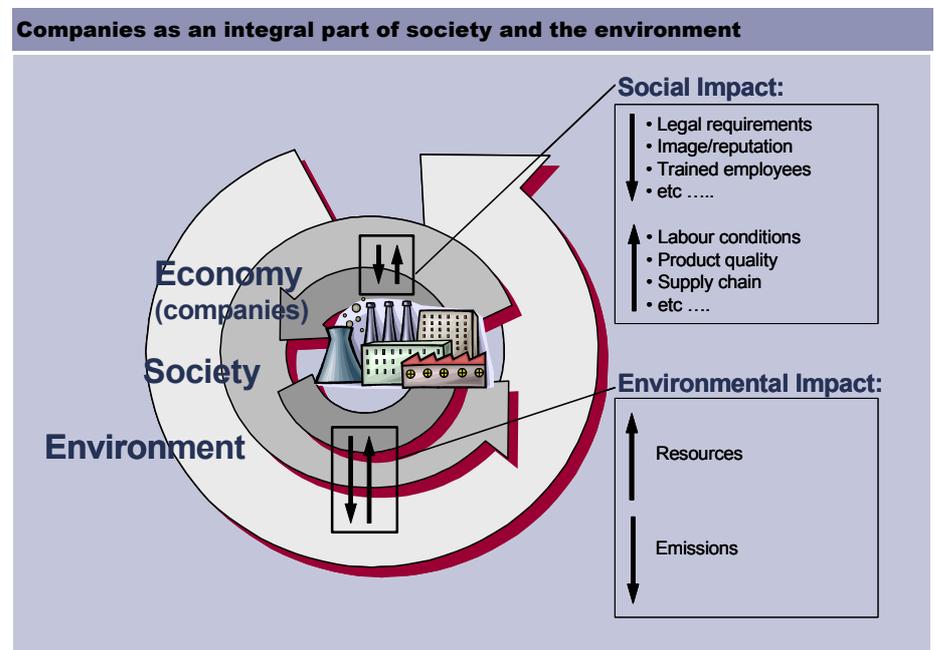
2) Frank Figge: Systematisierung ökonomischer Risiken durch globale Umweltprobleme, Zeitschrift für angewandte Umweltforschung 10 (1997), p. 256-266 and World Business Council for Sustainable Development: Running the Risk- Risk and sustainable development: a business perspective, 2004.

3) Michael Schröder: The Performance of Socially Responsible Investments: Investment Funds and Indices, Financial Markets and Portfolio Management 18, No. 2, 122-142 (2004) and Michael Schröder: Is there a Difference? The Performance Characteristics of SRI Equity Indexes, Journal of Business Finance and Accounting 34 (1) & (2), 331-348, 2007.

staff turnover rates), are in fact taken into consideration by the market and by companies for systemic reasons and produce commensurate responses (e.g. wage rises or other improvements in working conditions in a bid to retain staff). The proponents of this view admit that market imperfections can occasionally arise, but according to them it is the state, rather than the companies themselves, which needs to intervene. This is especially true for what are generally described as “external effects”, such as the environmental pollution which is caused by individual companies, but whose costs are borne by the wider community. Here it was primarily the state’s task to force all corporations to clean up their act – by imposing legal requirements, such as environmental regulations. If individual companies “go it alone” it did not solve the environmental problem and at the same time undermined their enterprise value by incurring additional costs for the realisation of (not legally required) environmental protection measures. Basically companies should concentrate on their own commercial activity. As Milton Friedman famously said: “the business of business is business”.

Not all CSR themes are financially relevant in the short term ...

This line of argument assumes that most of the themes under the heading of sustainability or corporate social responsibility are not relevant to business or are the responsibility of the state. The term corporate social responsibility does certainly cover all the relevant impacts of companies on the environment and on society (see figure). But only some of these impacts are financially relevant – namely those which can be considered to be the responsibility of companies and which could therefore lead to regulations being imposed by the state or other authorities (e.g. environmental protection measures).



Source: Bank Sarasin & Co. Ltd

... but most of them present potential financial risks and opportunities in the long run

Although companies cannot be held responsible for solving all environmental and social problems, the dividing line between the responsibility of companies and the state is very blurred. At the moment, for example, people are questioning to what extent companies can, or should, be held responsible for violations of human rights, within the framework of the United Nations. John Ruggie, Special Repre-

sentative of the UN Secretary-General on Business & Human rights, has recently submitted a report that provides an orientation point for this.⁴

Ultimately, however, companies' area of responsibility is not determined by objective factors but by public perception and opinion. As we know, this can change rapidly over the course of time. The definition of corporate (social) responsibility therefore varies over time.

