



SARASIN

Automotive: An industry powers ahead

Sustainability report:
Key themes and company ratings

September 2009

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Sustainability ratings for car manufacturers – Toyota and Peugeot lead the field

The monumental auto industry has been through some turbulent times: cut-throat price wars in saturated markets, last year’s oil price shock and increasingly clear signals that climate protection will not stop at the gates of personal motorised transport. And the future looks no less turbulent. Companies are having to place risky bets on which technology will win the battle to power the vehicles of the future, even though the funds they have available for investment have been heavily depleted. To what extent is the world’s biggest industry equipped for this radical transformation? Bank Sarasin has produced a sustainability rating for the automotive industry for many years now. The analysis focuses on the environmental profile or eco-efficiency of vehicles. And which manufacturers lead the field is of particular interest in the current market environment.

Japanese and french leadership, broad midfield

Toyota and Peugeot have managed to retain the lead in this year’s sustainability ratings, despite losing points (see Figure 1). Honda has improved a lot. In the mid-field, Volkswagen leads the rankings, followed by the other German car manufacturers and then Renault (downgraded) and Ford (upgraded). Fiat’s ranking is lower than last year and its rating is below average, as is that of Nissan and General Motors.

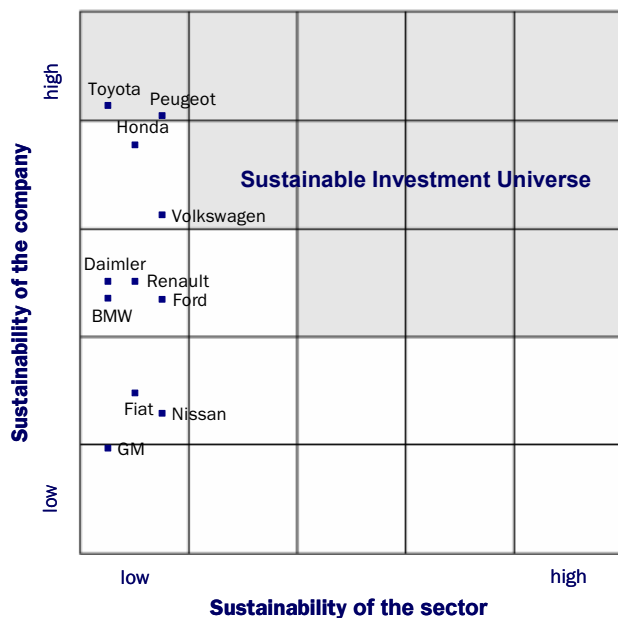
We only invest in the highest rated companies

Bank Sarasin’s sustainability rating supplements the classic financial analysis and identifies environmental and social risks as well as corresponding opportunities. A two-dimensional approach is used here. Alongside the comparison of individual companies within an industry, the sustainability risks of the industry as a whole are also assessed. For high-risk sectors of the economy such as chemicals, oil and gas, or indeed the car industry, the barriers to entry into the sustainable investment universe are correspondingly higher. Here, we only invest in the best.

High-risk industry

The most significant sustainability risks in the automotive industry are vehicle emissions. Traffic already accounts for around 20 percent of the world’s greenhouse gas

Figure 1: Sustainability of car manufacturers in Bank Sarasin’s analysis



Source: Bank Sarasin, September 2009

emissions, and is therefore a significant contributor to global warming. This trend is set to continue with increasing car use in China and India, where there are currently only 10-15 vehicles per 1000 inhabitants. In

addition to greenhouse gases, local air pollutants such as particulates and the nitrous oxides which produce ozone and smog represent an additional risk factor. They entail considerable health risks, particularly in built-up areas. Social risks include the massive relocation of jobs to low-wage countries, which puts pressure on industrial relations in the highly unionised production facilities in the traditional manufacturing nations. There is also the large number of road traffic accidents to consider.

