

Assessing corporate sustainability

Methodology of the Sarasin company rating

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Summary

Basic concept of the Sarasin sustainability rating

Companies are confronted with environmental and social risks which are closely linked to the production and use of their products and are thus industry-specific in the first place. The Sarasin sustainability rating is based on how successfully companies manage these industry-specific risks. Companies are therefore assessed on the basis of a two-dimensional sustainability rating, consisting of an industry rating (see our Background Paper, September 2006) and a company rating. The combined rating determines whether the company's shares are a suitable investment for Sarasin's sustainable investment funds and portfolios.

Company rating methodology

The company rating assesses an enterprise's environmental and social performance compared with other businesses in the same industry. The environmental rating reflects that company's contribution to reducing pollution (energy and water consumption, toxic emissions, waste) along the product's entire lifecycle, i.e. not just during the production process itself, but also in the "pre-production" phase (suppliers and raw materials) and in product development. The social rating reflects how well a company manages to balance the interests of its stakeholders (employees, customers, investors, competitors and general public), specifically with respect to the four social themes of health, participation, distribution of wealth and knowledge. The relevance of the different environmental and social criteria varies from one industry to the next, and is therefore weighted differently in each case.

Financial relevance of the company rating

As far as investors are concerned, the sustainability rating is not only important from an ethical viewpoint (i.e. to exclude unsustainable companies from an investment), but also from a financial perspective: more sustainable companies can avoid environmental and social risks and exploit associated opportunities, which in turn has a positive impact on share price performance.

- ◆ **Environmental risks and opportunities:** One of the key criteria for our environmental rating is the energy consumption of products. 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. Recent moves by the EU to impose targets on the reduction of vehicle CO₂ emissions will push up costs significantly in the automobile industry. On the other hand, companies that offer energy-efficient vehicles or renewable forms of energy enjoy attractive business opportunities, and their share prices have outperformed as a result.
- ◆ **Social risks and opportunities:** One of the main criteria for our social rating is the protection of customer health. Some of the industries exposed to health risks include pharmaceuticals and foods (side-effects of drugs, junk food, harmful ingredients in food). Food scandals or fatal side-effects of new drugs have resulted in companies having to pay massive damages and suffering a drop in sales, accompanied by a fall in their share price. At the same time, however, new business opportunities have opened up for companies specialising in "healthy" products. The market for organic foods, for example, is currently experiencing an unprecedented boom.

For the clothing, retail and electronics industries, one of the important assessment criteria is the social standards along the supply chain. The trend towards globalisation has encouraged many companies in these industries to outsource most of their production to emerging countries. Although this has allowed them to slash costs, it has also attracted public criticism because of the adverse working conditions in the factories of the contract suppliers. This poses a significant financial risk, especially for companies selling branded goods whose success relies heavily on the reputation of their product brands.

Labour relations are more or less a central social issue for all industries. Good working conditions are not just needed for keeping the workforce happy: empirical studies actually show that they also contribute to a stronger share price performance.

Finally, corporate governance (i.e. stakeholder group Investors in our sustainability rating) has become an important issue in recent years, following a string of corporate scandals. Good corporate governance means, for example, putting in place independent and properly functioning control mechanisms to reduce the company's financial risks.

These examples illustrate the impact of environmental and social factors on companies' financial performance. It has since been clearly demonstrated that such relationships do exist. In recent years a number of empirical studies have been carried out which provide convincing proof of this. A good sustainability rating is therefore one of the key prerequisites for sustainable investments to perform well. However, the significance of this contribution depends on how accurately the rating reflects the relevant environmental and social aspects. Sarasin has focused its rating system from a broad-based matrix of criteria onto industry-specific aspects, and in doing so has also improved the financial relevance of the company rating.

Company rating as a component of the sustainability rating

Sarasin Sustainability-Matrix®

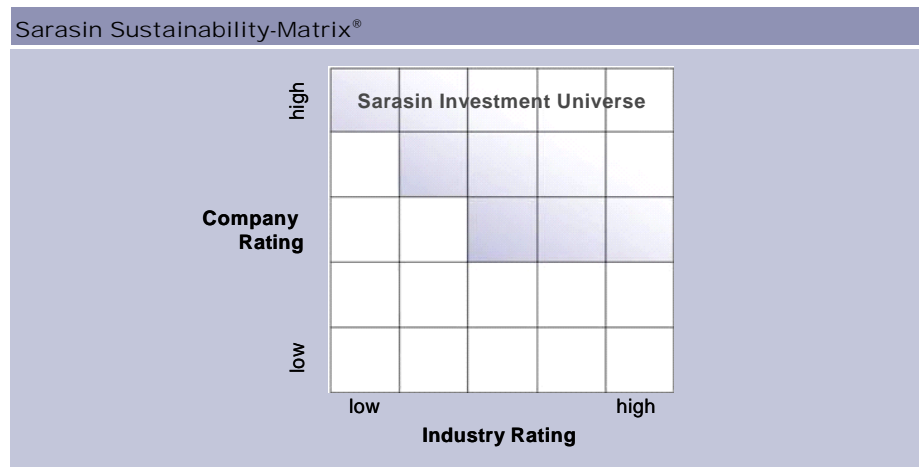
In sustainable investment, the environmental and social analysis of companies is a key decision-making tool, used to complement financial analysis. Sarasin has developed a two-dimensional rating system (Sarasin Sustainability-Matrix®) specifically for this purpose:

- ◆ **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 industry rating takes into consideration the fact that companies' social and environmental impacts are determined mainly by their products, and consequently by the industries they belong to. The company rating therefore assesses how successfully the company handles these sector-specific environmental and social risks and how well it exploits the associated business opportunities compared with its industry peers (“Best-in-Class”).

Sustainability rating determines eligibility for investment universe

Only the companies positioned in the Sarasin investment universe (shaded) qualify for Bank Sarasin’s sustainable investment funds.



Source: Bank Sarasin

Role of the company rating

The company rating determines whether a share qualifies for investment. The parameters for eligibility vary from one industry to the next: the lower the sustainability rating of the industry, the higher the company rating needs to be in order for the share to qualify for the Sarasin investment universe. In industries with a “low” sustainability rating – that is to say, with significant environmental and social risks – only those companies with a “high” company rating will qualify. In industries with high sustainability and low risks respectively, an “average” company rating is sufficient.

Aim: to give an overview of the methodology adopted for the company rating

This Background Paper provides an overview of the methodology used for the company rating and also discusses the effects on companies’ financial performance. We already published a Background Paper on our industry rating in 2006.

Methodology of the company rating

Basic philosophy

Sustainable development

The concept of sustainable development holds that economic growth must take place within certain natural and social boundaries.

Current global economic development fails in many respects to meet the requirement of sustainability. This manifests itself in various environmental and social risks, such as the growing shortage of natural resources, climate change as a result of greenhouse gas emissions, social conflict and labour unrest. These repercussions are felt throughout the global economic system, down to the level of individual companies.

The economy is moving in a more sustainable direction in case these risks for society and the environment are diminishing. "Sustainable companies" are those which make an active contribution to reducing these risks.

Industry rating measures risk exposure

A company's specific exposure to these risks depends mainly on its product portfolio, and therefore ultimately on the sector it belongs to. The chemicals industry, for example, carries a very high risk as one of the biggest energy consumers and the producer of a large number of substances that are toxic to humans and the environment. By comparison, the environmental and social impacts of an industry such as telecommunications are relatively small. The industry rating compares the risks presented by the individual sectors (see our Background Paper published in September 2006).

Company rating measures risk management

Companies in the same industry handle sector-specific risks differently. Responses range from simply ignoring them, to passive risk prevention strategies, active risk management to "master" or reduce risks, through to pro-active strategies designed to exploit the associated opportunities. Every risk also presents opportunities for those companies capable of providing solutions that help to reduce risks. For example, providers of energy-efficient power station technologies and renewable energies (solar, wind, etc.) actually stand to benefit from the threat of climate change, as they offer solutions to reduce CO₂ emissions caused by power generation, the world's biggest source of greenhouse gases. From a sustainability perspective, preference should be given to these companies, as they not only reduce environmental and social risks, but also derive financial benefit in the process.

The company rating therefore measures how successfully a company manages its industry-specific risks.

It is based on a structured matrix of criteria designed to evaluate companies' strategies, measures and effective success in resolving the relevant environmental and social issues.

- ◆ In the environmental dimension, the analysis focuses on the extent to which a company is reducing (or has already reduced) the environmental impacts of

its products. The analysis takes into account the product's entire lifecycle, from the procurement of raw materials and intermediate products, through to actual production and use/consumption, and finally disposal (lifecycle approach).

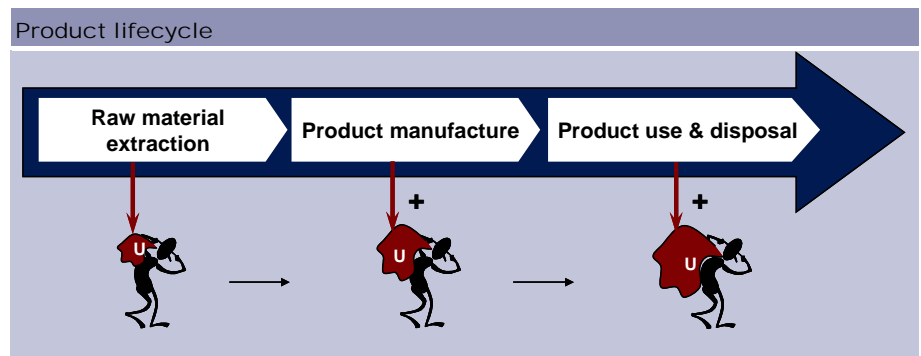
- ◆ In the social dimension, the analysis focuses on the extent to which a company balances the interests of its various stakeholders (employees, customers, suppliers, the general public, investors, competitors), thereby helping to avoid and reduce conflicts (stakeholder approach).

