



***The Business Case for
Implementing Sustainable Practices
to Drive Financial Performance
within the Automotive Sector***

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The Business Case for Implementing Sustainable Practices to Drive Financial Performance within the Automotive Sector

Using the automotive industry as an example, we map the connection between good management of the material environmental, social, and governance (ESG) issues identified in the SASB Standards and the resulting measurable improvements in financial performance uncovered through the NYU Stern Center for Sustainable Business' Return on Sustainability Investment (ROSI) framework.

Automotive Industry as Case for ROSI and SASB Analysis

While there is growing acknowledgement that strong corporate performance on material ESG issues can translate into improved financial returns, management teams and investors often struggle to quantify the financial benefits of individual sustainability initiatives.

To bridge this gap, the New York University Stern Center for Sustainable Business (CSB) has developed the [Return on Sustainability Investment \(ROSI\) framework](#)¹. Corporations embedding this type of analysis into decision making will be better positioned to assess the full range of costs and benefits associated with proposed sustainability activities. Investors will be able to identify where relative value exists in corporate strategies and gain a better understanding of financial performance driven by ESG strategies.

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In 2019, NYU Stern CSB completed a project with a group of automotive companies to map the key strategies and practices that companies are prioritizing to drive sustainability impact, and to unpack the tangible and intangible financial benefits accruing to these companies.

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The Sustainability Accounting Standards Board ([SASB Standards](#)) provide a framework for companies to measure, manage, and report information on the subset of sustainability matters most closely linked to financial performance and thus serve as a useful tool to

commence a ROSI analysis. For each topic identified by SASB for the automotive industry, for example, (e.g., Materials Efficiency and Recycling, Product Safety, Labor Practices, Fuel Economy and Use-Phase Emissions, and Materials Sourcing), SASB recommends the company disclose specific metrics which provide insight into performance on the measure, the strategies the company is employing, and related trends.

¹ For additional details on the ROSI methodology, refer to Appendix A

² Ulrich Atz, Tracy Van Holt, Elyse Douglas, and Tensie Whelan, June 2019, “The Return on Sustainability Investment (ROSI): Monetizing Financial Benefits of Sustainability Actions in Companies”, Review of Business: Interdisciplinary Journal on Risk and Society by St John’s University, Volume 39, Number 2; <https://www.stjohns.edu/sites/default/files/uploads/Review-of-Business-June-2019.pdf>

ROSI starts with the same key factors as the first step towards identifying underlying activities, or practices, related to each strategy, which can then be monetized. The ROSI framework analyzes how corporate sustainability practices drive internal financial benefit to companies in areas such as risk reduction, deeper supplier relationships, earned media generation, and operational efficiency. Insights from this analysis can also help companies improve their reporting and disclosure.

Overview of the NYU Stern CSB ROSI Automotive Industry Project

The automotive industry faces significant ESG challenges such as rapidly changing regulatory standards (e.g. zero emission vehicles), greenhouse gas emissions, water use and waste generation, product recalls, material sourcing challenges, and extended-producer responsibility requirements. On the opportunity side, mainstreaming sustainability can drive innovation and growth as well as reduce risk across the value chain.

To develop a ROSI framework for the automotive sector, CSB recruited companies from North America and Europe for the project and worked closely with their sustainability, finance, manufacturing, and supply chain teams.

To begin, CSB consulted the SASB Standard for the automotive sector as the framework for the initial research and interviewed auto executives to rate SASB-identified industry-specific issues on financial performance. The automotive executives agreed on the significance of all five of the SASB-identified issues: product safety, fuel economy and use-phase emissions, materials efficiency and recycling, labor practices, and materials sourcing.

Using these issues as a basis, over the course of the ROSI project, CSB identified 18 sustainability strategies and 34 corresponding benefits; 16 of the sustainability strategies, and their benefits, were monetized, prioritizing relevance to the SASB Standards, availability of company data, and potential magnitude of financial impact.