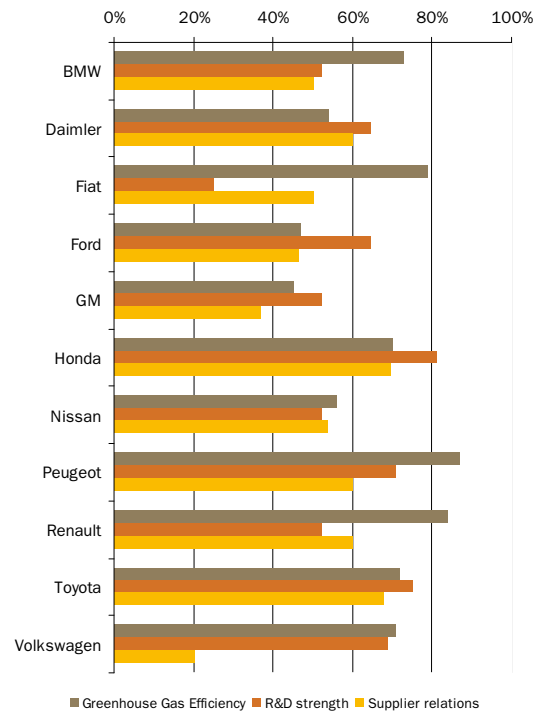
Three key rating criteria

When rating the sustainability performance of car manufacturers, Bank Sarasin concentrates on three key criteria: the CO₂ emissions of the current vehicle fleet, the capacity to develop low-emission, leading-edge technologies and – given the increasing outsourcing of key components – the sustainability of relationships with suppliers. In addition there are criteria such as the quality of labour relations in the light of ongoing restructuring, or the performance of the company in relevant studies on vehicle quality and customer satisfaction.

Environmental profile across the fleet – new emission limits as targets

There are two ways of measuring the extent to which a manufacturer includes environmentally efficient vehicles in its range. One is whether an above-average number of their models achieve top scores in the important recommended lists for environmental vehicles. However, more significant is a consideration of the entire vehicle fleet, because here the new emission limits in the EU and the USA come into play, that is, how much CO₂ the cars sold by a manufacturer emit on average. Bank Sarasin assesses how far the manufacturers are from meeting the future target values and also compares values across the global fleets. The American manufacturers, Daimler and Nissan are facing the biggest challenge in this regard (see Figure 2).

Figure 2: Key criteria for sustainability ratings: a comparison of manufacturers (as a percentage of maximum score)



Source: Bank Sarasin, September 2009

Strength in leading-edge technologies – a race for the future

Which manufacturers have a research and development portfolio that best equips them for the challenges of the future – i.e. the production of low-emission vehicles? In Bank Sarasin’s opinion, Honda and Toyota – but also Peugeot, Volkswagen, Daimler and Ford – are in the strongest position here, as they are active in the dominant technologies. Electric vehicles or the use of fuel cells are, however, still not yet of immediate significance. For this reason we have evaluated the technology portfolios three times over: short, medium and long term. This analysis shows that the Japanese manufacturers are more long-term oriented.

Sustainable supplier relationships – a key factor in competitiveness

With increased outsourcing of important components, maintaining sustainable relationships with key suppliers has become a central competitiveness factor. This applies even more in an environment in which access to superior technologies is becoming ever more important. Our evaluation is based on supplier satisfaction indices and again reveals the superiority of the two large Japanese corporations. By comparison, Volkswagen

performs very badly and, in the case of the French manufacturers and BMW, supplier relationships have come under intense pressure. However, Ford demonstrates that traditionally poor relations can also be improved. The electrification of the power train has also given rise to a large number of new partnerships and joint ventures. Hopefully the industry will also place importance on more sustainable working relationships in these leading-edge technologies.

Environmental profile across the fleet – new emission limits are the goal

After decades of relatively lax environmental standards, the greenhouse gas emission limits for new vehicles are becoming tighter both in Europe and – under the Obama administration – across the pond. Even China is developing tougher standards. The new requirements will affect manufacturers in very different ways. Bank Sarasin assesses how far the manufacturers are from meeting the future targets. The focus is on the two core markets of the EU and the USA.