The relevance of the different environmental and social issues and risks varies from one industry to the next. The individual criteria – and their weighting within the company rating – are therefore specific to that particular industry.

Environmental criteria for the company rating

Lifecycle approach

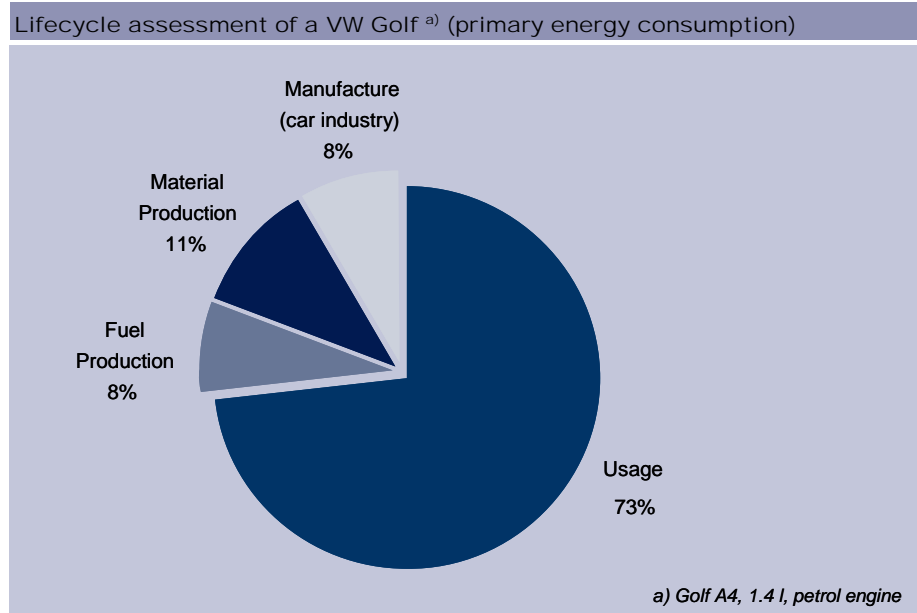
Products go through a lifecycle running from the extraction of raw materials (e.g. metal ores in the case of the automotive industry), to the production of materials, intermediate products and components (steel, tyres etc.), to the manufacture of the vehicle itself, the use of the vehicle and finally its disposal (scrapping etc.). Each phase of the life cycle has environmental impacts.



Source: Bank Sarasin

The manufacturer of a product has an influence primarily on the environmental impacts of the production processes. But through the choice of materials and suppliers on the one hand to product development on the other he also influences the indirect environmental impacts of the product along the lifecycle. He is equally affected by the associated indirect risks, such as a ban on specific toxic substances in materials and intermediates, or regulations on the disposal of used products that have reached the end of their useful life. One such example is the European WEEE Directive governing the return and recycling of waste from discarded electronic products. EU environmental legislation has now explicitly defined producers' responsibility in this area: they are liable for any environmental or health damage deriving from product use and disposal.

The indirect environmental impacts can actually be more significant than the direct impacts of production, depending on the industry in question. For example, approximately 80% of the energy consumption associated with the automotive industry is caused during use (fuel consumption and fuel production), and less than 10% during the manufacture of vehicles (see chart).



Source: Volkswagen 2000

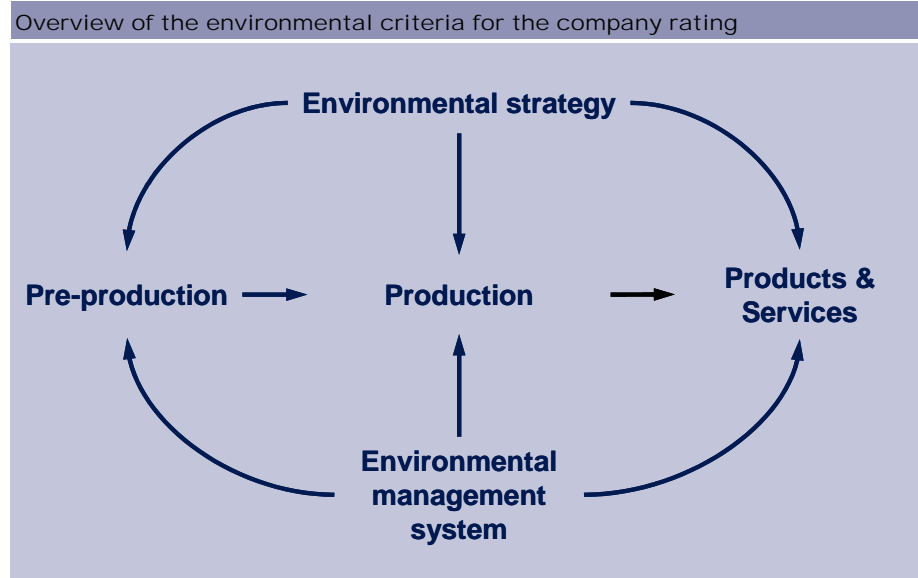
Assessment criteria

The environmental part of the company rating therefore consists of three main criteria:

- ◆ **Pre-production:** This involves assessing just how environmentally friendly the company's supply chain is. The first point to investigate is the extent to which the company has set environmental criteria for product development and the procurement of raw materials and intermediates, and actually enforces them. Another important aspect is whether a company imposes environmental protection requirements on its suppliers' production processes, and also monitors their implementation.
- ◆ **Production:** In this stage we examine the environmental impacts of the actual manufacturing process (e.g. energy consumption, emissions, waste) compared with industry peers. This is based on quantitative environmental indicators and information about the company's environmental protection measures and programmes.
- ◆ **Products and services:** In this stage we assess the environmental impacts of using and, where appropriate, disposing of the company's products. This includes, for example, improvements in the products' green credentials through product innovation or suitable management measures. We check whether environmental requirements have been integrated into the product development phase, and whether the company uses tools for product optimisation and product environmental audits.

Other elements for assessing environmental responsibility are the overriding criteria of **environmental strategy** and **environmental management system**. With *environmental strategy*, we examine how effectively environmental aspects are integrated into the company's business strategy. One example is when business units switch over to greener alternatives with high market potential, such as renewable energies. Under *environmental management*, we determine whether the company has put in place an organisation responsible for environmental pro-

tection, i.e. to define environmental goals and measures and to check whether targets are met. These criteria are usually met if the company has achieved ISO 14001 accreditation.



Source: Bank Sarasin

WBCSD subcriteria

We measure the environmental performance of companies within the main criteria of pre-production – production – products against a standardised matrix of environmental parameters, or sub criteria, derived from the work done by the World Business Council for Sustainable Development (WBCSD)¹. This organisation has identified the key points that companies need to address in order to reduce their environmental impacts:

- ◆ **Energy intensity:** Energy consumption, or measures to reduce it. Examples include the development of new and optimised products with lower energy consumption, more energy-efficient production processes, or the use of raw materials whose production is less energy intensive.
- ◆ **Material intensity:** Use of materials and measures to reduce their consumption, e.g. lighter products (through more lightweight designs or materials) or more efficient production processes.
- ◆ **Toxicity:** Use of substances in products which are toxic for humans or the environment, and measures to reduce or replace them; the release of these substances during production (air emissions such as nitrous oxides, volatile organic compounds and toxic discharges such as organic substances or heavy metals) and measures to reduce them.
- ◆ **Revalorisation:** Creation of waste (hazardous waste, solid waste and secondary raw materials such as metals, paper, glass); measures to mini-

1) World Business Council for Sustainable Development: Eco-efficient Leadership for Improved Economic and Environmental Performance, 1996 and Fussler, C.; James, P.: 'Driving Eco-Innovation: a breakthrough discipline for innovation and sustainability', 1996.

mise and recycle waste (recycling, optimisation of production processes); products that contribute to waste problems (e.g. discarded electronic products, packaging, foods) and the development of products made of materials that are easy to recycle or dispose of.

- ◆ **Use of renewables:** (Sustainable) use of renewable resources, and the replacement of non-renewables with renewable materials (e.g. switch from conventional petroleum-based plastics to new biodegradable plastics).
- ◆ **Durability:** The crucial aspect here is the development of products with longer service lives: A longer useful life reduces production overheads, because of the longer replacement cycle, and ultimately lowers the associated environmental impacts as well.
- ◆ **Service intensity:** Higher service intensity reduces the amount of materials used (per unit of value-added) and the environmental impact at the same time. One example of this in the energy supply industry is Energy Contracting. Here the energy provider supplies the consumer with useful energy (room heat, hot water) rather than electricity or gas, and also operates heating systems for customers. This gives an incentive to energy providers to focus on solutions offering the maximum possible energy savings (e.g. district heating and cogenerators rather than decentralised oil-fired boilers).

Weighting

The environmental relevance of the individual product lifecycle phases and themes varies from one industry to the next. Because of this, our rating system gives them **different weightings** in the overall assessment, depending on the industry in question. With industries that produce long-life, energy-intensive products, such as cars or machinery, the main focus is on product use (“products and services”), while in the primary industries (chemicals, paper & cellulose, iron & steel, cement, etc.) it is on production processes, and in the retail, textile or food industry on the supply chain (“pre-production”).

