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# Integrating Sustainability into Corporate Financial Management

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## Abstract

Companies' sustainable management decisions are among the most important tools in supporting relevant business perspectives. This study identifies and evaluates how companies in the Baltic region integrate sustainability into their financial management, a vital question given the increasing attention to social responsibility. The object of the research is corporate ESG disclosure and the correlation between the net profit of companies in the Baltic states, $CO_2$ emissions, and environmental investment. We apply comparative, systematic, correlation, and graphical methods to achieve the study's objective. The results of our correlation analysis show that there is a mostly negative correlation between net profit and $CO_2$ emissions; that is, a decrease in pollution from a company's activities can increase its profits or vice versa. The correlation analysis also shows that the net profits of Lithuanian and Estonian companies are more strongly correlated with $CO_2$ emissions than with environmental investments. The opposite trend is observed for Latvian companies. The analysis of general trends in corporate social responsibility shows that the level of corporate-social-responsibility discouragement varies by country and sector.

## Keywords

Social Responsibility, Disclosure, $CO_2$, Investments in Environmental Solutions, Baltic Countries Sectors, Baltic Listed Companies, Environmental, Social and Governance (ESG)

## 1. Introduction

**1) The relevance of the research.** In rapidly changing market conditions, managers are forced to find new ways to improve their companies' efficiency and remain competitive. How companies seek to maintain their performance

varies by activity, but overall, continuous improvement is essential for many. Companies adjust their decisions according to financial indicators and non-financial elements. In recent years, the growing attention paid to corporate sustainability by corporate stakeholders and generally strict environmental regulations have further increased the focus on integrating sustainability solutions into financial management. It is, therefore, important to determine the level of Corporate Social Responsibility (CSR) disclosures and assess the correlation between corporate performance, $CO_2$ emissions, and investment in environmental solutions.

**2) The problem of the research.** An analysis of the scientific literature shows the relevance of corporate sustainability as a topic of study. However, many studies are limited to solving a single problem of the various issues arising in this regard. For example, Mamun et al. (2022), Wang et al. (2019), and Rudžionienė and Gedutienė (2022) assess either the level of CSR disclosures or the links between corporate financial performance and sustainability. When assessing CSR disclosure levels in company financial statements, Rudžionienė and Gedutienė (2022) and Mohammad (2019) choose companies in a single sector; we go beyond this narrow focus here. Further, when assessing the level of social responsibility, Rudžionienė and Gedutienė (2022) and Mohammad (2019) define the various structural aspects of their social responsibility index to capture that each country under study differs on these lines and has specific regulations. In this study, we thus decided to define the structural parts of our index based on the Global Reporting Initiative (GRI), which is recognized internationally. Second, the increasingly pronounced effects of climate change (European Commission, 2024a), driven by the key factor $CO_2$, make it necessary to establish a link between this factor, the measures taken to reduce it—environmental investment—and the financial performance of companies. However, an analysis of the scientific literature related to the subject of this paper shows that there is still a lack of research in the scientific literature on Baltic-listed companies, which further highlights the need for this study.

**3) The object of the research.** Integrating sustainability solutions into financial management of companies in the Baltic region.

**4) The purpose of the research.** To identify and evaluate sustainable solutions for companies in the Baltic region integrated into financial management.

The objectives of the research are as follows:

a) To examine and define the concept of sustainable and conventional finance;

b) To examine the laws and directives governing corporate sustainability disclosures, as well as models of corporate social reporting from other studies;

c) To examine the links between corporate sustainability, $CO_2$, and financial decisions;

d) To develop a methodology for studying the integration of sustainability into corporate financial management;

e) To determine the relationship between companies' financial performance

and factors that have a significant impact on climate change and assess the disclosure of social responsibility by industry.

**5) The methods of the research**. We analyze the theoretical aspects of the integration of corporate sustainability into financial decisions and apply comparative and systematic analyses of the literature, allowing us to compare differing views and present generalized conclusions. We assess and determine the links between sustainability and financial performance of companies in the Baltic region and the level of social responsibility disclosures through correlation and statistical data analysis.

## 2. Theoretical Aspects of Sustainable Financial Management

Increasingly stringent environmental regulations have meant that polluting companies often actively adjust their behavior to overcome the challenges they present. Companies are adjusting the behaviors related to their field of activity and the financial sphere, which means that users of companies' financial statements are increasingly paying attention both to financial results and other non-financial performance indicators that reflect the entire sustainability policy/governance in general. Corporate accountability for sustainable activities has been adjusted in recent years by the European Sustainability Reporting Standards (ESRS), which entered into force in 2023 (European Commission, 2024b). As the requirements related to the sustainability of companies' activities become stricter, they must meet various challenges to comply with the new requirements, business models, and financial management paradigms. These requirements shape financial management trends related to sustainable finance in general and the relationship between today's technologies, $CO_2$ emissions, and how sustainability influences performance.

### 2.1. Concept of Traditional, Green, and Sustainable Finance

Traditional financial theory is based on the notion that the actions of economic entities are guided by the criterion of maximizing expected usefulness (Muhammad, 2009). This means that investors (shareholders) behave rationally, and their objective is to get the maximum profit by any means, irrespective of the commitment to sustainable development (Kamoune & Ibenrissoul, 2022). However, there is an alternative approach, sustainable finance that goes beyond maximizing profits to consider the company's purpose, mission, and values; this is contrary to the traditional role of finance (Ryszawska, 2018).

The concept of sustainable finance is fairly new, and as sustainable finance and climate finance are closely linked, there are various definitional options. Green capital or green finance is most often interpreted as the financial resources used to finance activities related to environmental objectives. Sustainable finance is also often defined as financing that considers environmental objectives, such as whether investments would preserve biodiversity, water, and marine resources, prevent pollution, boost the circular economy, or support climate change mitiga-

tion and adaptation (Lee et al., 2022). There are broader understandings of sustainable finance that combine sustainable investment with social commitments (such as respect for human rights, labor relations, and investment in communities) and take account of management issues, such as management structures, employee relationships, and executive salaries (European Environment Agency, 2023).

Sustainable financing solutions are only one of the components of "going green". Environmental, Social, and Governance (ESG) assessments should thus include the assessment and definition of sustainable financing solutions and company policies when assessing the sustainability and impact on society of an investment in a company (Migliorelli, 2021). Migliorelli (2021) defines sustainable finance as "finance to support sectors or activities that help achieve or improve at least one of the three relevant dimensions of sustainability-ESG". The ESG criterion is becoming one of the most important factors in financial decision-making, particularly regarding investment. Therefore, as has already been mentioned, the sustainability of companies should be evaluated according to the three ESG dimensions (Shen et al., 2023):

- **Environmental protection** concerns company climate policies, energy use, the preservation of waste, pollution, natural resources, and the treatment of animals. There is a strong focus on direct and indirect emissions of greenhouse gases.
- **Social responsibility** concerns the relationship of companies with internal and external interested parties. Many studies focus on the human capital management structure, including objective pay, employee engagement, and the organization's impact on the communities in which it operates.
- **Governance decisions** concern how an organization is governed and managed and include the company's transparency and integrity in its accounting.