Performance on SASB-identified Issues Drives Financial Outcomes

To inform the ROSI monetization process, CSB leveraged information on the SASB-identified industry-specific issues, participating companies' data, and ROSI's five-step methodology. The following highlights the ROSI monetization process and insights based on three SASB issues. For each issue, we identified the practices implemented to manage the issue and the corresponding benefits that impacted financial performance.

SASB Issue: Product Safety

In interviews and surveys with the automotive companies, CSB found several key strategies deployed that link to the SASB issue of product safety. Namely, companies are focused on strategies to 1) minimize the number of recalls and 2) promote vehicle safety technologies and services.

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³ For additional details on the SASB Standard for the Automotive Industry, refer to Appendix B

⁴ For additional details on ROSI's five-step methodology, refer to Appendix C

Given the high cost impact of car recalls, there are significant financial benefits to investing in reducing the number of recalls. In the monetization process for one company, a reduced number of recalls resulted in a savings impact of more than \$550 million with an improved emphasis on safety, both within the company as well as with suppliers, and a capital investment of ~\$8 million. To arrive at this result, CSB looked at metrics such as average repair cost per recall, average legal & PR costs, and expenses related to increased quality control, premium redesigned parts, and additional training. About one third of the benefit was related to repair costs, while two thirds was driven by reputational issues, such as lost revenue and legal and public relations costs.

The analysis also identified innovations in company approaches to recalls that drove additional financial benefit. For one company, adopting a systems thinking approach in the manufacturing process helped reduce recalls by improving the communication amongst multiple departments and supply chain partners on the design process.

In addition, improving vehicle safety has driven innovations in optional technology features such as forward collision and lane departure warnings, blind spot detection, electronic stability control, and adaptive headlights. Because vehicles with these safety technology features sell at higher profit margins, this strategy is a significant driver of the overall benefit monetization results. Another vehicle safety-related strategy includes GPS emergency services, which also generated additional revenues for the company.

SASB Issue: Materials Efficiency & Recycling

CSB uncovered that companies are prioritizing two key strategies related to the SASB Issue of Materials Efficiency & Recycling: 1) improving waste management, and 2) reducing volatile organic compounds (VOC) emissions. For waste management, monetized benefits included revenue from selling recycled materials, savings from using recycled water, energy savings in manufacturing, reduced cost from traditional waste disposal, and savings from using recovered waste versus virgin materials. This strategy resulted in an annual earnings benefit of \$235 million for one company, with a large portion attributable to savings from using recovered waste (as opposed to virgin materials) and revenue from selling recycled materials. Additionally, research found that the success of waste management is closely tied to the implementation of a systems thinking approach for the manufacturing process. By maximizing the upside of recovering and recycling materials from end-of-life vehicles, there are significant savings that can be unlocked.

Lastly, the ROSI analysis found that a reduction in VOC emissions resulted in several benefits, such as savings from reducing / recycling solvent, savings from using substitutes for solvent, and savings from avoided solvent waste treatment costs, among others. This strategy resulted in a savings impact of ~\$90 million for one company. An additional benefit to consider is savings related to worker compensation claims, assuming the company can identify claims related to VOC emissions that pose health issues.

SASB Issue: Fuel Economy & Use-phase Emissions

CSB identified several strategies focused on the SASB issue of Fuel-Economy & Use-phase Emissions, including those focused on [electric and hybrid vehicles](#). Benefits from developing more energy-efficient vehicles included incremental sales and savings from reduced need to acquire carbon credits (especially during the manufacturing process). In addition, companies can reap financial rewards by reducing the risk of being fined for regulatory non-compliance as well as taking advantage of growing consumer interest in electric vehicles.

Overall, the research demonstrates that strategies aligned with SASB-identified issues can create financial value for companies. Although this project involved a small set of companies and focused on a sample set of strategies, CSB believes these findings are directionally accurate and prove that there is additional financial value to unlock within this sector. Similar work in other sectors such as apparel and agribusiness has uncovered similar financial benefits.