The environmental impacts of the food industry (see next figure), for example, are dictated mainly by pre-production factors, i.e. the production of the basic agricultural products in the food supply chain. Factors here include water consumption for irrigation (material intensity), the use of crop protection agents (toxicity), land usage and erosion through overuse (monocultures, heavy fertiliser use, soil degradation) by farmers (renewable resources).

Environmental rating - subcriteria (example of food industry)			
Criteria:	Elements		
	Pre-Production	Production	Products & Services
Energy intensity	●●	●●	
Material intensity	●●●		●●
Toxicity	●●●		●●
Revalorisation		●●	
Renewable resources	●●●●		●●
Durability			
Service intensity			

● Relevance and weighting of subcriteria

Source: Bank Sarasin

The weighting of the individual environmental criteria is based mainly on the results of our industry rating, which analyses the main environmental and social impacts of individual sectors.

Social criteria of the company rating

Stakeholder approach

Bank Sarasin uses the **stakeholder approach** to assess social sustainability. This rating reflects how effectively a company balances the interests of its different stakeholders. This is because social risks and opportunities manifest themselves in the form of stakeholder actions and reactions. The following groups are stakeholders:

- ◆ **Employees**, which are at the heart of delivering a company's products and services.
- ◆ At the start of the production process are the **suppliers** of raw materials, components and finished goods.
- ◆ **Investors** (mainly shareholders), where the main issue is good corporate governance.
- ◆ The **general public** includes local communities living in the vicinity of the company's production sites, authorities and non-governmental organisations (NGOs).
- ◆ On the market side the **customers** and finally
- ◆ the **competitors** are stakeholders.

Other elements for assessing social sustainability are the overriding criteria of **social strategy** and **social management system**. The social strategy component describes to what extent social factors are incorporated into a company's business strategy. Social management, on the other hand, examines the degree to which organisational measures are in place to manage stakeholder relations. This may involve, for example, a total quality management system designed to

improve the quality of all business processes. It also incorporates stakeholder aspects such as customer satisfaction, choice of and collaboration with suppliers, staff training and encouraging individual initiative.



Source: Bank Sarasin

Subcriteria Relations with individual stakeholders are assessed using standardised sub criteria. These describe the most important social impacts that companies have. The four main subcriteria are²:

- ◆ **Health:** Companies should reduce the health risks for their stakeholders, and do their best to promote their health. This includes work safety in their own premises (stakeholder group: *employees*) and at suppliers (*suppliers*), the avoidance of incidents causing the release of hazardous substances into the vicinity of production plants (*general public*) or the exclusion of potentially harmful substances in their products (*customers*).
- ◆ **Participation:** Companies should take into account the interests of stakeholders or allow them to participate in decisions that affect them. This includes having a say in business decisions and the avoidance of discrimination (stakeholder group: *employees*), protection of the rights of minority shareholders (*investors*), transparent and fair purchasing terms (*suppliers*) or refusal to collaborate with regimes that violate fundamental human rights (*general public*).
- ◆ **Wealth:** Companies should avoid activities that result in major material imbalances for stakeholders, and should help to minimise such imbalances. On the positive side this includes paying fair remuneration and additional benefits to employees in developing countries especially, or taking part in

2) Based on concepts developed by the World Business Council for Sustainable Development (WBCSD), UN Global Compact, OECD, European Federation for Quality Management, Global Reporting Initiative, among others; a more detailed list can be found in the Sarasin report "Measuring corporate social responsibility", September 2003.

Fair Trade programmes (stakeholder group: *suppliers*), and on the negative side fat-cat salaries (*investors, employees*) or the formation of price cartels, to the detriment of competitors and consumers.

- ◆ **Knowledge:** Companies should contribute towards improving stakeholders' know-how and education. This includes training and professional development for employees, research and development programmes of general interest (stakeholder group: *general public*) or learning programmes for customers.

Weighting

The relevance of the individual stakeholder groups and social issues varies from one industry to the next. The individual criteria are therefore **weighted differently** for each industry. In the food industry, for example, "health" is a very important criterion for customers (see table below): The many food scandals in recent years (BSE and other animal diseases, toxic substances in food, rotten meat) have forced the food industry to focus more on the areas of product safety and quality and to tackle the resulting costs and risks to their reputation. Suppliers (i.e. farmers and growers) also play a major role in the food industry. The agricultural industry is problematic when it comes to work safety (accidents at work, illness through using agrochemicals) and working conditions (low wages and cheap prices paid for farm products sourced from developing countries).

Subcriteria used for the social rating (with the food industry as an example)

Criteria:	Stakeholders					
	Suppliers	Public	Investors	Employees	Competitors	Customers
Health	●●●	●●●		●		●●●●●
Participation	●●	●	●	●●	●	●
Wealth	●●●●	●	●	●●	●	●●
Knowledge	●	●●		●		●
Controversial activities		●●●				

● Relevance and weighting of subcriteria and stakeholders

Source: Bank Sarasin

The weighting of the individual social criteria is based mainly on the results of our industry ratings, which analyse the main environmental and social impacts of individual sectors.

Information sources

Information: primary and secondary research

Our analysis of companies' sustainability performance is based on primary and secondary research. When collecting secondary information, Sarasin works mainly with ASSET4. This company maintains a comprehensive database of environmental, social and corporate governance data on businesses, which we use as raw data for our sustainability analysis. Our sustainability analysts review and then assess this information. For a core universe of companies that covers

invested shares and other leading players in the same industry, our analysts perform a more in-depth analysis in which additional primary data and information are gathered.

The following information sources are used for the Sarasin company rating, irrespective of whether primary or secondary research is involved:

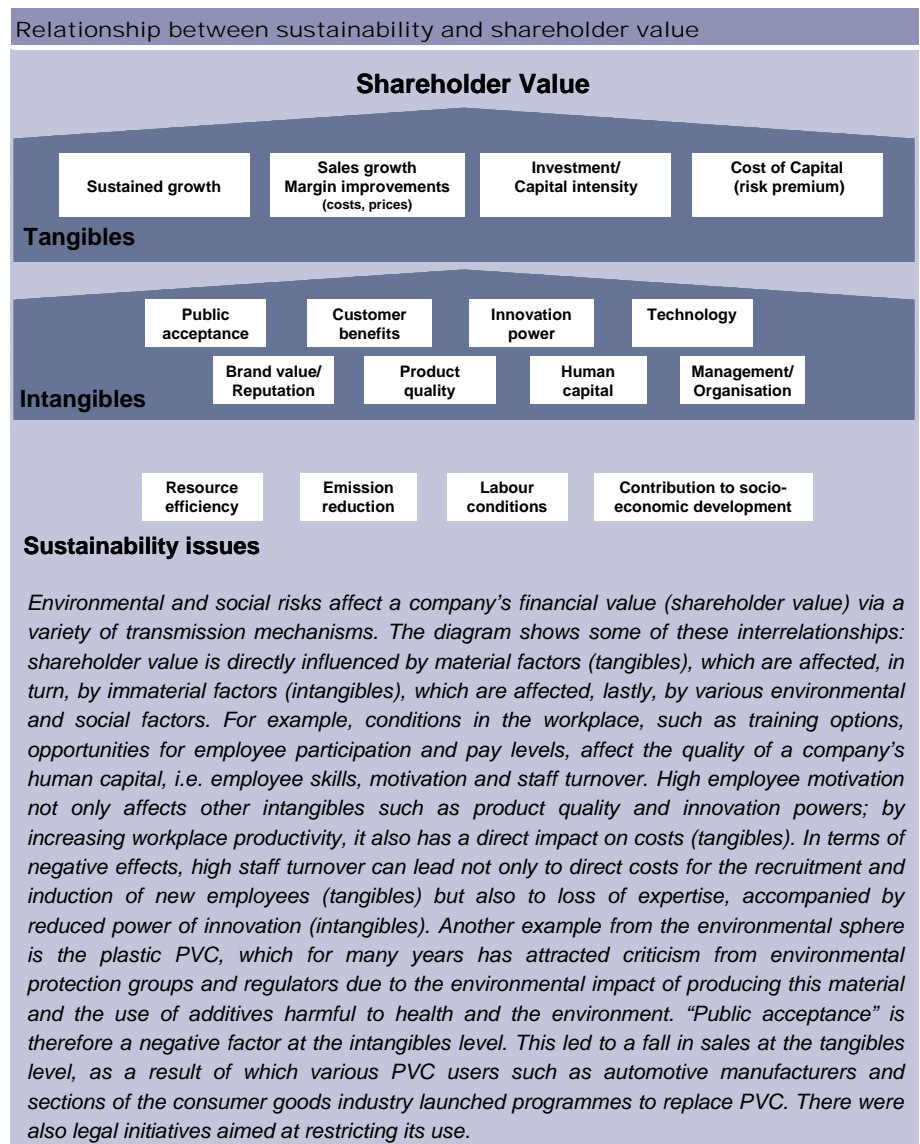
- ◆ Company publications, such as annual reports, environmental and sustainability reports, and Internet websites;
- ◆ Press comments, i.e. systematic search for press articles on the company in question (databases);
- ◆ Various external information sources: These include NGOs such as Labor-Net, Corporate Watch, trade unions and organisations active in the field of corporate social responsibility (e.g. World Business Council for Sustainable Development, Business & Human Rights Resource Center);
- ◆ Company contacts: We contact the companies (in person, by phone or by letter) mainly to clarify unresolved issues and discuss controversies (e.g. disputes with NGOs). We also make on-site company visits and meet up with management representatives. We consciously avoid sending out bulky questionnaires.