Climate policy hits the world of transport

The automotive industry has been left untouched by climate policy for a long time. But now new emission thresholds, which for the first time are binding in the EU, have been set for new vehicles for the next five to ten years. The USA has recently begun to follow the EU's lead (see Figure 4). China is considering an 18% reduction in permitted emissions by 2015. When assessing the sustainability of car manufacturers, the vehicle emissions of their fleets and how far they are from meeting the upcoming legal limits are therefore a key consideration. Interestingly, the manufacturers have for years withheld this data from their reports. The data has to be obtained from the relevant authorities or from environmental organisations such as the Brussels-based Transport & Environment, with estimates completing the picture. Sustainable investors have been complaining about this unsatisfactory state of affairs for over five years.

US and German manufacturers, along with Nissan, face the toughest challenge

The most recent data (Figure 3) shows that the American manufacturers and Daimler have the most ground to make up. They will have to almost halve the average emissions of their vehicle fleet in the USA.¹ The large Japanese carmakers are in the lead in the USA, while in Europe they are mid-table. Peugeot, Renault and BMW

are closest to meeting the European targets. Because Peugeot and Renault have no significant vehicle sales in the USA, they do not have to meet any targets there.

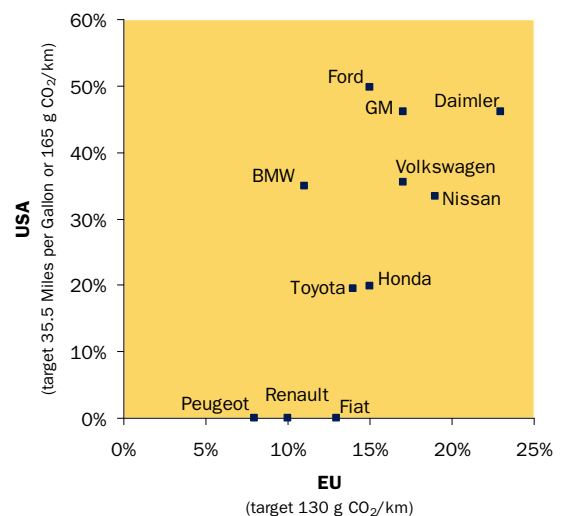


Figure 3: Gap between manufacturers' current emission levels and the new greenhouse gas emission limits (as a percentage of current fleet average)

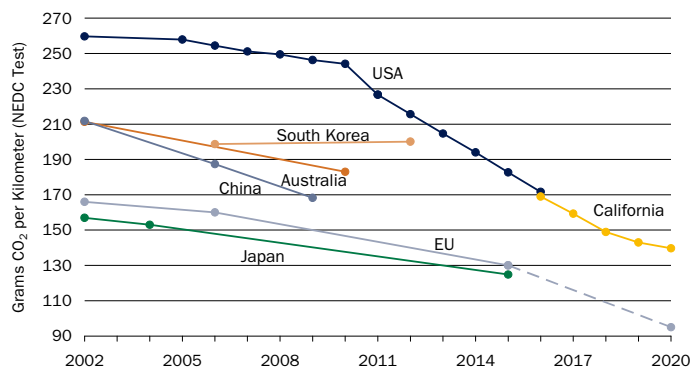
Sources: Environment Protection Agency (USA), September 2008; Transport & Environment (EU), September 2009

¹ In the case of the USA, the analysis does not consider the fact that the targets are defined individually for each manufacturer (as in the EU). The composition of the fleet by various weight classes is the determining factor.

Japanese manufacturers and BMW make the most progress

An analysis of the degree to which manufacturers have improved the fuel efficiency or emission levels of their vehicles over the years reveals a particularly strong performance by the Japanese companies over previous years. While the pace of their improvements has slowed down recently BMW has made remarkable progress (16 percent improvement since 2006). Ford has gained ground as well, having improved by 5 percent. Volkswagen has shown an average performance. The French manufacturers, Fiat and GM couldn't make much headway anymore.

Figure 4: International comparison of CO₂ emission limits for new vehicles up to 2020



Sources: International Council on Clean Transportation, May 2009; Innovation Center for Energy and Transportation, May 2009

USA: unfavourable climate for fuel efficiency

An international comparison of the important environmental requirements underlines the fact that the emission limits are indeed being tightened in all key markets. But there are still important differences, both in the limits themselves and also in the level of government fuel duty. For these reasons, there will still be little incentive in the USA to develop greener car models. In the EU and Japan, on the other hand, the general parameters are more forward-looking. As well as having the world's strictest emission limits, fuel prices are also high in these regions. The traditionally very defensive and conservative car industry would do well to gear itself

more towards markets with more progressive environmental protection requirements. These are the markets of the future.