Environmental risks and opportunities: Cars and CO₂

One key aspect of corporate social responsibility is to improve the green credentials of products, and especially to reduce energy consumption. Given the global initiatives to protect our climate and secure a reliable energy supply, companies that manufacture energy-intensive products, such as carmakers, increasingly face risks in the form of tougher environmental regulations. Until recently, companies and financial analysts paid very little attention to this topic. On the contrary, the strategy pursued in recent years by carmakers of concentrating on heavier vehicles with ever more powerful engines has been a very successful marketing ploy. Now, however, the sharp hike in the oil price and the recent decision by the EU to impose limits to reduce the greenhouse gas emissions of vehicles have increased the financial relevance of the sustainability aspect "lower fuel consumption". Demand for large, gas-guzzling SUVs has already dropped off, especially in the US, where manufacturers are considering withdrawing from the production of such large vehicles. In future, carmakers will need to make more technological changes and reposition their model ranges in a move to cut fuel consumption and CO₂ emissions even further. This will lead to additional costs and weaker sales for the industry in certain segments of the market. On the other hand, companies that offer energy-efficient vehicles or new propulsion technologies can look forward to attractive business opportunities. In this example, the transformation of environmental and social risks into financial risks and opportunities is achieved on the one hand through consumers, i.e. fuel consumption becomes a far more important demand factor than ever before in the auto market. On the other hand, fuel consumption by cars triggers responses in environmental policy: the imposition of limits in an effort to reduce vehicles' CO₂ emissions represents the implementation of the principle of the manufacturer's product responsibility, as prescribed by environmental policy. Its financial consequences include a drop-off in sales for manufacturers making gas-guzzling models.

Viewed over the long run, all the impacts of companies that fall under the heading of sustainability or corporate social responsibility generally present potential risks and opportunities that could at some point become financially relevant as well. These include, for example, risks to reputation (use of child labour for making branded products) or new environmental legislation that results in extra costs. But these go hand in hand with business opportunities for companies offering environmentally friendly and socially compatible solutions, such as new, cost-efficient medical treatments or renewable energies. These risks and opportunities have a latent character to a certain extent: in other words, it is impossible to predict exactly when they will become financially relevant for the company in question. Companies which only address the sustainability themes that are financially relevant at the current point in time are therefore being very short-sighted. Two examples illustrate the typical interrelationships (see boxes).

4) Protect, Respect and Remedy: a Framework for Business and Human Rights; Report of the Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises, John Ruggie; United Nations; Human Rights Council; A/HRC/8/5; April 2008.

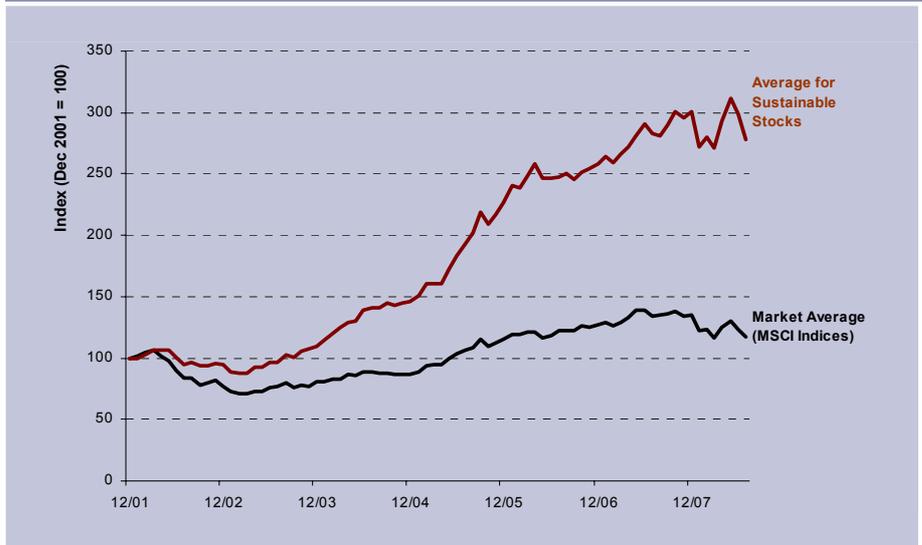
Social risks and opportunities: pharmaceuticals and the provision of healthcare in developing countries

One of the key social themes for the pharmaceutical industry is to make sure that developing countries and low-income groups have access to adequate medical treatment. Hundreds of millions of people in developing countries are denied this access, mainly because they do not have any health insurance and cannot afford to pay for drugs and medical treatment. Another aspect is the lack of drugs and treatments for diseases that are prevalent in third-world countries, such as malaria and a range of infectious diseases. Research activities in these areas are limited, mainly because the sales markets are effectively unattractive due to weak purchasing power at local level. At first sight, securing the provision of adequate medical care is primarily the responsibility of the state – this was the general public opinion until a few years ago (politics, NGOs, etc.). But in more recent public debate, the expectation is that pharmaceutical companies should take greater responsibility: the demands include drug companies stepping up their research into diseases only affecting developing countries, giving up their patent protection in emerging and third-world countries to allow the production of cheaper generic drugs, and essentially selling medicines at a much lower price in poorer countries. These demands not only present reputation risks for pharmaceutical companies (making profits at the expense of the poor) but also the threat of concrete financial losses, e.g. through the lifting of patent protection on certain products.

Sector-specific sustainability risks

Many of the sustainability themes are specific to an individual sector, and the extent of the environmental and social impacts of the various branches is quite different. As one would expect, the financial consequences are most pronounced in those industries with the highest exposure. These include, for example, the automotive, energy utility and oil & gas industries. An analysis of Sarasin’s recommended sustainable universe in seven industries with high environmental and social impacts actually revealed a clear outperformance of their share price compared with the sector index (see next chart).