Examples of the practical application of the rating system

Sustainability has financial impacts

The following section provides examples showing how our rating system and individual rating criteria are applied in practice. In describing these criteria, we focus specifically on their impact on a company's financial performance.

As all companies are bound up with society and the natural environment, the industry-specific social and environmental risks they are confronted with as a result of their core business also have an effect over the long term on their business development and thus on their share price performance (see box below). Financial analysts thus refer to them as "extra-financial risks".



Source: Bank Sarasin, based on Rappaport, A.: Shareholder Value - Wertsteigerung als Massstab für die Unternehmensführung, Stuttgart 1995.

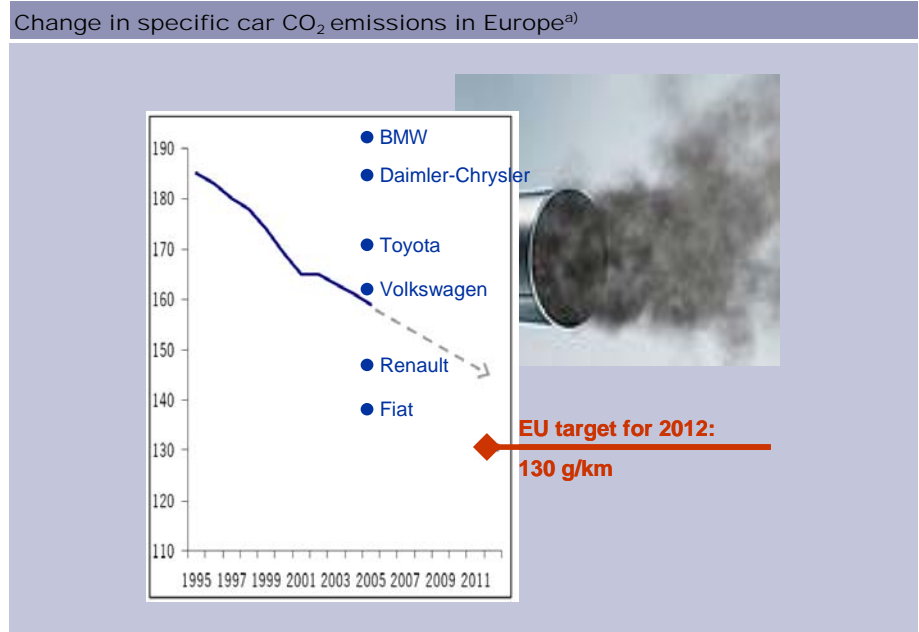
Environmental criteria

As explained, the environmental component of the company rating assesses a company's environmental performance through the three phases of the product life cycle: pre-production, production, and products and services.

Risks from environmentally harmful products: automotive industry

In some sectors, the majority of the environmental impacts occur during the **products'** use. These sectors include the automotive industry (see above), where the environmental impacts (energy consumption and air pollutant emissions) are considerable: road traffic accounts for around 20% of (final) energy consumption and greenhouse gas emissions (contribution to climate change) worldwide. It also accounts for a substantial proportion of the air pollutant emissions that are harmful to health, such as particulates and the precursors to ozone and smog, namely nitrous oxides and volatile organic compounds (VOCs).

Traffic volumes, and therefore the related environmental impacts, are increasing worldwide. This trend is set to continue as China and India become increasingly motorised. In Europe, specific car CO₂ emissions (per kilometre travelled) have fallen from an average of 185 g/km to around 160 g/km since 1995. Due to the increase in traffic volumes over the same period, however, this has not been enough to halt the upward trend in absolute CO₂ emissions. Transport is responsible for the largest sector increase in greenhouse gas emissions (around 25% between 1990 and 2004), while emissions from other sectors such as energy utilities and industry have fallen.

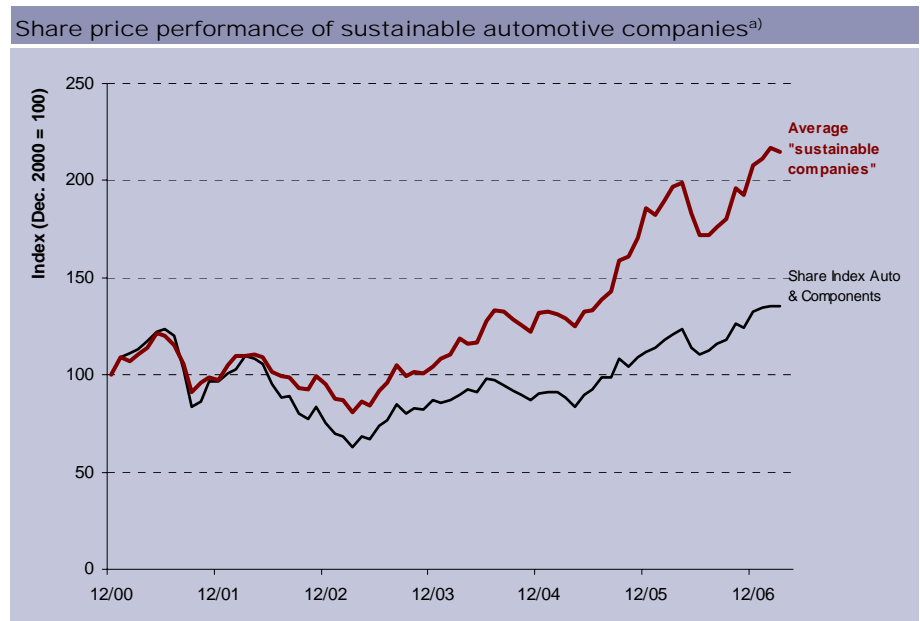


a) CO₂ emissions per kilometre (in grams); average for all manufacturers in Europe over time (solid line) and average for individual manufacturers in Europe in 2005 (Source: European T&E)

Road traffic, and hence the automotive industry, is thus a major barrier to meeting the EU's climate targets. These provide for a 20% reduction in greenhouse gas emissions relative to 1990 levels by 2020. In February 2007, the EU Commission therefore set a binding target requiring average car CO₂

emissions to be reduced to 130 g/km by 2012. This is in addition to the stricter limits already decided for particulates and nitrous oxides.

The stricter legal requirements have considerable repercussions for car manufacturers, as they necessitate technical improvements such as increases in engine efficiency, alternative drive systems and fuels (e.g. hybrid systems using both electric motors and internal combustion engines, hydrogen, biofuels), and reductions in weight. However, manufacturers may also need to overhaul their model range with an eye towards smaller engines and vehicles. This all results in higher costs. According to estimates,³ the cost of meeting the EU targets may be between 20% and 90% of annual operating profit depending on the manufacturer and the requirements specific to its vehicles. Although different requirements for different vehicles have not yet been put in place in order to meet the EU targets, it is expected that manufacturers of larger cars such as Daimler-Chrysler and BMW, whose emissions are well above average (see chart above), will generally have to do more.



a) Weighted average of the automotive and component manufacturers currently eligible for investment based on their sustainability rating within the Sarasin Sustainability Matrix (Toyota, Aisin Seiki, Denso, Johnson Controls, Michelin) compared with the MSCI World sector index Autos & Components; Source: Thomson Financial/MSCI, own calculations

Due to the relationships described, our sustainability analysis of the automotive industry focuses on the environmental impacts of the vehicles. The key criteria in this analysis are as follows:

- ◆ current CO₂ emission factors (g/km) of the vehicle fleets;
- ◆ measures to reduce nitrous oxide and particulate emissions and the reductions achieved;

3) Société Générale Equity Research: Auto & Pollution; April 2007

- ◆ the development and use of environmentally friendly and efficient drive technologies (hybrid, fuel cells, hydrogen, biofuels).

Companies successful in these areas are more likely to master the restrictions and business risks resulting from the climate debate and to take advantage of the market opportunities resulting from the need for cleaner technologies. This has certainly contributed to the above-average share price performance of these companies over the last six years (see chart above).

Risks from environmentally harmful products in other industries

Environmental policy restrictions affecting manufacturers of environmentally harmful products are in place or looming in a number of other industries as well:

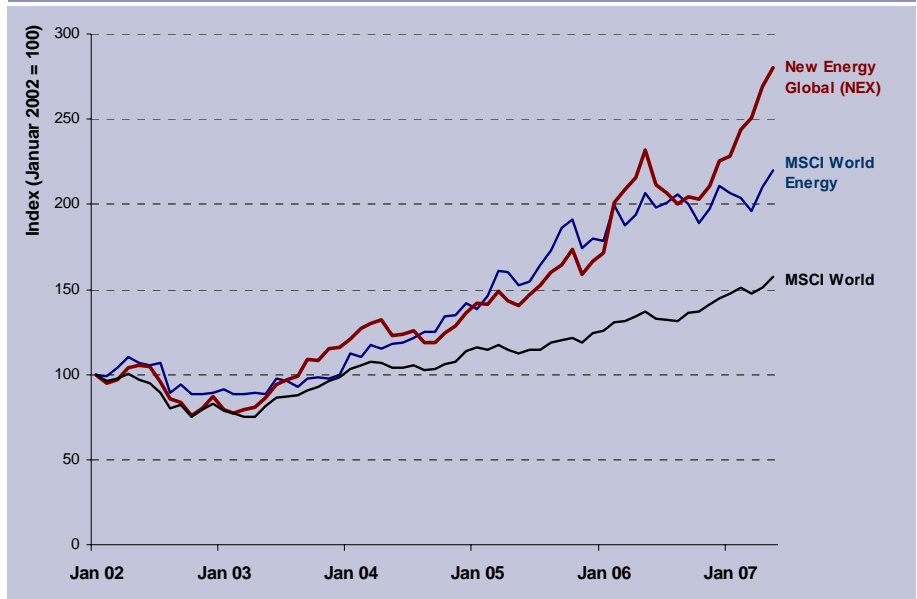
- ◆ In the coming years, the chemical industry and users of chemicals will be affected by the EU's REACH Directive, under which a number of chemicals that have been placed on the market but not yet tested under the current authorisation procedure must now be tested to determine their impact on human health and the environment (in stages over eleven years from June 2008 onwards). The test results may require companies to withdraw substances from the market, causing them to incur expense and lose sales. The tests themselves are also expected to result in considerable costs (EUR 3 to 5 billion in total, according to the EU).
- ◆ Manufacturers of electrical appliances (e.g. refrigerators, air-conditioning systems, copiers) are affected by the energy efficiency standards program introduced in Japan, which requires a product's energy consumption to meet a target value based on the most energy-efficient product available on the market. Any company failing to meet this target value after a certain transitional period receives a public warning and possibly a penalty. The EU is also considering introducing such a standards programme.