The ESG assessment system is an opportunity for interested parties or shareholders to understand how the organization manages risks and opportunities related to the increasingly important operational sustainability; the importance of this became especially apparent in January 2023, when the EU Corporate Sustainability Reporting Directive (CSRD) entered into force, which further strengthened the requirements for sustainability disclosures and expanded the range of companies to which it will apply.

According to Ghisetti and Quatraro (2017), sustainable finance is partly characterized by high uncertainty regarding profitability, a long payback period, and sometimes even a lack of competitive advantage. However, sustainable finance is an innovation of traditional finance that could provide an effective solution to the problem of financing sustainable industry. Sustainable finance is still concerned with finance but with an emphasis on its environmental benefits. **Figure 1** summarizes the characteristics of sustainable and traditional finance.

In sum, like traditional finance, sustainable finance has resource allocation as its primary function, but the latter concerns the allocation of resources that are

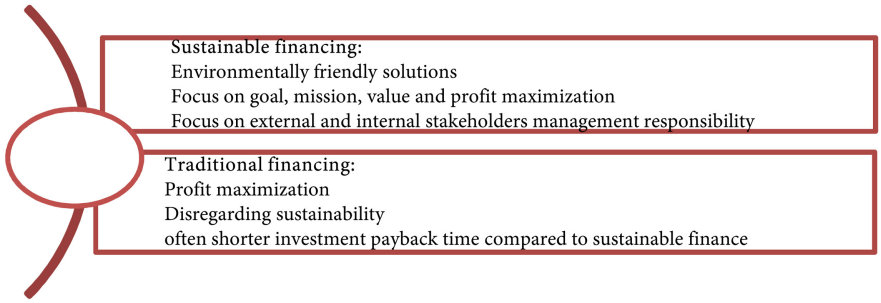


**Figure 1.** Sustainable and traditional finance characteristics. Source: Prepared by the authors following Ghisetti and Quatraro (2017).

also environmentally friendly. As noted above, an organization's sustainable financing decisions extend beyond supporting environmental solutions to include decisions relating to its social responsibility and governance.

## 2.2. Regulating the Disclosure of Corporate Sustainability Performance

The CSRD entered into force in early 2023 and is intended to strengthen the disclosure requirements concerning corporate sustainability performance and to expand the range of companies to which the directive applies. It can be argued that this directive on corporate sustainability reporting requires all large and listed companies in the EU to disclose risks arising from social, management, and environmental problems and name the impact of their activities on people and the environment (European Commission, 2023a). The new EU directive aims to improve the scope and quality of corporate sustainability reporting by promoting the transparent development of companies through the pursuit of sustainability. Companies are required to prepare their sustainability report on the basis of the 12 ESRS, the standards applicable to sustainability reporting (European Commission, 2023b). Importantly, ESRS 1 does not specify required content but does specify the grounds on which companies should prepare their reports (European Commission, 2023b). ESRS 2 defines the general characteristics and information that should be disclosed in four reporting areas: governance, strategy, management of impacts, risks and opportunities, and metrics and targets.

Arguably, the ESRS constitutes 12 sets of standards applicable to different topics (see **Figure 2**) to be disclosed in the sustainability report. All standards have the same structure and are based on the concept of dual significance (European Commission, 2023a), according to which all issues must be approached from two perspectives. The first concerns the impact of climate change on the business and its future cash flows, and the second refers to the company's impact on climate change (Giner & Luque-Vílchez, 2022).

The ESRS standards require the disclosure of material impacts, risks, and opportunities on a wide range of ESG topics. Further, in their sustainability reports, companies must specify the management structure responsible for or related to the company's sustainability-related activities and processes (European

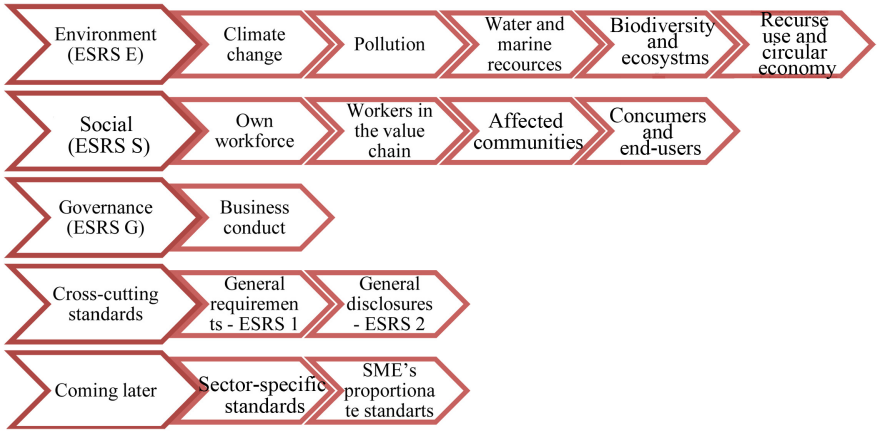


**Figure 2.** ESRS structure. Source: Prepared by the author based on ESRS standards.

Commission, 2023a). **Table 1** presents other important aspects of the preparation of sustainability reports, as regulated by the ESRS.

It is expected that the application of particular ESRS (E1 - E5; S1 - S4; G1) allows a more complete view of the company's strategy, processes, culture, and other social aspects of its performance. Most importantly, the reporting standards oblige companies to disclose the impact of their activities on climate change, whether they are taking measures to mitigate the harm, and, more generally, the measures taken for the company's transition to a sustainable business model and its contribution to the EU's Green Deal environmental objectives.

Before the ESRS came into force, the GRI offered the most popular benchmark against which companies assessed their social responsibility performance (GRI, n.d.). According to KPMG (2020), these standards remain the global standard for sustainability reporting. The GRI is an independent international standards organization that helps companies, governments, and other organizations understand and report on their impacts concerning human rights, corruption, climate change, and other ESG matters. Launched in 2000 and developed by the Global Sustainability Standards Board, the GRI's standards are global standards for ESG reporting (Luo & Tang, 2022). While the ESRS are legally binding and require companies to report on all of their material impacts, risks, or opportunities, the GRI standards are not, despite being widely used and accepted. The ESRS and GRI standards differ in their reporting approach and method rather than in terms of the detailed indicators. The ESRS has more detailed and rigorous requirements than the GRI, but this higher level of granularity is challenging for companies that are attempting to comply. In addition, the new ESRS structure covers a wide range of topics with a reduced number of standards, particularly regarding social and governance elements. We, therefore, assess the level of CSR reporting in the period before it became mandatory.