Outperformance of recommended sustainable stocks in seven industries with high environmental and social impacts



Market average: Weighted (with the relevant MSCI World weightings) average performance of sub-indices for the 7 sectors: automotive & automotive parts, energy, energy suppliers, mechanical engineering, food, paper and pharmaceuticals
Average for sustainable stocks: average performance of companies rated as suitable for investment in the 7 sectors, weighted across all sectors with the weightings of the relevant sub-indices in the MSCI World;
 Source: Datastream and Bank Sarasin & Co. Ltd

However, this calculation involves purely a backtracking of share prices. To be specific, it is impossible to conclude from this whether the outperformance is ac-

tually attributable to the superior sustainability of the stocks in question (or is due to purely financial parameters, such as higher volatility), or whether the outperformance is statistically significant (or just coincidental).

Summary

**Sustainability themes present
both potential risks and
opportunities**

To summarise, corporate social responsibility concerns itself with all the principal environmental and social impacts of a company. Only some of these impacts have any real financial relevance at any given point in time, but most do present potential financial risks or opportunities that can manifest themselves at any (unpredictable) moment. Taking into consideration environmental and social criteria when making investment decisions can therefore help to reduce risk or enhance the return of the investment.

The question for both companies and investors, however, is whether this theoretical correlation, which is implied from practical examples as well, really can be scientifically or statistically proven.

Results of empirical studies

Overview of recent research

Different analytical approaches

Within the field of sustainable investment, the existence of an empirical relationship between sustainability and the financial performance of companies has been at the centre of a long-running debate. This potential correlation has therefore been the subject of many studies in recent years, with a variety of content, scope and methodology:

- Statistical method: simple correlation analyses (evidence of a statistically significant link between sustainability variables and financial variables), aggregated portfolio analyses (evidence of statistical significance of performance differences between a portfolio of sustainable shares and one containing “non-sustainable” stocks, after adjustment to allow for certain financial market effects), through to econometric models at the level of individual shares (sustainability parameters as variables to explain the return on individual companies, in addition to financial market parameters)
- Measurement of sustainability / sustainability variables: from individual aspects such as the quality of the workplace or production-related emissions of pollutants, through to comprehensive sustainability ratings
- Financial variables: stock market parameters (return on shares) or parameters from companies’ profit and loss account (key ratios on profitability or enterprise value)
- Regional scope of analysis (worldwide, USA, Europe, Japan, etc.)
- Period of analysis.

Most studies identify a positive link between sustainability and performance

Various “metastudies” have already been published which assess the findings of research released to date. They show that the majority of these studies came to the conclusion that there is a positive correlation between corporate social responsibility and financial performance.⁵

The next table contains an overview of the more comprehensive studies published over the last three years. All of them conclude that sustainability does not have a negative impact on financial performance, but rather a positive one in most cases – as confirmed by the metastudies.

5) Marc Orlitzky, Frank L. Schmidt, Sara L. Rynes: Corporate Social and Financial Performance: A Meta-analysis, in: Organization Studies 24 (2003), S. 403-411



Recent empirical/statistical studies on the link between sustainability and financial performance		
Study	Content	Conclusion
Edmans, A.: Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices; University of Pennsylvania - The Wharton School; 2008	Portfolio analysis ("100 Best Companies to Work for" vs. market; correction of sector distortions) with a 4-factor financial model Sustainability ratings: limited to quality of the workplace Approx. 100 US companies; timeframe 1984-2006	Significantly higher return from the portfolio comprising companies with a good working environment versus the (adjusted) market portfolio
Kempf, A.; Osthoff, P.: The Effect of Socially Responsible Investing on Portfolio Performance, European Financial Management 13 (5), 908-920, 2007	Portfolio analysis (10% of companies with the best CSR ratings versus 10% of companies with the worst CSR ratings; correction of sector distortions) with a 4-factor financial model Sustainability ratings of KLD (limited thematic spectrum) 700 – 3000 US companies; variable over the period 1992-2004	No reduction in the performance of the portfolio with a positive sustainability rating; portfolio with a negative sustainability rating produced a weaker performance
Bauer, R., J. Derwall, and R. Otten: The Ethical Mutual Fund Performance Debate: New Evidence from Canada, Journal of Business Ethics 70, 111-124, 2007	Portfolio analysis of 8 sustainability funds (compared with the market or benchmark) with a 4-factor financial model Sustainability ratings: different (depending on funds) 8 Canadian funds with global components; timeframe 1994-2003	No difference in the performance of sustainability funds and the benchmark/market
Guenster, N., J. Derwall, R. Bauer, and K. Koedijk: The Economic Value of Corporate Eco-Efficiency, RSM Erasmus University Rotterdam, 2006.	Econometric analysis of the link between sustainability ratings and enterprise value ("Tobin Q") (at company level) Sustainability ratings: limited to environmental protection, in accordance with Innovest 150 – 410 US companies, variable over the period 1996-2002	No reduction in the performance of companies with a positive sustainability rating; companies with a negative sustainability rating gave a weaker performance
Derwall, D.; Guenster, N.; Bauer, R.; Koedijk, K.: The Eco-Efficiency Premium Puzzle; Financial Analysts Journal; Vol. 61; No. 2; 2005	Portfolio analysis (30% of companies with the best CSR ratings versus 30% of companies with the worst CSR ratings), different financial models (incl. correction of sector distortions) Sustainability ratings: limited to the environment (Innovest) 180 – 450 US companies; time frame 1995 – 2003	Substantially higher average return on the portfolio comprising shares with a positive sustainability rating versus portfolios comprising stocks with a negative sustainability rating
Schröder, M.: Is there a Difference? The Performance Characteristics of SRI Equity Indexes; Journal of Business Finance and Accounting 34 (1) & (2), 331-348; 2007	Portfolio analysis of 29 sustainability indexes (comparison with market or benchmark) with 1-factor and 3-factor financial models Sustainability ratings: different (no use of rating, but ready-made indexes) 29 indexes with global components; timeframe: from inception up to y/e 2003	No difference in the performance of sustainability indexes, and the benchmark/market