Opportunities arising from environmentally friendly products: renewable energies

The risks for manufacturers of environmentally harmful products are balanced by the opportunities for companies offering solutions to reduce the environmental impacts. Renewable energies, for example, are among those to profit from the world's long-term energy problems, i.e. energy supply, climate change and harmful emissions. In recent years, suppliers of renewable power generation technologies have experienced a boom that is set to continue over the medium term. Average annual growth rates in the markets for wind turbines and solar cells are 20% and 40% respectively. As a result, shares in companies active in new energies (see chart below) not only outperformed the general equity market (MSCI World) but also topped the average performance from energy stocks (MSCI World Energy).

Our sustainability analysis takes account of the development and use of renewable energy technologies (e.g. solar cells, biomass power plants) or products using renewable energies (e.g. biomass-fuelled heating systems, solar-powered lighting) in assessing the criterion "renewable resources".

Comparative illustration of the share price performance of new energies



New Energy Global Index: The Wilderhill New Energy Global Innovation Index is comprised of companies worldwide whose technologies and services focus on the generation and use of cleaner energies, energy efficiency and renewable energies; all figures in USD; Source: Thomson Financial

Production: opportunities arising from eco-efficiency

Reducing the environmental impacts of **production** (primarily air pollution control, wastewater treatment and waste disposal) was what environmental protection has been traditionally about. In recent years, climate protection has emerged as an additional requirement. The sectors where production has a significant impact on the environment primarily include the primary industries (chemicals, metals, pulp and paper, cement, etc.) and energy producers.

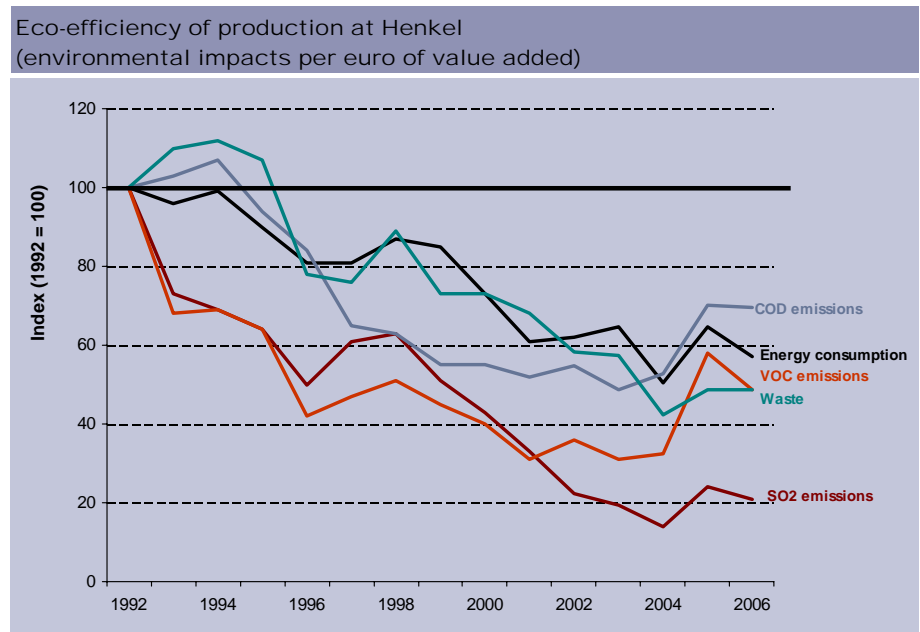
The basic criterion applied in our sustainability analysis of production is **eco-efficiency**: improving economic output while at the same time stabilising or reducing the environmental impacts, i.e. reducing the environmental impacts per unit of economic output (e.g. per Euro of value added).⁴ The following chart takes detergent and consumer goods producer Henkel as an example: since 1992, the environmental impacts per Euro of value added have been reduced by between roughly 30% (wastewater emissions measured as chemical oxygen demand (COD)) and 80% (SO₂ emissions).⁵

Increases in eco-efficiency are often accompanied by improvements in production efficiency overall and therefore in production costs. Energy consumption is a particularly good example. At energy utilities and in the primary industries, energy costs represent a large proportion of the overall costs. For example, fuel costs represent more than 50% of the cost of power generation at a coal-fired power plant and more than 70% at a gas-fired combined-cycle power plant⁶. Energy efficiency can be increased through innovations in power plant

4) Particularly at fast-growing companies, this may be accompanied by an increase in absolute environmental impacts (e.g. emissions per annum).
 5) Some values have risen in recent years (particularly COD and VOC) due to the acquisition of companies where eco-efficiency is relatively low.
 6) Source: HSBC

technology or combined heat and power generation, thereby reducing costs. For example, the efficiency of the new generation of coal-fired power plants is more than 15 percentage points higher than that of older coal-fired power plants such as those still in operation in China and Russia (over 40% compared with under 25%). This increase reduces fuel costs by almost 40%, which in turn reduces overall costs by more than 20%.⁷

In the chemical industry, energy costs represent around 10% of the companies' overall costs on average, and in bulk chemicals as much as 40%.⁸ In the paper and pulp sector and the iron and steel industry, they account for more than 10% of overall costs.



Source: Henkel (environmental and financial reports)

Pre-production phase: supply chain management

Efforts to reduce the environmental impacts of the **pre-production phase** are closely linked to product development (see above). They focus primarily on replacing raw materials with alternatives that can be produced with less of an impact on the environment as well as on relations with suppliers and therefore on the relevant social criteria (see below).

Social criteria

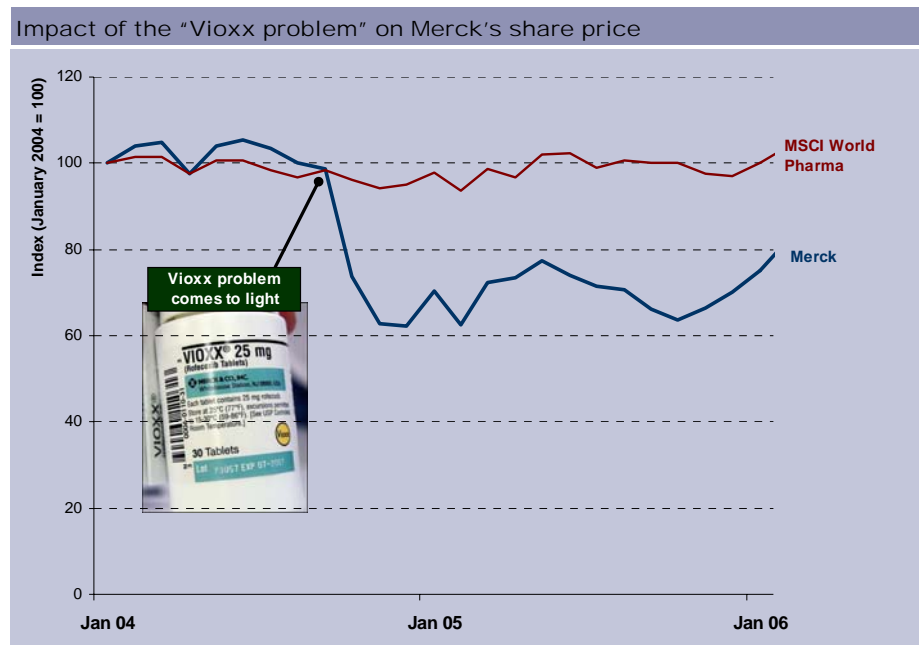
The social component of the company rating assesses the extent to which the company takes into consideration the interests of its stakeholders with respect to the four central social themes of health, participation, distribution of wealth and knowledge and the extent to which it avoids conflicts in these areas (see above).

7) In practice, the impact on overall costs is smaller, as the increase in efficiency requires more plant technology and therefore higher investment.
8) Source: BASF

Customers: health/product safety as a risk

From a business perspective, **customers** (customer satisfaction, customer benefits, product quality, etc.) are a key stakeholder group for all companies. However, some sectors are exposed to particular risks in this regard because the products have a direct impact on the customers' health. This is particularly true of the pharmaceutical and food industries.