Assessing the level of CSR disclosure requires that we first systematize the results of other studies and identify an appropriate research method. In most studies, the authors calculate an index of CSR disclosure (Zhu et al., 2022). However,

Table 1. General information about requirements by ESRS.

| Objects | Key features of the final ESRS |
|---|---|
| | All companies with:<br>Over 250 employees;<br>More than 40€ million in annual revenue;<br>More than 20€ million in total assets;<br>Publicly listed equities and have more than ten employees or 20€ million in revenue.<br>International and non-EU companies with more than 150€ million in annual revenue within the EU and that h1ave at least one subsidiary or branch in the EU exceeding certain thresholds. |
| **Reporting time** | Reporting at the same time as the financial statements. |
| **Assurance** | Companies need to be prepared for disclosures to be subject to assurance.<br>This will require a clear audit trail and the documentation of processes and controls to support the disclosures provided. |

Source: Prepared by the authors following the ESRS.

the calculation of the CSR takes into account quite different factors. For example, in calculating their CSR Disclosure Index, Jefimova et al. (2023) use the provisions of the Directive of the European Parliament and of the Council and the Law on Corporate Accountability of the Republic of Lithuania to develop a model consisting of 18 elements. The authors built the CSR Index model in this study in accordance with Directive 2014/95/EU using the 19 components identified therein.

Our review of other studies shows that the structure of the CSR Index is different. This means that there is no single standard model that can be used to assess the level of CSR with sufficient precision (Zhu et al., 2022). However, most studies use a similar methodology when calculating the index. Table 2 summarizes the studies assessing CSR levels.

In summary, studies that assess CSR calculate an index, and the method for doing so varies when authors try to set CSR index structure. Some rely on national standards to assess the index components; others use international standards, usually European directives or the GRI, which are considered the preeminent standards for global sustainability reporting. However, where index components are selected based on uniform standards, the studies do not always identify the number of components that make up a single index. In some studies, the components are more structured than in others; however, despite differences in the number of index components, the underlying logic is that the index should include factors covering ESG criteria.

## 2.3. Relationship between Financial Decisions, Indicators, and Sustainability

In recent years, companies' investments in solutions that create sustainable

Table 2. Criteria for corporate social reporting disclosures.

| Authors | Criteria for corporate social reporting disclosures |
|---|---|
| Dyduch and Krasodomska (2017) | **Business model, policies, and risks related to CSR issues:**<br>➢ Business model description;<br>➢ Policies related to environmental, social, and employee matters, respect for human rights, anti-corruption, and bribery matters;<br>➢ Principal risks related to environmental, social, and employee matters, respect for human rights, anti-corruption, and bribery matters;<br>➢ Non-financial KPIs.<br>**Environmental matters:**<br>➢ Impacts on the environment;<br>➢ Impacts on health and safety;<br>➢ Use of renewable energy;<br>➢ Use of non-renewable energy;<br>➢ $CO_2$;<br>➢ Water use;<br>➢ Air pollution.<br>**Social and employee-related matters:**<br>➢ Actions taken to ensure gender equality;<br>➢ Implementation of fundamental conventions of the International Labour Organisation;<br>➢ Working conditions;<br>➢ Respect for the right of workers to be informed and consulted;<br>➢ Respect for trade union rights;<br>➢ Health and safety at work;<br>➢ The dialogue with local communities;<br>➢ Actions taken to ensure the protection and the development of the local communities.<br>**Ethical matters:**<br>➢ Prevention of human rights abuses, instruments in place to fight corruption and bribes. |
| Pratama et al. (2020) | **Environmental Standards:**<br>➢ Materials;<br>➢ Energy;<br>➢ Water;<br>➢ Biodiversity;<br>➢ Effluents and waste;<br>➢ Environmental compliance.<br>**Social Standards:**<br>➢ Occupational health and safety;<br>➢ Training and education;<br>➢ Human rights assessment;<br>➢ Local communities;<br>➢ Customer health and safety;<br>➢ Marketing and labelling. |
| Jefimova et al. (2023) | ➢ The environmental impact of the company's activities; the health and safety impact of the company's activities; resource use; greenhouse gas emissions; water use; air pollution.<br>➢ Social and human resources—gender equality; working conditions; social dialogue; workers' rights; health and safety at work; dialogue with local communities; community protection and development.<br>➢ Human rights—prevention of human rights violations.<br>➢ Corruption and bribery—fight against corruption and bribery; prevention of corruption and bribery.<br>➢ Verification of the implementation of company processes—key risks leading to future consequences; risk information. |

Source: Prepared by the authors following the studies cited.

activities or management systems have increased due to increasing regulation and changing attitudes toward the environment. The growing use of sustainable finance is driven, in particular, by emissions regulations and market competition (Chang et al., 2021). Companies are thus strategically focusing on the use of sustainable finance to maintain demand for their products and secure external financing. As socially responsible and sustainable companies grow, it is important to understand how sustainability determines or influences their financing structures and results. Lashitew (2017) and Chang et al. (2021) argue that sustainability significantly affects the financial prospects of companies, significantly impacting the company's cash flow, development, costs, and, as already noted, the supply of financing. Simultaneously, negative environmental or community performance is often associated with reputational damage, which has a negative impact on companies' financial performance.

Wang et al. (2019) find that sustainable finance can allow companies to optimize their financial structure. According to Rasera and Passos (2021), socially responsible and sustainable companies often have better prospects for accessing finance, especially loans. Sustainable finance promotes the sustainable activities of companies and seems to impose greater financial restrictions on polluting activities. Thus, it can be argued that sustainable finance policies can limit the volume of debt financing for non-sustainable companies and increase the cost of debt financing for companies responsible for high levels of pollution and energy consumption (Lee et al., 2022; Wang et al., 2019; Liu et al., 2017). The results in Ouyang et al. (2023) show that the use of sustainable finance improves enterprise growth and the economy more broadly. Yu et al. (2023) come to the same conclusion that sustainable finance can stimulate and support the growth of enterprises and the development of sustainable technologies. Flammer (2021) notes that green financial instruments such as bonds can encourage companies to engage in sustainable innovation. Therefore, the growth of sustainable finances helps environmentally oriented businesses become more technologically innovative.

There is another approach in the literature, on the basis of which it can be argued that sustainable enterprises may have insufficient investment because, in most cases, their profitability is highly uncertain, and the investment payback period is usually longer. Environmental protection regulation determines enterprises' costs for pollution control, additional production, and innovation failures (Zhang, 2021). However, according to Zhang (2021), despite the costs and other negative factors mentioned above, sustainable financial instruments, such as regulated green credit, can make a significant contribution to sustainable growth, controlling pollution, and saving energy. As the results of recent research by the authors show, sustainable investments also stimulate company growth.

Thus, it can be argued that corporate sustainability policies can enhance competitiveness and productivity, stimulate firm growth, and increase the supply of ul-

tra-leverage (Zhang, 2021). However, there is another opinion of the authors in the academic literature, when it is believed that sustainable investments are associated only with high costs, investments, the long payback period of which does not pay off the full benefit of the investment. Importantly, the direction of a company's sustainability efforts often depends on the attitudes toward green initiatives of its managers and shareholders; that is, they must choose between the safety of traditional finance and sustainable finance, with an uncertain payback period and profitability.