Source: Bank Sarasin & Co. Ltd

A report recently commissioned by Deutsche Bundesstiftung Umwelt⁶ confirmed this, and also found that indexes or funds with tougher sustainability criteria produce higher than average returns. In 2002 Sarasin was also involved in a study produced by the ZEW in collaboration with the European Business School Oestrich-Winkel that examined the correlation between share performance and Sarasin's sustainability ratings for European companies over the period 1996-2001.⁷ The aggregate result was neutral, i.e. no significant negative or positive relationship could be identified. Some of the findings did however indicate that the rating of the sector can have a slightly positive impact on share performance.

6) See press release dated 11.4.2008 at www.dbu.de

7) Bank Sarasin, Zentrum für Europäische Wirtschaftsforschung, European Business School: Share Performance and Sustainability, Sarasin Report 2002 and Ziegler, A.; Schröder, M. and Rennings, K.: The Effect of Environmental and Social Performance on the Stock Performance of European Corporations, Environmental and Resource Economics 37, 661-680, 2007.

Impossible to make general statements supported by scientific evidence, however

Although the findings of these studies have highlighted certain tendencies, they have not allowed any generally valid statements, supported by scientific evidence, to be made to date:

- Most of the studies take the portfolio analysis approach: it provides an aggregate picture of the performance of sustainable portfolios compared with the overall market or non-sustainable portfolios. The impact of the sustainability of the individual companies in the portfolio on the return can be commingled with the impact of the way in which stocks were selected for the portfolio. The composition of the portfolios of real investment funds, for example, is always heavily influenced by financial criteria. Synthetic portfolios which have been assembled purely on the basis of sustainability criteria can also show significant differences from the market or the model portfolio as far as sector structure is concerned. The impact of these "distortions" on portfolio performance therefore overlays the influence of sustainability and is usually impossible to eliminate.
- In order to measure sustainability, many studies employ indicators that only cover a fraction of the sustainability criteria, such as purely environmental indicators, or individual aspects such as the quality of the workplace.
- In addition, they are often limited to specific timeframes and regions.

New study by CCRS, ETH Zurich and ZEW

Setup of the study

In 2007/2008 the Center for Corporate Responsibility and Sustainability at the University of Zurich (CCRS), in cooperation with ETH Zurich and the Centre for European Economic Research (ZEW), Mannheim carried out a new and relatively comprehensive study of the correlation between sustainability and share performance.

Overview of the analyses performed		
	Econometric analysis CCRS/ETH)	Portfolio analysis (ZEW)
Statistical measure of the influence of sustainability on financial performance	Sustainability rating as an independent variable for explaining return in econometric models alongside financial market variables (see financial market models)	Systematic outperformance of a portfolio of sustainable shares after deducting the impact of financial market variables (see financial market models)
Financial market models	4-factor model (Carhart): Market risk, size effect, value/growth effect, momentum; other models for comparison	4-factor model
Scope of study	175 US companies 281 European companies	Various portfolios constructed out of the same universe as the econometric study
Timeframe	2003 – 2006	1997 – 2006
Sustainability parameters	Sarasin ratings from 2002: Overall rating Separate company and industry rating (ordinal variables) Sub-classes of the company and industry ratings (dummies for top 3 and top 2 rating classes)	Classes of Sarasin ratings (2000 – 2007): Investible vs. non-investible ratings Highest 2 vs. lowest 2 company ratings Highest 2 vs. lowest 2 industry ratings