Problems with side effects or the products' tolerability have regularly had significant financial repercussions for pharmaceutical companies. Examples include the events surrounding the painkiller Vioxx, which was withdrawn from the global market by its manufacturer Merck in September 2004 after it emerged that Vioxx may have severe side effects (heart attacks). Merck was confronted with more than 4,000 lawsuits as a result. Its share price dropped by around 40% between the case coming to light and the end of 2005 due to the substantial claims for damages (the market index dropped by less than 10% over the same period; see chart below).



a) Source: Thomson Financial

In recent years, the food industry has regularly had to cope with scandals such as rotten meat, BSE, fowl plague or bird flu, contaminants and inappropriate livestock farming methods. These have resulted, among other things, in falling sales and legal measures, with financial repercussions for the companies concerned. Obesity has also become an important issue for the industry in recent years: in the USA, around two thirds of adults and 30% of children are obese or overweight. In Europe, the situation is slightly better but deteriorating all the time. As a result, politicians increasingly see the need for action. Measures such as restrictions on advertising, warnings on high-fat products and the ban on soft drinks machines in schools (some US states, France) have already been discussed and in some cases implemented. Companies such as McDonald's and other fast-food chains have already been confronted with class actions over adverse health effects. They also face campaigns by consumer protection organisations, which pose a risk to their reputation.

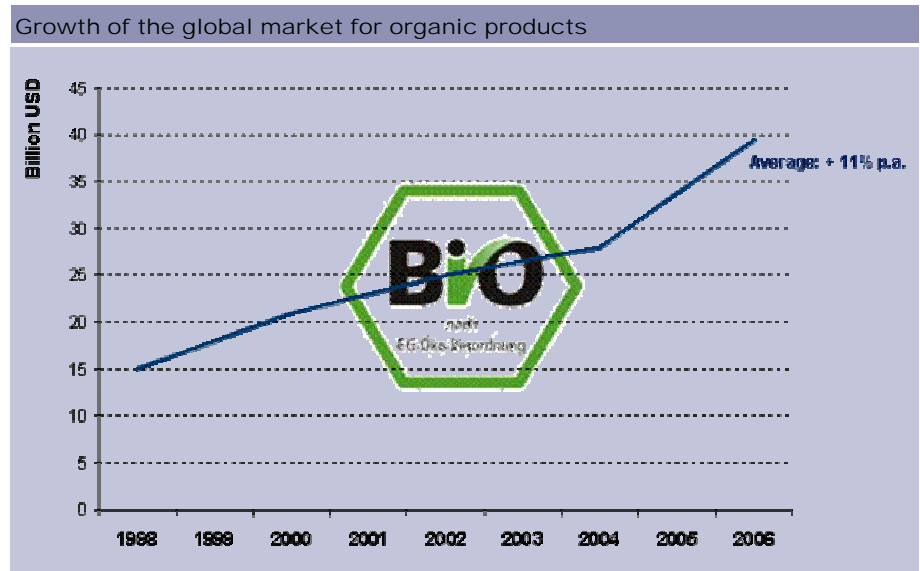
In recent years, there has been a general increase in high-profile compensation cases related to products. Asbestos, which 30 years ago was widely used for fire protection purposes and later identified as a carcinogen, has even bankrupted some companies and placed a financial burden on others for years to come.

As well as assessing related claims, quality problems and product recalls, our **sustainability analysis** also takes into consideration the presence of an effective quality management system and measures to prevent health risks. The latter include measures whereby companies voluntarily drop substances and products that are potentially harmful to health and the environment, impose their own restrictions when advertising products that pose health risks and implement consumer information campaigns promoting healthy eating.

Customers: health as an opportunity

Given the health risks, there are increasing market opportunities for companies that systematically back “healthy” products. Among consumers, there is an increasing demand for alternative (herbal or homeopathic) remedies and organic foods.

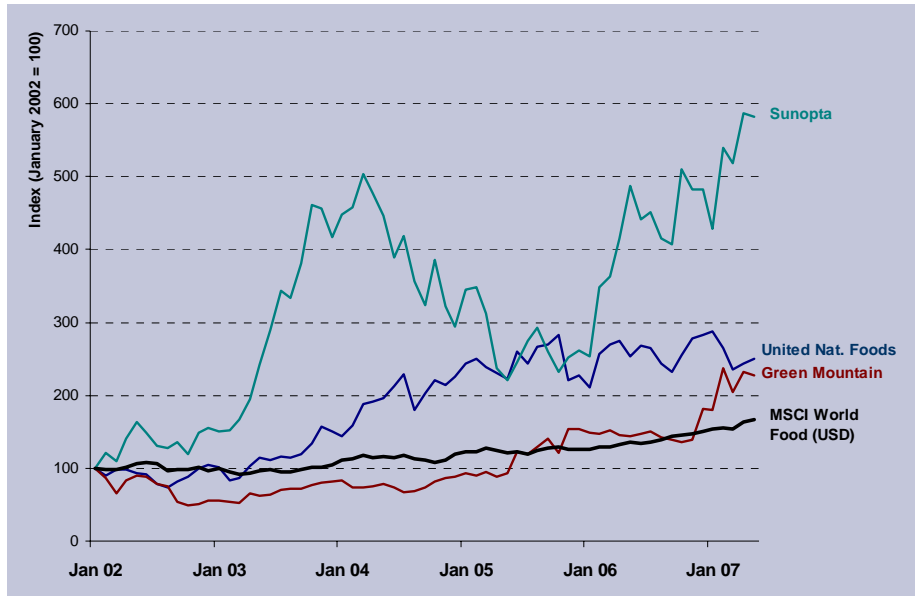
Although these are still niche markets, they are experiencing above-average growth. The global market for organic foods, for example, has almost doubled in volume over the last five years (see chart), boosting shares in companies specialising in such products (see chart below). In view of the excellent market opportunities, large food groups such as Nestlé and Unilever and retail chains such as Wal-Mart, German group Lidl and UK group Tesco are increasingly moving into this market segment or expanding their organic ranges.



Source: Citigroup, Organic Monitor

The proportion of organic foods and other “healthy” product lines within the range is an important criterion in our **sustainability analysis** of food and retail companies. It applies with regard to both “customers” and “suppliers”, as the concept of organic products extends far beyond consumer health to environmental and social standards in production (agriculture, processing).

Share price performance of selected organic food producers



Source: Thomson Financial/MSCI (prices in USD)

General public: risks from major projects and country risks

Some sectors such as the construction industry and engineering carry out **major projects** with sometimes far-reaching economic, environmental and social consequences. Large dam projects such as the Three Gorges Dam recently completed in China and several major projects in Turkey mean considerable change for the local population, partly because they require resettlement measures (stakeholder “general public”).

NGO protests against large dam projects



Source: International River Network, www.nadir.org

If the companies undertaking such projects fail to give adequate consideration to the interests of the local population, the outcome may be resistance among local population groups, publicity campaigns by international NGOs, local authorities blocking the project and international organisations such as the World Bank withdrawing the financing. Due to the scale of the projects, such delays can have considerable financial consequences. Our sustainability analysis therefore takes a negative view of any involvement in controversial major projects and a positive view of measures to involve the local population, NGOs and local authorities in the planning process

Such projects pose further risks in that they are often undertaken in **unstable countries** experiencing political and social conflicts. Companies operating in these countries can fuel the conflicts both by making legal payments and through corruption, as the payments usually benefit only small sections of the population or specific groups. When they break out, conflicts obviously bring considerable risks for the companies. Companies' activities in countries with repressive and corrupt regimes have recently attracted increasing criticism from investors as well. The Sudan Divestment Task Force, which is supported by several large US pension funds and other institutional investors, opposes investment in companies operating in Sudan, particularly those involved in major infrastructure projects. Several prominent companies such as ABB and Siemens have already announced their withdrawal from Sudan.

The **sustainability analysis** assesses the extent of companies' activities in these "critical countries", the extent to which major projects meet international environmental and social standards and the extent of anti-corruption rules and measures in place.

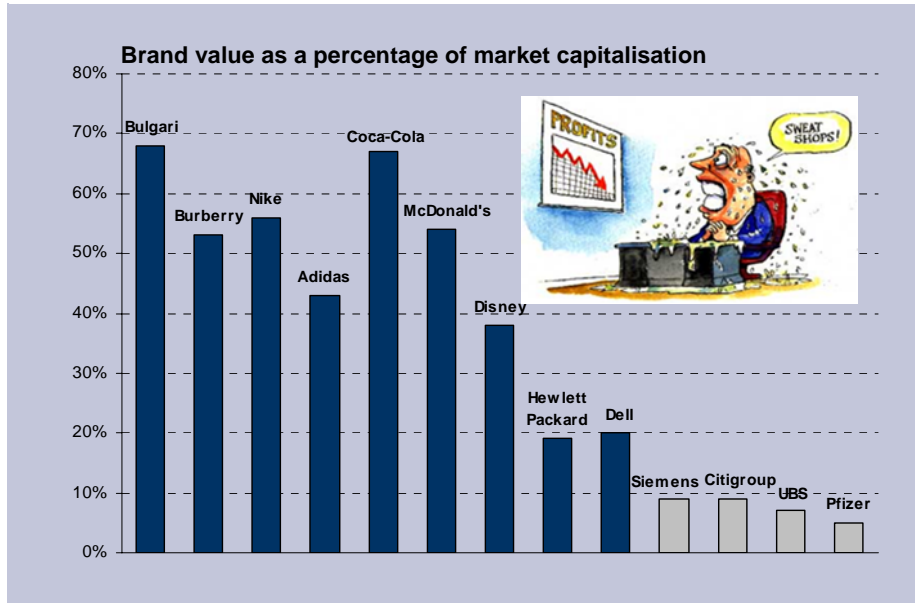
Suppliers: reputation risks from globalisation

Relocating production activities to developing and emerging countries (globalisation) is an important social challenge, particularly for companies in the consumer goods industry. **Working conditions** at their suppliers' facilities (working hours, wages, trade union activities, health and safety, etc.) often fall short of international standards. One of the central problems is that in China, the main production location, basic workers' rights (trade union freedom) are not respected.