This is a reminder of the importance of neuro-finance, which looks at the determinants of people's choices. However, in this study, we do not assess the factors that influence people's choices. Rather, we analyze how companies' financial performance changes depending on whether their activities are oriented toward sustainability. We go on to analyze the literature to establish the relationship between sustainability, which is usually represented through the ESG criterion, and other financial indicators.

Increasingly, companies are making financial decisions aimed at financial gain and environmental sustainability. According to Waters (2011), while various tools are used to calculate the results of the company's activities, profit is the main measure of many enterprises. The main goal of company managers is to maximize profits, and it is important to consider the impact of sustainability efforts, most often expressed in the literature using the ESG criterion, on financial performance. Bodhanwala and Bodhanwala (2018) consider whether a company's sustainability affects its profitability and find a significant link between sustainability and performance indicators, such as return on invested capital, return on equity, return on assets, and earnings per share. These studies confirm that socially responsible and sustainable enterprises are characterized by higher profitability.

Aydoğmuş et al. (2022) find that the environmental, social, and management components of the ESG concept affect profitability in different ways. The authors find that there is a positive and significant relationship between profitability and individual scores for social and management factors but no significant relationship with the environmental score; the overall ESG score has a positive and significant relationship with the company's profitability. The results in Aydoğmuş et al. (2022) confirm the conclusions of the studies analyzed above. Ahmad et al. (2021) examine the impact of ESG on the financial performance of 351 FTSE350 companies from 2002 to 2018, finding that the overall ESG score has a significant and positive effect on financial performance but that the results for the individual ESG components are uneven.

Our analysis of the literature shows that not all studies report a positive relationship between ESG and enterprise performance. Duque-Grisales and Aguilera-Caracuel (2021) examine 104 international companies in Latin America using date for the period 2011-2015, finding a negative relationship between ESG scores and corporate financial performance. Giannopoulos et al. (2022) examine the data

of Norwegian listed companies and obtain the same results as Duque-Grisales and Aguilera-Caracuel (2021). Thus, it can be argued that the results in the literature are ambiguous, which is why there is a need for further research (see Table 3).

In sum, the findings do not provide a unified picture to support specific conclusions on the relationship between ESG and financial performance. Moreover, the analysis of other studies shows that the most common approach to assessing the relationship between ESG and financial performance is to use a regression analysis in which the independent variables are usually various profitability ratios, and the dependent variables are usually the structural components of ESG. It seems that corporate sustainability decisions, or the environmental score, which focuses on the development of technology and innovation to control $CO_2$, are of particular social importance. In the next section, we analyze companies' financial decisions regarding $CO_2$ emissions, which is one of the largest contributors to global warming (European Commission, 2023b).

### 2.4. Companies' Financial Decisions, $CO_2$ and Technologies

Based on the Council of the European Union website, in 2015, the EU and its Member States signed and ratified the Paris Agreement and, in line with this commitment, have agreed to turn the EU into the first climate-neutral economy

Table 3. Structured research on the relationship between financial decisions, indicators, and sustainability.

| Authors | Study sample | Research methods | Financial indicators |
|---|---|---|---|
| Bodhanwala and Bodhanwala (2018) | 58 Indian firms included in Thomson Reuters Asset 4 ESG | An empirical multivariate panel data model | Return on invested capital;<br>Return on equity;<br>Return on assets;<br>Earnings per share. |
| Ahmad et al. (2021) | Panel data for 351 firms in the FTSE350 from 10 industries | Static analysis, dynamic analysis | The market value and earnings per share of the firm;<br>The ESG scores, ECO scores, ENV scores, SOC scores, CG scores, ESGH scores, ESGL scores;<br>Financial leverage, total revenues, capital expenditure as a percentage of sales. |
| Duque-Grisales and Aguilera-Caracuel (2021) | Four multinationals from Brazil, Chile, Colombia, Mexico and Peru | Regression | ESG dimensions;<br>Firms' financial performance. |
| Aydoğmuş et al. (2022) | Sample includes 1720 companies and 39 countries | Regression | Tobin's Q = (Equity Market Value + Liabilities Market Value)/(Equity Book Value + Liabilities Book Value)<br>ESG scores. |
| Giannopoulos et al. (2022) | Sample of 20 companies | Correlation/regression model | ROA and Tobin's Q;<br>ESG disclosure scores. |

Source: Prepared by the authors following studies cited.

and society. Emissions and accumulation of greenhouse gases (including $CO_2$), environmental degradation, and global warming have catastrophic consequences for human society and natural ecosystems and present obstacles to climate-change efforts. Thus, as $CO_2$ is a factor driving climate change, much of the attention of states after the Paris Agreement has been on the emission of these gases. Thus, in recent years, financing has proven to be a fairly effective response to the fight against climate change and its environmental consequences.

Mamun et al. (2022) analyze 46 countries and find that green or sustainable finance significantly reduces $CO_2$ emissions in both the short and long term. The authors confirm that climate finance contributes to reducing $CO_2$ emissions, but they noted that the $CO_2$ impact of climate sustainable finance is more pronounced in developed credit markets and economies with more successful innovation and that had experienced more pronounced effects of climate change. Some authors (Meo & Karim, 2022; Zhou et al., 2020; Mamun et al., 2022) single out green bonds as the most promising measure to combat climate change and $CO_2$ pollution. They argue that since companies issuing bonds undertake to use the funds to finance environmental and sustainability-promotion projects, investors are behaving responsibly by investing in a sustainable company. Green bonds thus combine the attraction of capital and the willingness of investors to finance projects that benefit the environment and sustainability (Flammer, 2021).

According to Wang et al. (2019), there are other instruments that contribute to environmental sustainability, such as solar finance or the like. However, green bonds are both a sustainable investment tool and, unlike other popular green financial instruments, take into account all three ESG factors. According to the quantile regression by Meo and Karim (2022), the link between sustainable finance and $CO_2$ depends on the size of sustainable finance (green bonds) in relation to the economic cycle; different levels of financing are considered to make significant limited emissions. However, $CO_2$ emissions are a complex and multifaceted phenomenon, and their connection with sustainable finance may be the result of other factors (Meo & Karim, 2022). Thus, sustainable financial resources can be expressed in various forms, including specific financial instruments, but in one way or another, they all contribute to a green or sustainable financial system.

Addressing the negative effects of climate change and environmental protection requires the development of innovative sustainable technologies to mitigate $CO_2$-related climate change; these technologies include renewable energy supply and end-use efficiency technologies (Du & Li, 2019). Recently, such innovation has become an important tool for reducing $CO_2$ emissions worldwide (Nikzad & Sedigh, 2017). Put another way, technological development and flexibility in the transition to clean energy are essential for sustainable growth (Yu et al., 2023). Yu et al. (2022) show that promoting digitally accessible, sustainable finance helps in developing sustainable and renewable energy sources and reducing $CO_2$

emissions. Technological innovations in the relationship between sustainable finance and $CO_2$ have a significant mediating role (Yu et al., 2023). Meo and Karim (2022) thus conclude that sustainable finance is the best financial strategy to reduce $CO_2$ emissions. Their empirical results show that climate finance significantly reduces the carbon emissions of developing countries, and the impact of mitigation financing seems to be greater than that of climate finance. In addition, after analyzing the literature, we noticed that, at the national and international levels, there is insufficient research on how the financial results of enterprises and their growth change depending on the company's $CO_2$ emissions (see Table 4).