Gaps Between SASB and ROSI

While SASB's Standards cover a range of issues, the ROSI project identified some additional areas that may merit consideration, specifically innovation-related strategies. Sustainable business model transformation requires innovation, and ROSI identified that companies prioritizing innovation may see associated financial benefits. Thus, by engaging with management on innovation-focused activities, investors and other key stakeholders may be better positioned to assess whether a company is focused on future-proofing its business model.

The ROSI analysis found that the strategy 'Innovate to Provide Long-term Improved Sustainability Technologies' included a benefit of increased pricing on products with enhanced safety and sustainability features. By creating innovative products and services, companies can develop additional revenue streams while addressing sustainability issues. Additionally, disclosing innovative initiatives can encourage companies to create unique, competitive solutions that benefit the stakeholder community.

“Effectively managing and reporting on SASB topics can unlock financial value.”

Looking Ahead

Effectively managing and reporting on SASB topics can unlock financial value. For example, if automotive companies track the number of recalls, they can identify annual trends, determine financial drivers, and implement solutions to reduce recalls and drive down costs. Additionally, automotive companies can develop frameworks that prioritize sustainability-related issues based on financial impact levels to influence strategic business decisions. To accomplish this, companies must integrate effective ESG management and oversight into all levels of their company. Research on ESG credentials of corporate boards indicates that this type of skillset is often lacking, which may limit the oversight and understanding of how performance on key ESG issues can [impact financial performance](#)⁵. Companies must understand their material ESG issues, effectively manage them, and track their ROSI impact, but without meaningful board engagement, it may be difficult to gain traction.

Additionally, understanding sustainability performance for one industry can have implications for others. Automotive company initiatives, such as the development of lightweight vehicles, can create opportunities and implications for companies in other industries. For example, the SASB Chemicals Standard includes the topic of “Product Design for Use-Phase Efficiency” which asks companies

“Companies must also ensure that they're integrating effective ESG management and oversight into all levels of their company. Research on ESG credentials of corporate boards indicates that this type of skillset is often lacking, which may limit the oversight and understanding of how performance on key ESG issues can impact financial performance.”

⁵ Tensie Whelan, Boards Are Obstructing ESG — at Their Own Peril, Harvard Business Review, January 18, 2021; <https://hbr.org/2021/01/boards-are-obstructing-esg-at-their-own-peril>

to report on products which improve energy efficiency, eliminate or lower greenhouse gas emissions, reduce raw material consumption, increase product longevity, and/or reduce water consumption. One activity which falls under this definition is ‘materials that enable vehicle lightweighting.’

Conclusion

By reporting on their sustainability work through the lens of ROSI and SASB, companies can communicate more concrete, decision-useful information to investors. By focusing on SASB-identified issues and demonstrating how performance on these issues is yielding financial results, investors gain a more complete picture of the holistic value generated through prioritizing sustainability investments. This in turn may help to reduce the cost of capital and attract more long-term, ESG-oriented investors. This type of concrete communication can also help companies demonstrate where value creation opportunities exist that may not show up on other parts of their balance sheet. For example, proprietary technology in the automotive sector is not reflected in the balance sheet but provides significant financial value and can greatly impact company valuations. Hopefully, with increased knowledge about the connection between sustainability improvement and financial performance, companies and investors can wholly integrate these frameworks into their decision-making processes moving forward.

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⁶ For additional details on the ROSI framework, refer to Appendix A

About Our Organizations

NYU Stern CSB

NYU Stern CSB was founded on the principle that sustainable business is good business, and is proving the value of sustainability for business management and performance at a time when people and the planet need it most. At CSB, we aim to help future and current business leaders embrace proactive and innovative mainstreaming of sustainability, resulting in competitive advantage and resiliency for their companies as well as a positive impact for society.