Our **sustainability analysis** of the companies in question assesses the extent to which they have suppliers in countries with low social standards, whether there is any information on unsatisfactory working conditions at these facilities and the extent to which the companies have established minimum social requirements for their suppliers and taken measures to ensure compliance with these requirements.

For several years now, various activist groups have been uncovering and criticising poor working conditions and child labour. In the textiles and sports equipment industry, for example, there has been a steady stream of campaigns over the last few years, most recently during the Olympic Games and the Football World Cup. These pose considerable risks to the **reputation** of product brands owned by manufacturers such as Adidas and Nike. In contrast to the situation in less consumer-oriented industries, the reputation of the product brands is a key economic factor for many consumer goods companies, as it determines their enterprise value – in some cases accounting for more than 50% (see chart). The companies in question have therefore established environmental and social requirements for their suppliers and launched large-scale audit programmes to monitor compliance with these requirements.

Consumer goods industry is vulnerable to reputation risks



Source: Bank Sarasin, based on Business Week (brand values for 2006) and Thomson Financial (market capitalisation as of November 2006)

Like the sports equipment and garments industry, the computer and electronics industry has also been the subject of criticism in recent years, as it too has relocated production to emerging countries. This – and the fact that many original equipment manufacturers work with the same suppliers – prompted an industry initiative to introduce the Electronics Industry Code of Conduct, a joint platform for implementing minimum social standards at the suppliers’ facilities.

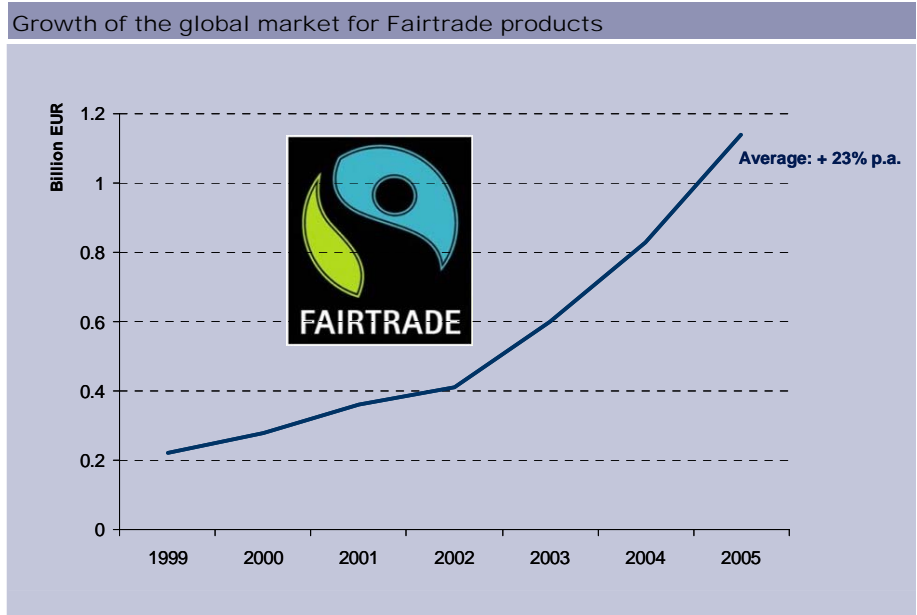
Ultimately, the companies’ efforts to monitor and improve working conditions along the supply chain have so far had only limited effect, firstly due to the complexity of the supply chains, which comprise a number of suppliers and sub-contractors, and secondly due to the fact that the financial objectives of the companies’ purchasing departments (cost reductions, fast delivery, etc.) are often not in tune with the social objectives. As a result, the common “command and control” model is increasingly said to be failing. Instead of monitoring minimum standards, companies are showing an increasing preference for cooperation as a way of improving working conditions along the supply chain and thus preventing risks to their reputation. In a longer-term process, they actively support and advise their suppliers as they set about improving working conditions. A company can also avoid reputation risks by changing its production and business models such that it does not exert extreme pressure on costs and become reliant on low-wage countries.

Electronics Industry Code of Conduct	
Topics	Requirements placed on suppliers
Working conditions:	no forced labour, child labour or discrimination; maximum working hours (60 hours per week); wages (legal minimum, overtime pay); freedom of association and co-determination
Health and safety:	measures to control exposure to health and safety risks in the workplace (e.g. safety equipment around machinery, measures to prevent overexposure to physically demanding tasks and exposure to harmful substances); emergency procedures; hygiene in communal areas (dormitories, canteens)
Environmental protection:	compliance with legal requirements; measures to ensure safe handling of hazardous substances; wastewater, solid waste and air emissions to be treated appropriately; hazardous materials in products to be reduced
Management systems:	social responsibility statement; targets and plans for implementation of the code; clearly identified company representatives responsible for management systems; risk management; communication, training and worker participation; audits and corrective action process

Source: EICC

Suppliers:
opportunities arising from
Fairtrade

Integrating environmental and social objectives into their purchasing strategies enables companies not only to avoid risks but also to take advantage of business opportunities. Fairtrade is one example of a model that applies these objectives consistently. The Fairtrade labels indicate certain benefits for producers in emerging countries and appear on items such as food and clothing. Although Fairtrade products are currently a niche market, growth in this market is very strong (see chart) due to heightened consumer sensitivity with regard to the origins of products. Like organic products, Fairtrade products have also been introduced onto the shelves by the larger food groups and retail chains.



Source: Fairtrade Labelling Organisation

Employees:
human capital as a component
of enterprise value

For many companies, the most important social issue is good labour relations. "Our employees are our most important asset" is an often-heard statement. After all, human capital, i.e. employees' technical and management expertise, motivation, commitment and loyalty, is an important component of a company's enterprise or shareholder value.

The **sustainability analysis** examines a variety of employee-related issues ranging from

- ◆ health and safety (measures to reduce work accidents and occupational illness: criterion "health"),
- ◆ job creation and workforce downsizing (criterion: "distribution of wealth"),
- ◆ wages, salaries and additional benefits (criterion: "distribution of wealth"),
- ◆ co-determination and cooperation with trade unions (criterion: "participation")
- ◆ through to training and professional development (criterion "knowledge").

Employees:
workforce downsizing

In the case of **workforce downsizing**, a central issue in this context, a conflict is often seen between social responsibility on the one hand and commercial viability on the other. From a short-term perspective and in the event of structural changes within the company (e.g. mergers, streamlining of business lines), such a conflict does actually occur – cost savings often require redundancies. From a sustainability perspective, it is important that the redundancies are made in a socially responsible manner, e.g. by assisting the employees affected financially and in their search for a new job.

In the event of economic downturn, stabilising the workforce is an option that makes commercial sense. The technology sector, for example, is particularly hard hit by such turbulence. The last downturn, following the bursting of the Internet bubble after the year 2000, triggered a massive wave of redundancies with some telecommunications equipment suppliers (e.g. Alcatel, Ericsson, Lucent) cutting more than 50% of their workforce. The semiconductor industry also made massive cuts in its workforce. Naturally, these restructuring programmes lead to labour unrest and consequential costs.

Some businesses such as US semiconductor company Xilinx (see box) have realised that, by adopting a more long-term approach to human resources planning aimed at stabilising the workforce and by putting in place socially responsible downsizing processes (actively involving employee representatives, introducing measures to minimise redundancies such as flexible salaries and working hours, assisting the employees affected by offering training, help in looking for a new job and severance pay), they can reduce the cost of labour unrest, demotivation, loss of expertise and staff recruitment when the economy picks up again.

Xilinx: a stable workforce in a dynamic environment

Xilinx develops programmable chips for use in a variety of electronic devices. The company operates in a notoriously cyclical environment – in a US technology industry highly cyclical and known for its hire-and-fire mentality. During the crisis that affected the technology industry after 2001, Xilinx bucked the general industry trend by maintaining its policy of not making redundancies. It was able to do this by implementing innovative measures such as pay reduction for management and part-time working models. Xilinx pursued this strategy not so much for social reasons but mainly because of the financial benefits: due to its “fab-less” business model, whereby production is fully outsourced, Xilinx is less affected on the cost side by falling sales than a semiconductor manufacturer with high fixed costs. However, it is highly dependent on its employees’ expertise and motivation. Its stable workforce strategy enabled it to maintain employee motivation despite the negative market environment, prevent the loss of expertise that would have occurred had it made redundancies and avoid the cost of rehiring and recruiting when the economy picked up again. Due to the good overall working conditions, Xilinx always ranked highly on Fortune Magazine’s list of the “100 Best Companies to Work For” between 2002 and 2005.