Investments in technology are one of the most effective ways to reduce $CO_2$ emissions, and it is important to analyze this relationship. Technological innovations have a significant impact on the use of renewable resources, reducing the share of fossil fuels and $CO_2$ emissions (Suki et al., 2022). Technological change, driven by digitalization, can provide opportunities to increase people's well-being and accelerate progress toward the MDGs and the Paris Agreement on Climate Change. According to (Du & Li, 2019), sustainable finances are dampening $CO_2$ emissions through technological innovation. However, the exact impact of sustainable technology innovation on carbon productivity is still unknown. It is believed that such innovation can only have an impact in high-income economies.

Table 4. Structured research about companies' financial decisions, $CO_2$ and technologies.

| Studies | Study sample | Research methods | Financial indicators |
|---|---|---|---|
| Mamun et al. (2022) | Forty-six countries | Static, dynamic analysis | $CO_2$ emissions;<br>GDP growth rate;<br>Innovative capacity;<br>Size of equity market. |
| Meo and Karim (2022) | Ten countries | Quantile Regression | Green bonds;<br>$CO_2$ emissions. |
| Yu et al. (2022) | Sixty emerging and non-emerging economies | Static, dynamic, regression analysis | $CO_2$ emissions;<br>GDP growth rate;<br>Innovative capacity;<br>Size of equity market. |
| Hu et al. (2023) | Thirty provinces and municipalities in mainland China | Static, dynamic, regression analysis | $CO_2$ emissions;<br>Technological innovation;<br>Green tax;<br>Green fiscal expenditure;<br>Economic growth;<br>Energy structure;<br>Population size;<br>Industrial structure. |

Source: Prepared by the authors following studies cited.

According to Hu et al. (2023), it is difficult to find strong evidence that sustainable technology innovation has a positive impact on carbon productivity in less developed countries. There is a need for innovations that improve efficiency and/or promote technology to achieve the right balance between carbon emissions and economic activity (Du & Li, 2019). Du and Li (2019) also find that when introducing eco-innovations, companies adjust the tools, methods, and resources they employ to reduce the environmental problems caused by previous business models.

Sustainable innovation consists of new or modified processes, methods, practices, systems, and products aimed at preventing or reducing environmental damage (Kunapatarawong & Martínez-Ros, 2016). It can be built with or without this as a clear objective. In addition, the extent of a company's $CO_2$ emissions correlates with its financial results of enterprises. Our analysis of the literature shows that, among other things, to reduce pollution, companies apply sustainable or traditional technologies for sustainable purposes to improve their sustainability position.

In summary, sustainable finance integrates decisions related to the ESG performance of companies, but the analysis of the academic literature shows that up to 2023, the disclosure of these factors in corporate financial statements is only recommended and conditionally defined. This may partly explain why researchers have analyzed different numbers of elements in their studies of the CSR disclosure index. Most often, the CSR Index variables are determined based on GRI. The literature also shows that corporate environmental decisions have a significant impact on companies' financial performance, particularly regarding $CO_2$ management and investment in sustainable decisions that make it possible to manage pollution. Among the studies reviewed, the most common methods used to assess the relationship between corporate financial performance and $CO_2$ and technology are grounded in statistical data, for example, correlation and regression analysis. The review of the literature suggests that there is no single definition of the components of the social accountability ventilation index; researchers have different interpretations of the links between corporate financial performance and $CO_2$. We consider this issue in the next section.

## 3. Integrating Sustainability into Corporate Financial Management Methodology

Shareholders and others encourage companies to pay greater attention to the environmental, social, and legal/management aspects of corporate activities to create a sustainable, socially responsible corporation. Sustainable development or CSR is becoming a real business practice globally, especially in Europe, and CSR disclosures are becoming a mandatory accompaniment to financial statements; there is also a shift from being regulated by national laws to being regulated by European laws (Rudžionienė & Gedutienė, 2022). Therefore, in this article, we focus on assessing the level of CSR that existed before the entry into

force of the CSRD in 2023. Corporate social accountability will be evaluated on the basis of qualitative criteria, which most often form three main groups: environmental, social, and management criteria.

Recent studies (Mamun et al., 2022; Wang et al., 2019; Rudžionienė & Gedutienė, 2022) assess either the degree of CSR disclosure in financial statements or the relationship between the companies' ESG-related activities and their financial results. However, given the increasingly pronounced effects of climate change (European Commission, 2024a), it is necessary to establish links between $CO_2$ emissions (as a key contributor to climate change) and companies' financial performance. In addition, our analysis of the literature shows that investment in the environment has become an important tool for reducing $CO_2$ emissions worldwide. Therefore, in this article, we assess the links between companies' financial performance, $CO_2$ emissions, and investments in sustainable business.

The analysis of the scientific literature shows that there are various views on the connection between the financial performance of companies and their socially responsible activities, as some authors (Zhang et al., 2021) argue that investments related to corporate sustainability have a relatively long payback period and are generally costly, which has a negative impact on financial performance. Yu et al. (2023) take a different position. Moreover, we noticed that some authors (Rudžionienė & Gedutienė, 2022; Mohammad, 2019) when assessing the level of social responsibility reproduction in the financial statements of companies, choose companies belonging to a single sector as their research object. Therefore, we go beyond a single-sector analysis and compare the performance of socially responsible companies across different areas of economic activity.

Our analysis of literature in this area (e.g. Ahmad et al., 2021; Giannopoulos et al., 2022; Pratama et al., 2020; Zhang et al., 2021) shows that most studies use statistical data and comparative and correlation analysis to determine and assess the correlation between the performance of companies and $CO_2$ and environmental investments; these are described in more detail in Section 2.2. Other studies assess the disclosure of companies' socially responsible activities to calculate a CSR index (Rudžionienė & Gedutienė, 2022; Alshannag et al., 2016; Pratama et al., 2020). The use of this index in the present study is discussed in Section 2.3.

### 3.1. Period and Object of the Research

In this study, we analyze data on sectors and listed companies in Lithuania, Latvia, and Estonia, as the literature shows that Baltic companies are rarely included in analyses of this issue. First, we analyze sectoral financial data for the Baltic countries according to the classifications provided by the Lithuanian, Latvian, and Estonian statistical agencies (**Annex 1**). After identifying the sectors with the strongest correlation to $CO_2$ emissions and sustainable investments, we as-

sess the disclosure of social reporting in the financial statements of the Baltic-listed companies on the Nasdaq Baltic exchange. According to the Law on Corporate Reporting of the Republic of Lithuania, companies that are of public interest are obliged to provide non-financial information related to their social activities. For this reason, we chose to analyze listed companies. Our initial sample consists of 72 companies listed on Nasdaq OMX Baltic. The final sample consists of 43 companies; we cover around 60% of listed companies on Nasdaq OMX Baltic; our sample adjustments and the reasons for these are addressed in the next section.