Source: Bank Sarasin & Co. Ltd

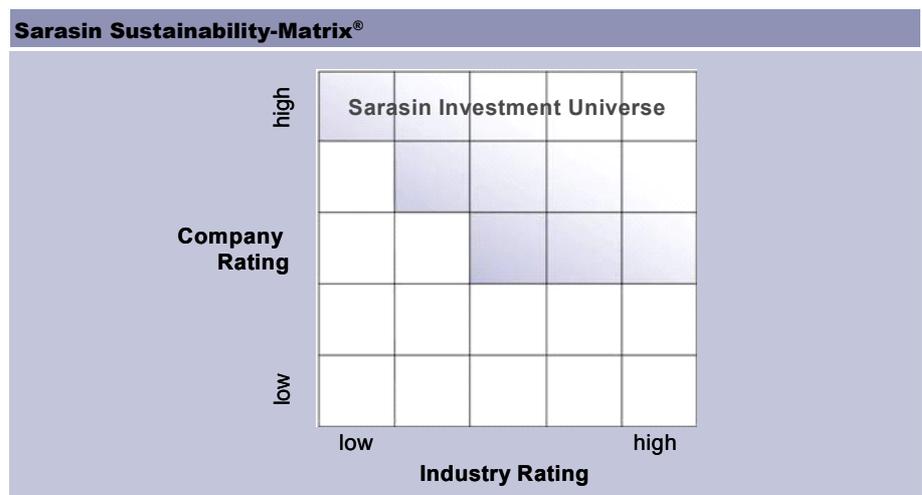
Two different methods were used here: an econometric analysis at the level of individual shares or companies (CCRS/ETH Zürich)⁸ and a portfolio analysis (ZEW). Both studies looked at the European as well as the US stock market.

The studies used Bank Sarasin's sustainability rating, which takes into account all the relevant environmental and social aspects for companies. This has two dimensions:

- Industry rating: Comparative assessment of industries using selected environmental and social criteria.
- Company rating: Comparative environmental and social analysis of companies within their sector. The rating is based on a standard matrix of environmental and social criteria which is identical for all industries. The weighting and selection of detailed criteria vary from one industry to the next.

There are five categories of rating in each dimension, ranging from "high" to "low".

The sustainability rating determines whether a company qualifies for inclusion in sustainable funds and portfolios: Only the companies with a good enough rating on the Sarasin Sustainability Matrix[®] qualify for the Sarasin investment universe (see shaded area in figure below).



Source: Bank Sarasin & Co. Ltd

Positive findings of econometric analyses (CCRS/ETH)

The results of the econometric analyses of individual shares show that the company's sustainability rating has a significantly positive impact on the average monthly share returns over the period 2003-2006. The average outperformance of shares with a higher sustainability rating (2 or 3 top rating categories respectively) is as much as 0.3% per month. The robustness of this positive impact is greater for the USA than for Europe.

8) Urs von Arx, Andreas Ziegler: The Effect of CSR on Stock Performance: New Evidence for the USA and Europe, Center of Economic Research at ETH Zurich, Working Paper 08/85, May 2008

By contrast, these calculations show that the industry rating has no significant impact on financial performance. Test calculations also showed that the positive correlation between the company rating and share performance does not appear to be stable over time, but in earlier periods (before 2003) seems to be less pronounced. The significance of the findings also varies depending on the underlying definition of sustainability used. For example, the result becomes insignificant for European stocks if not just the top two rating classes ("high" and "above-average") are taken into consideration, but the next highest rating class as well ("average"). Conversely, this means that tougher sustainability requirements have a bigger impact on financial performance.

Results of the analyses by CCRS/ETH Zurich and ZEW		
	Monthly outperformance ^{a)} due to sustainability rating	
	USA	Europe
Econometric analyses of individual shares 2003 – 2006 (company rating only)	+ 0.3% ^{b)}	+ 0.3% ^{c)}
Econometric analyses of portfolio 1997-2006 (combined company and industry rating) ^{d)}	+ 0.6%	+ 0.4%

- a) Average over the observation period
- b) Outperformance contributed by the 3 highest rating classes (high, above-average, average) compared with the two lowest rating classes (below average, low)
- c) Outperformance contributed by the 2 highest rating classes (high, above-average) compared with the three lowest rating classes (average, below average, low)
- d) Outperformance of sustainable portfolios over and above financial factors ("alpha")

Portfolio analyses (ZEW) confirm positive result ...

The portfolio analyses performed by ZEW confirm the positive impact of sustainability on financial performance. However, the positive impact was stronger at the start of the observation period (1997-2002). During the period 2002 – 2006, the effect was not significant, but started to rise again towards the end. Furthermore, the positive effect appears to be more attributable to the industry rating than the company rating – the calculations showed that portfolios with "above-average" and "high" industry ratings produced a significant outperformance during the period 1997-2006, both in the USA and Europe.

... but need interpreting

The result of the portfolio analysis does not necessarily contradict the findings of the analyses of individual shares, since it can be distorted by other factors that have nothing to do with sustainability, such as economic development (higher or lower than average growth in individual sectors) and the composition of the portfolios. In the portfolio analyses, the composition of the portfolios, i.e. the method of selection and the weighting of stocks within the individual portfolios, could well have been significant factors⁹⁾:

- The composition of the Sarasin Research Universe can deviate to varying degrees from the relevant MSCI sector index, depending on the industry in

9) The significance of sector distortions is likely to have been relatively small when taken over the entire observation period. The start of this period (1997-2000) was dominated by the Internet boom, which saw an outperformance from sectors with a high and above-average sustainability rating (telecoms, media, software). After the Internet bubble burst, sectors with a poor sustainability rating began to outperform, especially commodities, energy and electric utilities, so that when viewed over the entire period, the impact of the cyclical impact of the sector on performance tended to be negative.

question. Stock selection has traditionally been dictated by the requirements of portfolio management and therefore has been geared more towards the financial attractiveness of individual stocks, rather than trying to achieve the broadest possible coverage of the entire market. Depending on the industry, stock selection can therefore be skewed in the direction of more financially attractive shares to a greater or lesser extent, which could have led to these sectors showing an outperformance in the portfolio analyses.