Employees: participation

Co-determination or employee participation is another central issue where a conflict is often seen between social and business objectives, particularly between trade union representation and a company’s freedom to act. It is important to distinguish between participation generally and co-determination as an institutionalised form where trade unions have considerable influence:

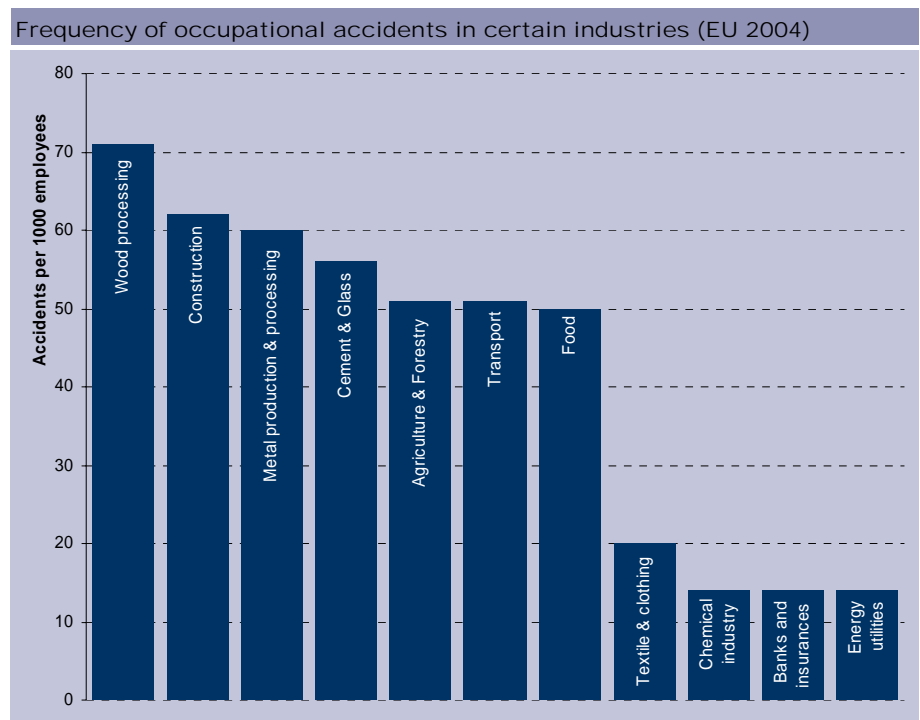
- ◆ **Co-determination** is very much dependent on and shaped by the national context: in companies in Germany, France and Scandinavia, for example, workforce representation is highly institutionalised, while in English-speaking countries, it is more likely to vary from company to company, with trade union organisation on a smaller scale.⁹ Although institutionalised workforce representation limits a company’s freedom to act, it has the advantage of balancing the interests of businesses and employees and thus contributing to “social harmony”, which in turn can boost employee motivation, productivity and loyalty. Some companies in the automotive, construction, food and telecommunications sectors, for example, have therefore entered into voluntary agreements with international trade union organisations establishing minimum standards for working conditions at all sites and in all countries. The background to this are the differences in working conditions resulting from the globalisation of their production locations.
- ◆ In contrast to co-determination, the commercial benefits of a high degree of employee **participation** at operational level are undisputed. Team work and delegated responsibility increase motivation and thus ultimately improve the

9) However, the EU is currently implementing a directive that establishes minimum requirements with regard to the existence and function of employee representatives within all businesses in the EU and is therefore contributing to strengthening the institutional co-determination model.

quality of products and operational processes overall. Employee participation is therefore a key factor in quality management, e.g. in the widespread EFQM (European Foundation for Quality Management) Excellence Model.

Employees: health

In the case of **health and safety**, a “traditional” issue in the human resources context, the relationship between social and commercial objectives is obvious: downtime due to occupational accidents increases staff costs and reduces productivity. Many companies in sectors exposed to major accident and health risks have a good health and safety management system in place and have sharply reduced the frequency of work accidents. The chemical industry, for example, which is exposed to high risks due to the use of hazardous substances, is now among the sectors where the frequency of work accidents is low (see chart). Companies can also face substantial claims for damages as a result of occupational illnesses. Examples include the lawsuits filed by victims of asbestos (until the 1980s, asbestos was widely used for fire protection purposes before being classed as a carcinogen) and against semiconductor manufacturers due to exposure to substances harmful to human health.



Source: Eurostat

“Good” employers deliver a better share price performance

In recent years, several studies have been carried out in order to empirically test the qualitative relationships described between good labour relations and commercial success. In the USA, a small number of studies have examined the relationship between a company’s positioning in the list of the “100 Best Companies to Work For” compiled annually for Fortune Magazine and its share price performance. All found a positive relationship between the two. For example, a study by the University of North Dakota¹⁰ found that portfolios

¹⁰⁾ Goenner, Cullen F.: Investing in Fortune’s 100 Best Companies to Work for in America, Department of Economics, University of North Dakota, 2006.

Investors: good corporate governance lowers the risks

comprising shares in the “100 Best” delivered higher risk-adjusted returns and a better performance (in the region of 10% a year) than the general equity market (S&P 500 Index) over the period of the study (1998 to 2005).

As a result of various corporate scandals in the USA (including Enron and Tyco), corporate governance has become an important issue in management and investor circles in recent years. Our **sustainability analysis** takes account of corporate governance in assessing the factors relevant to the stakeholder group “investors”. The following aspects are analysed:

- ◆ the independence of the supervisory bodies;
- ◆ shareholder rights (primarily voting rights and voting rights restrictions);
- ◆ the remuneration paid to supervisory bodies and top management;
- ◆ financial reporting (standards, auditor independence, etc.);
- ◆ defence mechanisms against takeovers.

Good corporate governance helps to reduce financial risks, for example by requiring independent and competent monitoring so that potential losses can be promptly identified and the risk of non-disclosure (e.g. in financial reporting) reduced. In recent years, various studies have examined the relationship between good corporate governance and share price performance. For example, a statistical analysis by the European Centre for Corporate Engagement, covering more than 1,000 US firms over the period 2003 to 2005,¹¹ found that better corporate governance is associated with lower systematic and firm-specific risk and a lower implied cost of equity capital (lower risk premium).

Rating system applied with the focus firmly on what’s important

The various examples show the relationships between sustainability and commercial success or share price performance.

Sustainability has a positive impact on financial performance...

It is now generally accepted that such relationships do exist. In recent years, a number of studies have been published which provide proof (see table below). Thus, by selecting “sustainable” companies, the sustainability analysis contributes to a good return and lower financial risk for the investor.

11) Derwall, Jeroen; Verwijmeren, Patrick: Corporate Governance and the Cost of Equity Capital: Evidence from GMI’s Governance Rating; European Centre for Corporate Engagement Research Note 06-01; 2006.

Selection of empirical/statistical studies into the relationship between sustainability and financial performance		
Study	Content	Findings
Garz, H.; Volk, C.: What really counts. The materiality of extra-financial factors; WestLB study 2007	Regression analysis of the relationship between various sustainability criteria (underlying data: Siri Group) and financial indicators; European companies, 2000 – 2005	Sustainability indicators have a significant impact on financial risk (volatility)
Kempf, A.; Osthoff, P.: The Effect of Socially Responsible Investing on Financial Performance; Centre for Financial Research; University of Cologne; 2005/6	Analysis of the impact of various sustainability criteria (underlying data: KLD) on the performance of a synthetic share portfolio using a multi-factor financial model; US companies 1992 – 2004	Performance of companies with a positive sustainability rating is not reduced; performance of companies with a negative sustainability rating is reduced
Schröder, M.: Is there a Difference? The Performance Characteristics of SRI Equity Indexes; Centre for European Economic Research (ZEW) Discussion Paper No. 05-50, Mannheim 2005	Analysis of the performance of 29 sustainability indices using various financial models	Sustainability indices do not underperform benchmark/market (but do not outperform either)
Derwall, D.; Guenster, N.; Bauer, R.; Koedijk, K.: The Eco-Efficiency Premium Puzzle; Financial Analysts Journal; Vol. 61; No. 2; 2005	Analysis of the impact of various environmental criteria (underlying data: Innovest) on the performance of a synthetic share portfolio using various financial model; US companies 1995 – 2003	Substantially higher average return on the portfolio comprising shares with a positive sustainability rating compared with a portfolio of shares with a negative sustainability rating
Orlitzky, M.; Schmidt, F.; Rynes, S.: Corporate Social and Financial Performance: A Meta-analysis; Organization Studies; Vol. 24; No. 3; 2003	Meta study: analysis of the results of 52 studies into the relationship between sustainability and financial performance	Studies tend to find sustainability has a positive impact on financial performance; however, result also depends on how sustainability is measured
Innovest: Corporate Environmental Governance; study for the Environment Agency (UK); 2004	Meta study: analysis of the results of 60 studies into the relationship between sustainability and financial performance	70-80% of the studies find that there is a positive relationship between environmental and financial performance
Bank Sarasin, Centre for European Economic Research (ZEW), European Business School: Share price performance and sustainability, Sarasin study 2002	Analysis of the relationship between sustainability ratings (underlying data: Bank Sarasin) and share performance using two financial models; European companies, 1996 – 2001	Sustainability rating does not have a negative impact on financial performance; industry's environmental rating has a positive impact on performance

... but the approach used is key

However, the extent to which this is the case depends on the quality of the rating system and whether it provides meaningful measures of sustainability. There is increasing evidence to suggest that less is more on this occasion. The rating systems used by most rating agencies and providers of sustainable investments have so far been designed to cover as broad a spectrum of sustainability issues as possible. The disadvantage of these very inclusive criteria matrices is that a company's overall rating fails to reflect the particularly important sustainability aspects, as these become obscured among the large number of aspects under analysis.

Focusing on the important aspects improves quality

As explained, Sarasin uses a standard rating matrix for all industries. This standard matrix has, however, been systematically focused on the environmental and social criteria most relevant to the industry in question and “thinned out” by reducing the number of criteria. As a result, a company’s overall rating reflects its performance on the environmental and social issues important within its industry and thus the impact of its performance on the financial results.

This industry-specific rating matrix is developed by drawing on the analysis of the industry-specific environmental and social factors carried out as part of our industry rating and on our sustainability analysts’ extensive industry knowledge.

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