Our sample period, 2017 to 2022, is chosen based on: 1) the entry into force of EU Directive 2014/95/EU that made the disclosure of social responsibility actions mandatory for some EU companies mandator from 2017 onward, and 2) that 2022 is the last year (before 2023) for which this reporting is an option for any companies—the EU CSRD will enter into force in 2024. This period makes it possible to assess how companies disclosed information when sustainability reports were still optional for many companies. This allows us to classify the financial results of Baltic companies according to factors that significantly affect climate change.

**The aim of the study is to** determine the relationship between companies' financial performance and factors that have a significant impact on climate change and to assess the disclosure of social responsibility by industry.

**The objectives of the study are as follows:**

1) To determine, by statistical data analysis, which sectors are the most profitable, which are the most polluting, and which invested in sustainability;

2) To determine by statistical data and correlation analysis which of the factors significantly impacting climate change are most correlated with the financial results of companies in various industry sectors of the Lithuanian, Estonian, and Latvian economies;

3) To determine the extent of social reporting disclosure in the financial statements of listed companies in the sectors most significantly correlated with $CO_2$ emissions and investment in Lithuania, Latvia, and Estonia, as identified by the statistical data analysis and by industry.

On the basis of the study's objectives, we proceed according to the stages set out in **Figure 3**.

### 3.2. Research Methods

We employ statistical data analysis in this study, as it allows an assessment of the temporal evolution of companies' financial performance and of the factors that significantly impact climate change. It also allows for easy comparisons of different companies' performance in different aspects, depending on the period of analysis and based on the relative indicators calculated (Mackevičius, 2010). Data from the Statistics Department of Lithuania, Latvia, and Estonia were used for statistical data analysis. In the next stage, we use correlation analysis to identify the links and relationships between the financial performance of companies, $CO_2$

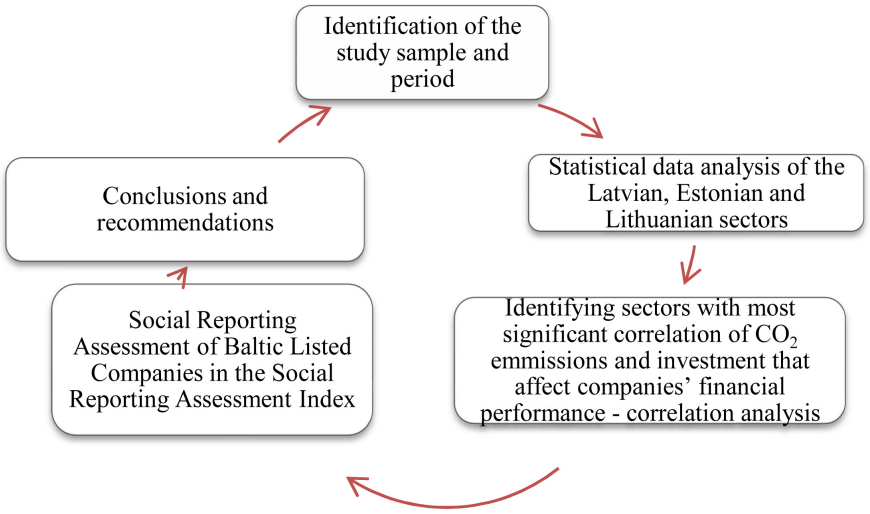


**Figure 3.** Stages of the study. Source: Prepared by the author.

emissions, and investing in environmental protection. The correlation matrix is constructed using Eviews software, and the strength of the correlation between variables is assessed according to the Pearson correlation coefficients (Čekanavičius, 2011) presented in **Table 5**.

The Pearson Correlation Coefficient is calculated as follows (Čekanavičius, 2011):

$$r = \frac{1}{n-1} \in \frac{(x_i - \overline{x})(y_i - \overline{y})}{S_x S_y} \tag{1}$$

where $r$ is the correlation coefficient; $n$ is the sample size; $x_i$ and $y_i$ are variables; $S_x$ and $S_y$ are the standard deviations; $\overline{y}$ and $\overline{x}$, are the averages of the corresponding observations $x$ and $y$.

The dependent variable—net profitability—reflects the companies' financial results of the companies; according to Labonaitė and Subačienė (2014), this indicator describes the final results of the company. Based on the net profitability indicator, it is possible to determine both the efficiency of the company's activities and its management of financial resources. Based on the analysis of this indicator and the factors affecting it, it is possible to assess and identify the factors that significantly impact companies' performance, efficiency, and sustainability (Handayani & Winarningsih, 2020; Savickas, 2019). The independent variables considered in this study are $CO_2$ emissions (which have a significant climate impact) and investment in sustainable technologies as a CSR measure to combat climate change. The theoretical basis of these indicators is described in Section 1. **Table 6** shows the indicators used in the empirical correlation analysis and the formula by which they are calculated.

Our analysis of the correlation matrix identifies the sectors in which financial results correlate most closely with $CO_2$ emissions and investments in environmental protection. The results of the correlation analysis are given in Section 3.1.

**Table 5.** Assessment of the correlation coefficient.

| Value | $\|r\| < 0.3$ | $0.3 < \|r\| < 0.5$ | $0.5 < \|r\| < 0.7$ | $0.7 < \|r\| < 0.9$ | $0.9 < \|r\| < 1$ |
|---|---|---|---|---|---|
| Assessment | Very low correlation | Low correlation | Average correlation | Strong correlation | Very strong correlation |

Source: prepared by the authors following Čekanavičius (2011).

**Table 6.** Definitions of survey variables and calculation formulas.

| Marking | Title | Calculation formula, units of measurement, definition |
|---|---|---|
| | | **General notations** |
| **LT, EE, LV** | Lithuania, Estonia, Latvia | - |
| | | **Dependent variables** |
| **NP** | Net profit | Profit before Taxes − Corporate Income Tax |
| | | **Independent variables** |
| **IEP** | Investing in environmental protection | Investments by companies to reduce direct pollution, protect the landscape and biodiversity; running costs of environmental protection and monitoring systems. This does not include expenditure on activities which, regardless of the environmental benefits, primarily meet technical needs or internal hygiene or safety and security requirements of the enterprise or other institution, and excludes expenditure on the use of natural resources, such as drinking water. |
| **$CO_2$** | Greenhouse gas emissions | Annex A of the Kyoto Protocol to the United Nations Framework Convention on Climate Change refers to the following gases: carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6) in Annex A to the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and nitrogen trifluoride (NF3) since 2012. This is referred to as a greenhouse gas because its amount in the atmosphere is rapidly increasing due to human economic activity. |

Source: Prepared by the author based on data from the Statistics Department of Lithuania.

### 3.3. Development of a Methodology for Calculating the Social Accountability Index

Financial indicators alone are considered insufficient to assess the efficiency of the company's activities and the management of financial sources. Therefore, company stakeholders carry out analyses that increasingly include ESG factors, offering a competitive advantage and, often, sustainable investment. Analysis of

the literature shows how CSR is assessed using qualitative environmental, social, and management criteria.