Many more measures in store to influence behaviour

In addition to emission limits, there are other instruments that can be used to influence the environmental profile of a vehicle fleet. Company cars are a good example. In some countries, such as Germany, over 50 percent of new cars are sold as company cars. Fuel efficiency is generally of little consequence, because the car drivers either do not bear the operating costs themselves, or can offset them against tax. In this respect the UK has for many years followed a different path. There, company cars used for private purposes must be taxed as if they were income. More environmentally friendly cars are taxed at a greatly discounted rate, leading to a noticeable change in market behaviour. Japan and China have positive experiences with low sales taxes for environmentally efficient vehicles. In China the sales tax can be as high as 40% for sports utility vehicles. Then there are parking fees and road tolls in cities, from which electric vehicles are often exempt. The range of measures to influence behaviour is therefore quite broad, and car manufacturers should take this into account going forward.

Strength in new technologies – a race for the future

Along with the new challenges, the capital-intensive race to be leader in low-emission drive technologies has intensified significantly. The positioning of each manufacturer is very different when it comes to their technology portfolios. And they are constantly adjusting their strategies: exit from hydrogen, partnerships with battery manufacturers, research into biofuels from plant residues. Bank Sarasin assesses the future viability of these technologies. Are they really more eco-efficient, or are the environmental risks simply being shifted elsewhere? And we evaluate how well-suited the manufacturers' R&D strategies are for future generations of vehicles.

New technologies already relevant in the medium term

The range of relevant technologies extends from improving the efficiency of conventional internal combustion engines through to more lightweight construction technologies, differing levels of hybridisation, electric motors and fuel cells. Then there are alternative fuels such as natural gas or biofuels. Scenarios such as McKinsey's calculate that the technological shift could already be significant in the medium term: by 2030, hybrid, plug-in hybrid and electric cars will account for around 40% of the cars on our roads.²

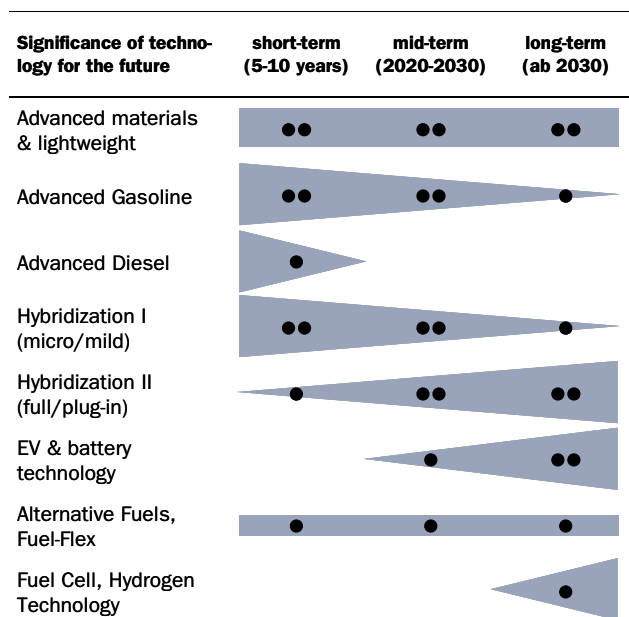
From well to wheel: a comprehensive risk assessment

How sustainable the new technologies are is shown by a comprehensive assessment of the environmental risks. These range from fuel production – what environmental problems emerge, for example, in the cultivation of corn or sugar cane, how much energy is required in the manufacture and storage of hydrogen, and whether supplying electric vehicles with renewable energy is realistic – through to operation, for example the efficiency of the engines themselves. This is significantly better in the case of electric vehicles, for example. They perform 60% better in the overall energy lifecycle analysis too – i.e. from electricity generation through to vehicle use, even with traditional electricity generation technologies.³