NYU Stern CSB developed the [ROSI](#) framework to bridge the gap between sustainability strategies and financial performance, helping to build a better business case for the value of sustainability initiatives. We partner with companies to apply ROSI internally, teach students and executives how to leverage the framework, and partner with companies on internships and experiential projects leveraging ROSI.

SASB

SASB is an independent nonprofit organization that sets standards to guide disclosure of financially material sustainability information by companies to investors. The SASB Standards identify environmental, social, and governance issues most relevant to the financial performance of companies in 77 industries. For the Automobiles Standard, SASB identifies five industry-specific issues, including Product Safety, Labor Practices, and Materials Sourcing.

Appendix:

A. ROSI Framework:

For corporate management, ROSI drives better-performing business - socially, environmentally, and financially - by embedding sustainability into core business strategy, decision-making, and accounting and quantifying the full range of costs and benefits, including intangibles.

For investors, ROSI improves decision-making, valuation, and communications - by better understanding ESG data, assessing where relative value exists in corporate strategies and investments, and better integrating, measuring, and reporting on financial performance driven by ESG strategies.

Sustainability Drivers of Financial Performance & Competitive Advantage



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B. SASB Automobiles Industry Standard

SUSTAINABILITY DISCLOSURE TOPICS & ACCOUNTING METRICS

Table 1. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Product Safety	Percentage of vehicle models rated by NCAP programs with an overall 5-star safety rating, by region	Quantitative	Percentage (%)	TR-AU-250a.1
	Number of safety-related defect complaints, percentage investigated	Quantitative	Number, Percentage (%)	TR-AU-250a.2
	Number of vehicles recalled ²	Quantitative	Number	TR-AU-250a.3
Labor Practices	Percentage of active workforce covered under collective bargaining agreements	Quantitative	Percentage (%)	TR-AU-310a.1
	(1) Number of work stoppages and (2) total days idle ³	Quantitative	Number, Days idle	TR-AU-310a.2
Fuel Economy & Use-phase Emissions	Sales-weighted average passenger fleet fuel economy, by region	Quantitative	Mpg, L/km, gCO ₂ /km, km/L	TR-AU-410a.1
	Number of (1) zero emission vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold	Quantitative	Number	TR-AU-410a.2
	Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities	Discussion and Analysis	n/a	TR-AU-410a.3
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	n/a	TR-AU-440a.1
Materials Efficiency & Recycling	Total amount of waste from manufacturing, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TR-AU-440b.1
	Weight of end-of-life material recovered, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TR-AU-440b.2
	Average recyclability of vehicles sold ⁴	Quantitative	Percentage (%) by sales-weighted metric tons (t)	TR-AU-440b.3

² Note to **TR-AU-250a.3** – Disclosure shall include a discussion of notable recalls, such as those that affected a significant number of vehicles of one model or those related to a serious injury or fatality.

³ Note to **TR-AU-310a.2** – Disclosure shall include a description of the reason for each work stoppage, impact on operations, and any corrective actions taken.

⁴ Note to **TR-AU-440b.3** – Disclosure shall include a description of the entity's approach to optimizing vehicle recycling and recovery rates.

C. ROSI's Five-Step Methodology

For project collaborations, NYU Stern CSB works with company partners to implement the five-step ROSI framework process highlighted to the right.

- 1 Identify Material ESG Issues & Strategies**
Identify material sustainability challenges, (referencing frameworks such as SASB and GRI) and how the business is addressing associated risks and/or opportunities
- 2 Assess Practices**
Determine which practices have been implemented to address sustainability strategies
- 3 Define Benefits**
Define the types of economic benefits that could be expected from the changed practices through the ROSI mediating factors
- 4 Quantify Benefits**
Estimate the magnitude of those benefits and when they could be realized
- 5 Monetize**
Translate the benefits into economic value, stress test, and then forecast ROI