An index is calculated to assess CSR disclosures. The CSR Index used in this work consists of 13 elements based on a combination of GRI standards, the EU Directive, and the Non-Financial Reporting Guidelines. The GRI guidelines were chosen because we noticed that the companies listed in the Baltic states most often disclose their social responsibility activities on the basis of this system. Further, since the Baltic states—Lithuania, Estonia, and Latvia—belong to the EU, the directives implemented by the EU are also relevant (see **Figure 4**).

Due to the difficulty of assessing the actual quality of disclosure, studies on disclosure indices assume that the quantity and quality of information are directly related. In addition, we evaluate each of the 13 elements in **Figure 4** using the binary system. We employ this system to evaluate the index because all elements are considered equally important. If an element of the index is present for the company, one point is awarded; if the company does not disclose the particular information, the assigned estimate is zero.

After determining all the elements of the index for each year of the sample period for each company, we calculate the total value of the CSR disclosure index following the literature (Rudžionienė & Gedutienė, 2022; Alshannag et al., 2016):

$$IND_{j,t} = \frac{\sum_{i=1}^{n} d_{i,j,t}}{\sum_{i=1}^{n} x_{i,j,t}} \tag{2}$$

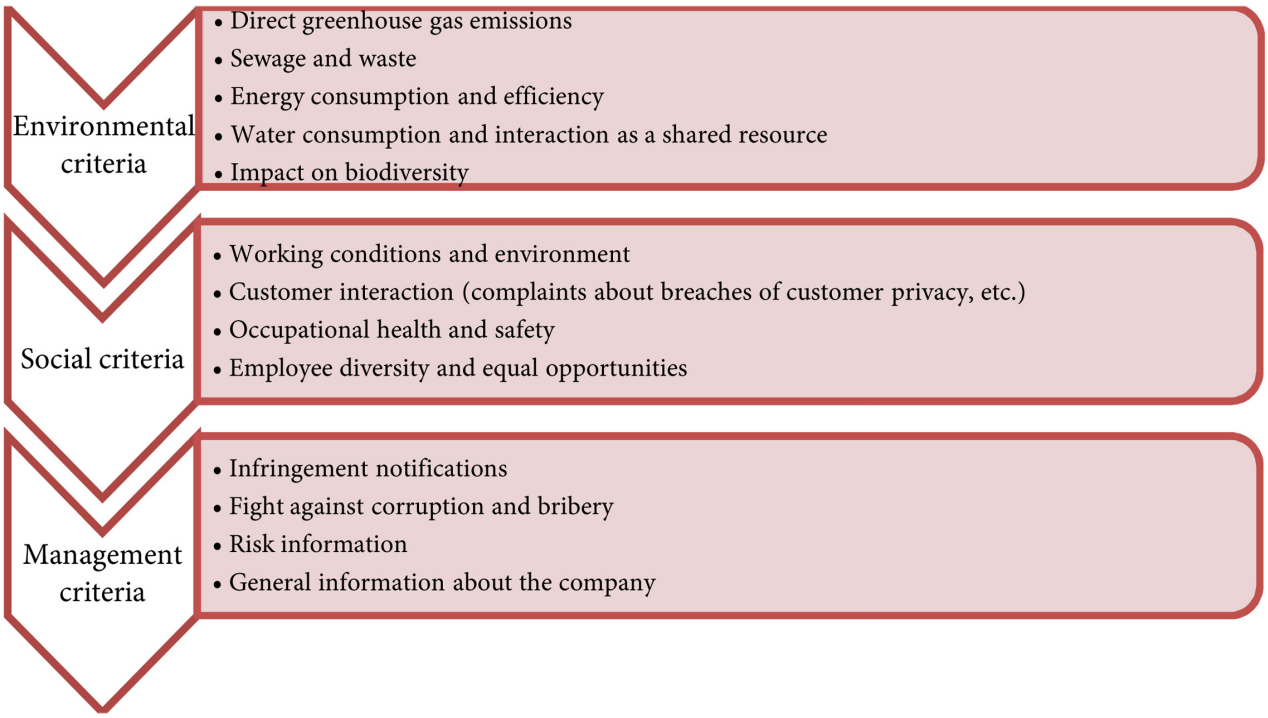


**Figure 4.** Elements of the CSR Index. Source: Prepared by the author on the basis of the GRI standards.

where $IND_{j,t}$ is the value of the CSR disclosure index for company $j$ in year $t$; $d_{i,j,t}$ is the estimate of element $i$ in company $j$ in year $t$; $x_{i,j,t}$ is the estimate of element $i$ for company $j$ equated to a unit in year $t$ (Rudžionienė & Gedutienė, 2022).

The average of the CSR disclosure index for each year is calculated as follows:

$$\overline{x}_t = \frac{\sum_{i=1}^{n} x_i}{n}, \tag{3}$$

where $\overline{x}_t$ is the average of the CSR Index in year $t$; $x_i$ is an estimate of the revealed element; $n$ = number of members.

We calculate the overall and by-sector social reporting disclosure index of companies listed in the Baltic states. Our further research follows the methodology set out in the next section.

## 4. Integrating Sustainability into Corporate Financial Management Research

### 4.1. Correlation Analysis

Based on the methodology formulated in Section 2, we assess the trends in net profits, investments, and greenhouse gas emissions of Baltic companies in the period 2017-2022. Over the whole period under analysis, Lithuanian companies, on average, generated €1,600,445 more in net profits than Latvian and Estonian companies. However, while Lithuanian companies, on average, generated more net profit over the whole period of analysis, it should be noted that the net profit of Latvian companies, on average, grew by 23% between 2017 and 2022, while that of Lithuanian companies grew by 17% and that of Estonian companies by 12% (see Figure 5).

A sector-by-sector analysis of net profit trends in the Baltic states shows that the highest profit margins in the sample period are in the following sectors: manufacturing, wholesale and retail trade, and repair of motor vehicles and motorcycles. On average, these sectors account for 22% of the total net profits earned in all Baltic countries over the analysis period. Lithuania stands out among the Baltic countries in the two most profitable sectors: its manufacturing

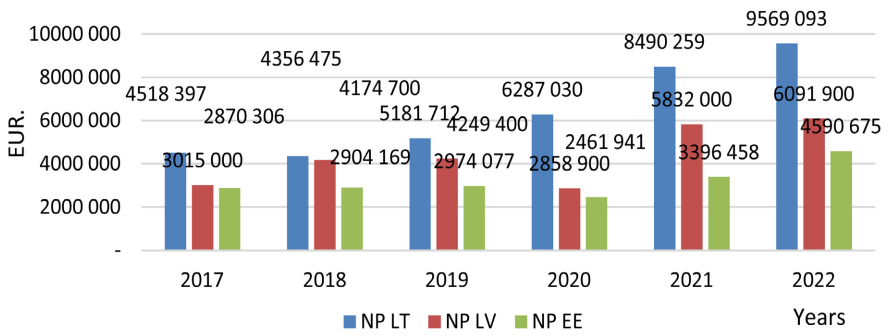


Figure 5. Trends in net profits of Lithuanian, Latvian, and Estonian companies. Source: Compiled by the authors on the basis of data from the statistical agencies of Latvia, Estonia, and Lithuania.

and wholesale and retail trade and repair of motor vehicles and motorcycles sectors generated, on average, 1.85 times more net profit than their Estonia and Latvia counterparts. Other service sectors generated the lowest net profit over the whole period in Lithuania and Latvia, while the education sector generated the lowest profits in Estonia (see Table 7).