² McKinsey & Co. «Roads towards a low-carbon future», March 2009

³ WWF (World Wide Fund for Nature) «Plugged in», April 2008

Figure 5: Low-emission technologies and their significance for the future



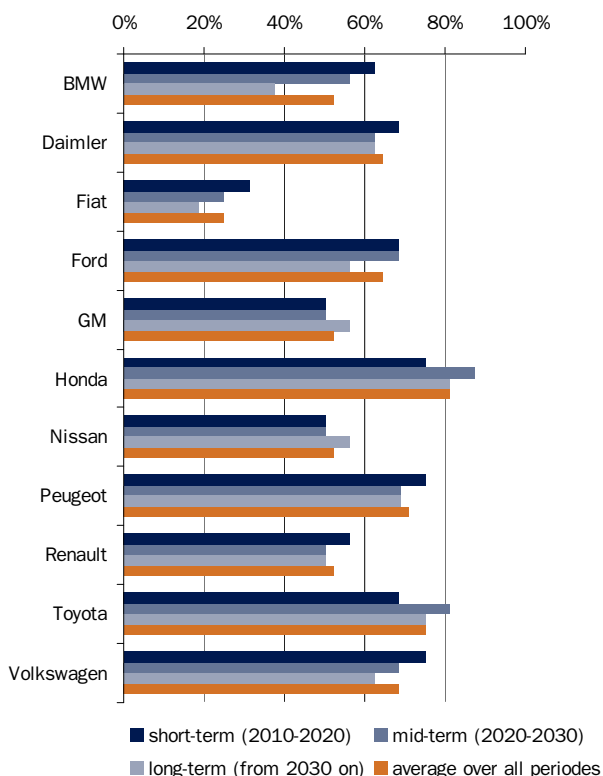
Source: Bank Sarasin analysis based on data from McKinsey & Co. «Roads towards a low-carbon future», March 2009

The testing grounds of the future are open

We anticipate a phase of technological transformation (see Figure 5): the near future will still be dominated by the combustion engine, while hybrid technology will pave the way for the electrification of the power train and innovations in the vehicle's entire energy management system. In appropriate markets such as Russia (gas) or Brazil (biofuels), and with the emergence of new

generations of crop residues, alternative fuels are also becoming more important. There are also model regions providing a testing ground for a visionary future built upon electric vehicles and decentralised solar-based production of hydrogen to power fuel cells. Honda is already carrying out tests in this area in California. Volkswagen is working on home power plant fuelled by gas.

Figure 6: Strength of R&D portfolio in low-emission technologies (as a percentage of maximum possible strength)



Sources: manufacturers' information, LBBW Workshop «The future in powertrain technology», June 2009; Cheuvreux «Green Cars», April 2009; Société Générale «Green Transport», March 2009

Japanese manufacturers take a longer-term view

Our assessment shows how strongly each manufacturer is focused on the short, medium and long term. The strength of a car manufacturer in a given technology multiplied by its importance gives the strength of the technology portfolio. Figure 6 shows the two big Japanese manufacturers in the lead, followed by

Peugeot, Volkswagen, Daimler and Ford. However, most manufacturers are still heavily biased towards short-term technologies. BMW is rather narrowly positioned in the long run. On the other hand the Japanese show a strong focus on long-term thinking.

Electricity on the march – batteries the core component

Recently the electric motor has become far more prominent. Many manufacturers have vehicles in development and some test regions are already up and running. Important markets such the USA (EUR 1.6 billion), Japan (EUR 150 million) and Germany (EUR 500 million) have allocated money to promote the development of batteries and the construction of an infrastructure for recharging them. China, too, is set to make a strong commitment in this field. It is also clear that the new technology will mix things up in the industry. BYD is a Chinese producer of batteries that has recently transformed itself into a carmaker, and many small companies are trying to launch electric vehicles onto the market. Among the big car manufacturers, Renault-Nissan's strategy concentrates most on electric vehicles. They are seeking to launch products for the mass market in a few years' time, and are strongly committed to ensuring that the necessary recharging infrastructure is available in targeted markets.

Diversification versus focus

The comprehensive advance of the French-Japanese alliance in the field of electric vehicles has met with much admiration and lent positive impetus to the industry. Nonetheless, we still base our assessments on the assumption that a broadly based R&D strategy has advantages. On the one hand it is still not sufficiently clear which technologies will win through. Furthermore, it is more probable that the coming decades will see a relatively broad technology mix, which may also differ between the various markets. In addition, manufacturers generally benefit if they work on a number of efficiency-raising fronts simultaneously. Innovations seldom emerge in a linear fashion and in accordance with a pre-planned timetable.