- In the portfolio analyses, the shares were weighted equally, rather than according to their different market capitalisation values. This meant that smaller companies in those portfolios examined were overweighted compared to the market. Other portfolio analyses¹⁰ have found that the performance effects are attributable mainly to bigger companies rather than smaller ones. The equal weighting is therefore likely to have been the reason for underestimating the impact of sustainability (especially the company rating) on financial performance.

The results of the portfolio analysis basically confirm the positive correlation between sustainability and financial performance, but the impact of the company rating is possibly underestimated. At the same time the positive effect of the industry rating may be attributable to other factors that have nothing to do with sustainability.

Interesting aspects: Stronger impact in the USA ...

Both analytical models confirm that the impact of sustainability on performance seems to be stronger in the USA than in Europe.¹¹ There could be two reasons for this:

- Sustainability differences: The results of the Sarasin sustainability rating show that the percentage of sustainable companies which qualify for inclusion in sustainable funds is much higher in Europe (approx. 50%) than in North America (approx. 35%). In the US, more sustainable companies outperform their peers by a wider margin than in Europe, where sustainability has become a bigger issue in the business world due to tougher legal requirements and greater public awareness. The more pronounced differences in “sustainability performance” in the USA could have resulted in more marked performance differences as well.
- “Pricing in” of sustainability: Since public awareness of sustainability themes is generally greater in Europe than in the USA, it is possible that European equity markets have been quicker to take into consideration and “price in” sustainability factors in the past than has been the case in the USA. The greater impact of sustainability on performance in the USA could therefore be explained by the fact that certain sustainability factors have become more relevant to share prices in recent years (e.g. the theme of energy/climate protection) than in Europe, where they have already been extensively “priced in”.

10) Derwall, D.; Guenster, N.; Bauer, R.; Koedijk, K.: The Eco-Efficiency Premium Puzzle; Financial Analysts Journal; Vol. 61; No. 2; 2005

11) The majority of more recent studies that identified a positive correlation between sustainability and performance also concentrated on US shares (see above).

**... impact changes over the
course of time**

According to the results of the econometric analyses, the impact of sustainability on performance tended to be greater in latter years (2003 – 2006) than in earlier periods. The study conducted in 2002, using similar methodology, for the period 1996 – 2001 by ZEW and Sarasin (see above) also found that the correlation between sustainability and performance was not very significant. One explanation for this could be that as sustainability themes have become more prominent over the last few years, equity markets now see them as having more bearing on share prices. The issue of energy/climate protection is likely to play a pivotal role, as it is a central sustainability theme and has effectively become financially relevant due to soaring energy prices and greater efforts to prevent global warming.

**Sustainability makes a
contribution to performance
under certain conditions**

Conclusions

The discussion of the general links between sustainability and financial performance, case studies, and empirical/statistical analyses lead to the following conclusions:

1. **Sustainability does not compromise financial performance:** Virtually all the studies published to date come to the conclusion that sustainability does not have a negative impact on the financial performance of companies or share portfolios. This challenges the widely held opinion that applying a sustainability filter restricts the selection of investible stocks and therefore has a negative effect on the risk/return profile of sustainable portfolios. It also refutes the argument that environmental and social measures adopted voluntarily by companies are incompatible with market rules and tend to destroy value.
2. **Sustainability makes a contribution to performance in certain cases:** Empirical studies support the assertion that companies which take into account their environmental and social impacts are able to avoid potential long-term risks – and even exploit the opportunities presented by them. The latest study by CCRS and ETH Zurich reaffirms the findings of other reports which have shown that sustainability tends to have a positive impact on share price performance (especially the company components of Sarasin's sustainability rating), but its strength varies depending on which sustainability definitions, timeframes and regions are analysed – and in some cases is not actually significant. It appears that interdependence has increased in recent years, presumably because of the growing importance of the themes of energy and climate protection. In addition, empirical studies are based on data from the past. In future, we therefore expect an increase in the relevance not only of energy and climate protection, but also other environmental and social themes in politics and society and commerce. This will further strengthen the growing links between sustainability and financial parameters.

Companies should thus mitigate their environmental and social impacts not purely out of a sense of moral responsibility, but also in a bid to reduce the financial risks or to exploit the associated opportunities. In some countries regula-

tions have therefore already been introduced requiring companies to extend their financial reporting to include sustainability aspects.¹² A number of institutional investors, such as pension funds, also believe that taking into consideration environmental and social risks in the investment process is part of their fiduciary duty, so as to avoid or minimise the associated financial risks.¹³ In some countries, such as Germany and the UK, pension funds are obliged to disclose the extent to which sustainability aspects are considered in their investment decision process.

Sustainable investment makes it possible to identify the relevant risks and opportunities, and can therefore help to improve the risk/return relationship, either by exploiting the opportunities for maximising returns, and/or reducing risk exposure.

12) In Europe, the EU Accounts Modernisation Directive of 2003 provides the legal framework. In some countries, such as France and the Netherlands, legal requirements already exist, while in the UK a relatively comprehensive regulation was approved, only to be withdrawn and replaced by a less strict code.

13) The Freshfield study commissioned in 2005 by the UNEP Financial Initiative came to the conclusion that (contrary to widely held opinion) it is not legally inadmissible for institutional investors to consider sustainability aspects in their investment decisions. On the contrary, ignoring such aspects can constitute a violation of legal obligations (Freshfields, Bruckhaus, Deringer: A legal framework for the integration of environmental, social and governance issues into institutional investment, 2005)

Contacts

Portfolio Management

Andreas Knörzer
Head Sarasin Sustainable Investment

Yvonne Emmerich-Weissflog
Management Support

Gabriela Pace
Assistant

Gabriele Grewe, Head Portfolio Management
Bonds and Balanced Portfolios

Catrina Vaterlaus-Rieder, Stv. Leiterin
Equity Portfolios

Dennis Bützer
Junior

Niculin Camenisch
Junior

Kai-Uwe Heidemeier
Junior

Arthur Hoffmann
Senior. Equity Portfolios

Patrik Janovjak
Senior. Bonds and Balanced Portfolios

Alex Müller
Senior. Equities Portfolios, Private Clients

Matthias Priebes
Senior. Equity Portfolios

Kurt O. Rohr
Senior. Private Clients

Simone Kolb
Assistant

Romeo Burri
Support

Sustainability Research

Dr. Eckhard Plinke, Head Sustainability Research
Machinery, Electronics and Electrical Engineering