Sustainable supplier relationships – a crucial competitive factor

For many years now, value creation in the car industry has been shifting towards the suppliers. The German Association of the Automotive Industry estimates that by 2010 suppliers will contribute around 80% of the value-added created and 50% of the development effort. The balance of power is shifting. Given this backdrop, and in the context of the major technological challenges of the future, good relations with suppliers are a crucial competitive factor. Bank Sarasin assesses these on the basis of a supplier satisfaction index.

The race for leading-edge technologies demands strong partners

Deficiencies in quality lead again and again to costly product recalls which damage the brand. These incidents demonstrate how demanding the task of ensuring quality and innovation is in a value chain which is to a large extent outsourced. This applies even more in today's fiercely competitive environment. Achieving further efficiency increases in the combustion engine while at the same time becoming a player in new cutting-edge technologies requires strong partners.

A new balance of power and new rules of the game

As their technological expertise increases – some suppliers are now registering more patents than their customers – the balance of power is gradually shifting as well in some segments of the industry. The example of BYD, the Chinese battery manufacturer which is currently in the process of becoming a carmaker, also demonstrates how new rules of engagement are changing the shape of the industry.

Japanese manufacturers in high standing with suppliers

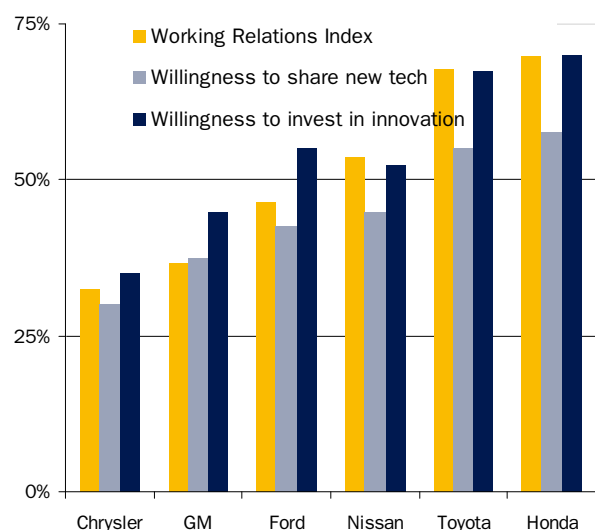
Japanese manufacturers placed great importance at a very early stage on close cooperation with suppliers and a high degree of reciprocal loyalty. Again and again, suppliers have been entrusted with strategically important development projects and in this way have been able to develop their own specialist skills. US corporations and some European carmakers have, by

contrast, attempted to exploit their power as purchasers, which over the decades has brought the supplier industry to the limits of economic viability.

Strong evidence of variation, particularly in the USA

Long-term studies confirm that sustainable supplier relations are a crucial factor in competitiveness. One example is an American index (see Figure 7), which measures the quality of working relations between the manufacturer and the supplier. In addition, the

Figure 7: Suppliers' satisfaction and willingness to cooperate with manufacturers



Source: PPI (Planning Perspectives Inc.), May 2009

willingness to offer a customer new technologies on a preferential basis was also investigated, along with the readiness to invest in innovations which might be of use to them. For many years Japanese carmakers have performed better across all indicators. However, Ford demonstrates that supplier relationships can be revitalised. Just two years ago it was still the least popular carmaker, but now it is once again achieving respectable scores both in the USA and Europe.

Supplier relationships in Europe under pressure

In one key area – fair collaboration – European car manufacturers have traditionally scored better than their US rivals when it comes to protecting intellectual

property rights. As cost pressure has increased, however, relations between French carmakers (who for a long time have performed consistently well in this area) and their suppliers have also become strained. The working relations index has dropped sharply in Germany as well, especially in the case of BMW. For some years now Volkswagen has been the least popular German manufacturer in the eyes of suppliers. Considering that both German and French carmakers are keen to become leaders in electrically powered vehicles, they will need to foster stable partnerships again.

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Basel, September 2009

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