Makiko Ashida
Insurance, Consumer Goods, Software

Thomas Dietzi
Business Services, Telecommunications, Real Estate

Dr. Matthias Fawer
Energy

Andreas Holzer
Chemicals, Paper, Mining, Healthcare, Media, Water Utilities

Klaus Kämpf
Banks, Recycling, Transport Infrastructure

Balasz Magyar
Countries, Institutions, Energy

Dr. Gabriella Ries
Building Materials, Nahrungsmittel, Transport

Dr. Mirjam Würth
Support, Tourism

Client Service/Support

Erol Bilecen, Head Client Service/Support
Institutional Clients

Dr. Michaela Collins
Private Clients

Susanne Gessler
Private Clients

Sonia Wagner
Private Clients

Business Development

Linus Sluyter

Contact

Bank Sarasin & Co. Ltd
Sustainable Investment, CH – 4002 Basel

Tel. +41 61 277 74 77
andreas.knoerzer@sarasin.ch

Tel. +41 61 277 70 24
yvonne.emmerich-weissflog@sarasin.ch

Tel. +41 61 277 73 31
gabriela.pace@sarasin.ch

Tel. +41 61 277 70 73
gabriele.grewe@sarasin.ch

Tel. +41 61 277 78 05
catrina.vaterlaus@sarasin.ch

Tel. +41 61 277 72 11
dennis.buetzer@sarasin.ch

Tel. +41 61 277 73 60
niculin.camenisch@sarasin.ch

Tel. +41 61 277 71 99
kai-uwe.heidemeier@sarasin.ch

Tel. +41 61 277 73 22
arthur.hoffmann@sarasin.ch

Tel. +41 61 277 75 64
patrik.janovjak@sarasin.ch

Tel. +41 61 277 42 70
alex.mueller@sarasin.ch

Tel. +41 61 277 70 23
matthias.priebs@sarasin.ch

Tel. +41 61 277 72 67
kurt.rohr@sarasin.ch

Tel. +41 61 277 73 54
simone.kolb@sarasin.ch

Tel. +41 61 277 77 60
romeo.burri@sarasin.ch

Tel. +41 61 277 75 74
eckhard.plinke@sarasin.ch

Tel. +41 61 277 74 70
makiko.ashida@sarasin.ch

Tel. +41 61 277 42 49
thomas.dietzi@sarasin.ch

Tel. +41 61 277 73 03
matthias.fawer@sarasin.ch

Tel. +41 61 277 70 38
andreas.holzer@sarasin.ch

Tel. +41 61 277 77 80
klaus.kaempf@sarasin.ch

Tel. +41 61 277 73 66
balasz.magyar@sarasin.ch

Tel. +41 61 277 71 66
gabriella.ries@sarasin.ch

Tel. +41 61 277 73 42
mirjam.wuerth@sarasin.ch

Tel. +41 61 277 75 62
erol.bilecen@sarasin.ch

Tel. +41 61 277 77 68
michaela.collins@sarasin.ch

Tel. +41 61 277 42 59
susanne.gessler@sarasin.ch

Tel. +41 61 277 73 64
sonia.wagner@sarasin.ch

Tel. +41 61 277 70 22
linus.sluyter@sarasin.ch

sustainability@sarasin.ch
www.sarasin.ch/nachhaltigkeit

Publications

Energy Efficiency	Energy efficiency – hidden capital. How investors can benefit from the “cheapest source of energy”, Eckhard Plinke, June 2008
Commodities	Commodities – still a responsible investment? Eckhard Plinke, Dominique Ehrbar, Andreas Holzer, Gabriella Ries, June 2008
Solar Energy 2007	Solar Energy 2007 – The industry continues to boom. Matthias Fawer, November 2007
Medicinal Technology	A healthy future? An analysis of the sustainability of the medical technology industry. Andreas Holzer, October 2007
Company Rating	Assessing corporate sustainability – Methodology of the Sarasin company rating. Eckhard Plinke, July 2007
Railway	A multi-track future - An analysis of the social and environmental aspects of railways and public transport. Gabriella Ries, March 2007
Solar Energy 2006	Solar energy 2006– Light and shade in a booming industry. Matthias Fawer, December 2006
Banks	Banking on sustainability: An analysis of the social and environmental aspects of international banks. Klaus Kämpf, November 2006
Industry Rating	The Sarasin industry rating - Methodology and results of sector sustainability analysis. Eckhard Plinke, September 2006
Biofuels	Biofuels – transporting us to a fossil-free future? Matthias Fawer, July 2006
Retail Trade	Buying into sustainability – Environmental and social challenges in Trading, Distribution and Retailing. Michaela Collins, June 2006
Textiles, clothing & luxury goods	“Just do it” – but responsibly. An analysis of the environmental and social aspects of the apparel, textile and luxury goods industry. Makiko Ashida, March 2006
Solar Energy 2005	Solar Energy 2005 – Bridging the gap between shrinking natural resources and booming demand. Matthias Fawer, November 2005
Pharmaceuticals	Always read the label. An analysis of the social and environmental impacts of the pharmaceutical industry. Andreas Holzer, October 2005
Mortgage Bonds	The Sustainability of Covered Bonds. Klaus Kämpf, March 2005
Country sovereign bonds	Emerging country sovereign bonds: A sustainable investment? Michaela Collins, June 2005
Public Financial Institutions	The sustainability of public financial institutions. Klaus Kämpf, March 2005
Solar Energy 2004	Solar energy – sunny days ahead? Current status and outlook for photovoltaics and solar thermal energy. Matthias Fawer, November 2004
China	“Made in China” - Is this a sustainable label? – an analysis of the environmental and social aspects of the apparel, textile and luxury goods industry. Makiko Ashida/Eckhard Plinke, September 2004 (Concise Version of the English Report)
Media	Corporate Social Responsibility Issues of the Media Industry. Gabriella Ries, June 2004
Biotechnology	Will Medicinal Biotechnology sustain its promise? Delivering on potential - to patients, investors, and society. Andrew DeBoo, March 2004 (Concise Version of the English Report)
Government Bonds	Sustainability of sovereign bonds – Approach and results of the Sarasin country evaluation. Michaela Collins/Astrid Frey, January 2004
Solar Energy 2003	“Solar power – Is the outlook cloudy or bright?” Matthias Fawer, November 2003
Social responsibility	Measuring corporate social responsibility – Bank Sarasin’s criteria for sustainable investments. Eckhard Plinke et al., September 2003
Telecommunications	On course for sustainability - How is the Telecommunications industry faring? Themes, trends and leaders. Gabriella Ries/Christoph Ladner, July 2003
Water	Solutions to the water crisis – Can an investor focused on sustainability make a contribution? Andreas Knörzer/Eckhard Plinke, March 2003
Performance	Share Performance and Sustainability - Does environmental and social performance have any influence on share performance? Eckhard Plinke et al., September 2002

To order copies of reports, please see contact address on previous page.

Important information

This report, prepared by Bank Sarasin & Co. Ltd ("BSC"), bases on public available information and data ("the Information"). This publication was not produced by our financial research department. Therefore, the "Directives on the Independence of Financial Research" of the Swiss Bankers Association were not applied. BSC neither has examined the Information to be accurate and complete, nor guarantees its accuracy and completeness. Possible errors or incompleteness of the Information do not constitute grounds for liability, neither with regard to direct nor to indirect or consequential damages. In particular, BSC is not liable for the statements, plans or other details contained in the Information concerning the examined companies, their associated companies, strategies, economic situations, market and competitive situations, regulatory environment, etc. Although due care has been taken in compiling this report, it cannot be excluded that it is incomplete or contains errors. BSC, their shareholders and employees are not liable for accuracy and completeness of the statements, estimations and the conclusions derived from the Information contained in this report. Provided this report is being transmitted in connection with an existing contractual relationship, i.e. financial advisory or similar services, the liability of BSC shall be restricted to gross negligence and willful misconduct. Only in case of failure in essential tasks, BSC is liable for normal negligence. In any case, the liability of BSC is limited to typical expectable damages and the liability for any indirect damages is excluded. This report does not constitute an offer or a solicitation of an offer for the purchase or sale of any security. BSC may perform investment banking services or other services for companies and partners, directors or employees of BSC may serve on the board of directors of companies mentioned in this report. Although measures are taken to avoid conflicts of interests arising from such services or relations to partners, directors or employees, BSC can not guarantee that such conflicts of interests will not occur. BSC shall, therefore, not be liable for any direct nor indirect or consequential damages out of such conflict of interests. Opinions or prices expressed in this report are subject to change without notice.

This document must not be distributed to any person directly or indirectly in the US or to US persons or Canada or Japan. Persons domiciled in other countries should note the sales restrictions that apply to the products in question.

© Copyright Bank Sarasin & Co. Ltd. All rights reserved



SARASIN