Therefore, Latvian companies exhibit the highest growth in the Baltic context. Lithuanian companies generated the highest after-tax financial result in the sample period, and the manufacturing, wholesale and retail trade, and motor repair sectors are the most profitable in all the Baltic states.

The next indicator analyzed here is the investment in environmental sustainability by companies in the Baltic states. Between 2017 and 2022, listed companies in the Baltic states spent, on average, €133,089,000 on investments in environmental sustainability. On average, Latvian companies invested the highest amount (€197,020 thousand) in environmental protection among the Baltic companies over the whole period.

Table 7. Trends in net profits of Lithuanian, Latvian, and Estonian companies by sector.

| Sectors | Change, % | | | | |
|---|---|---|---|---|---|
| | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
| Agriculture, forestry and fishing | 27% | 6% | −8% | 70% | 98% |
| Mining and quarrying | 10% | −15% | 21% | 12% | 24% |
| Manufacturing | 17% | 15% | 9% | 56% | −5% |
| Electricity, gas, steam and air conditioning supply | −18% | −13% | 20% | −19% | 160% |
| Water supply, sewerage, waste management and remediation activities | 16% | 4% | −3% | 59% | −68% |
| Construction | 31% | 15% | 4% | −15% | 38% |
| Wholesale and retail trade; repair of motor vehicles and motorcycles | 28% | 0% | 25% | 39% | −1% |
| Transportation and storage | 13% | 13% | −52% | 107% | 60% |
| Accommodation and food service activities | 39% | 18% | −228% | −66% | −192% |
| Information and communication | 18% | 11% | 17% | −17% | 57% |
| Real estate activities | 19% | 0% | −27% | 118% | −7% |
| Professional, scientific and technical activities | −39% | 17% | −11% | 62% | 25% |
| Administrative and support service activities | 3% | 16% | 5% | 54% | −23% |
| Education | 83% | 63% | −10% | 9% | 52% |
| Human health and social work activities | 40% | 46% | 15% | 88% | −15% |
| Arts, entertainment and recreation | 14% | 14% | −72% | 111% | 193% |
| Information and communication technology | −2% | 13% | 22% | −47% | 80% |

Source: Compiled by the authors on the basis of data from the statistical agencies of Latvia, Estonia, and Lithuania.

Not all sectors' investments in environmental protection are reported by the statistical agencies of Latvia, Estonia, and Lithuania. The sectors for which we analyze data are presented in **Annex 1**. The analysis of companies' investments in environmental sustainability shows that the water supply, sewerage, waste management, and remediation activities sectors allocate the largest share of resources to operational decisions related to environmental improvement. The sector's investment in environmental protection averaged 52% of the total investment of all Baltic enterprises. Furthermore, the most profitable sector in the Baltics, manufacturing, accounted for 12% of the total sectoral investment in environmental sustainability in the Baltics (see Figure 6).

In sum, among the Baltic states, Latvian companies invested the most in environmental protection over the period, and Lithuanian companies show the greatest increase in environmental-protection investment in the period 2017-2022. Companies in the water supply, sewerage, waste management, and remediation activities sector had the highest investments in environmental protection in 2017-2022 for all Baltic countries.

The next independent variable we analyze is greenhouse gas emissions. The average decrease in pollution by Lithuanian, Latvian, and Estonian companies over the period is 7%. Estonia shows the fastest decrease in corporate pollution, with an average decrease of 12%. In examining the sectoral data, we see that transport, agriculture, forestry, fishing, and manufacturing are the most polluting sectors in the Baltic Sea region.

As the data presented in Table 8 show, on average, Lithuanian companies were the most polluting and Latvian companies the least polluting in the Baltic region in 2017-2022.

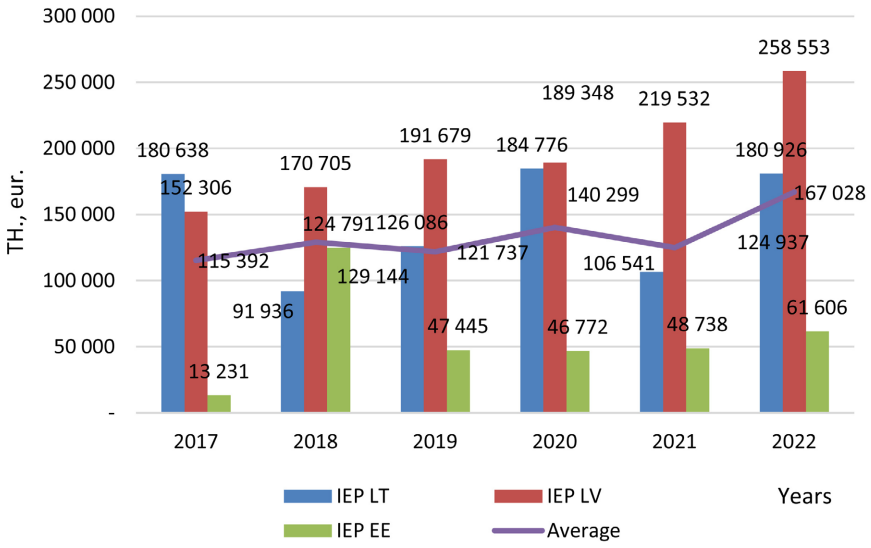


Figure 6. Trends in environmental investment by Lithuanian, Latvian, and Estonian companies. Source: Compiled by the author on the basis of data from the statistical agencies of Latvia, Estonia, and Lithuania.

**Table 8.** Lithuanian, Latvian, and Estonian greenhouse gas data trends.

| Year | kt of $CO_2$ equivalent | | |
|---|---|---|---|
| | Latvia Greenhouse Gas (GHG) emissions | Estonia Greenhouse Gas (GHG) emissions | Lithuania Greenhouse Gas (GHG) emissions |
| 2017 | 11,702 | 19,899 | 19,566 |
| 2018 | 12,238 | 18,818 | 19,652 |
| 2019 | 12,086 | 13,175 | 19,780 |
| 2020 | 11,437 | 10,199 | 19,785 |
| 2021 | 14,763 | 10,420 | 24,670 |
| 2022 | 6591 | 10,311 | 12,667 |
| Average | 11,469 | 13,804 | 19,353 |

Source: Compiled by the authors based on data from MacroTrends (2024).

Our analysis of the Baltic greenhouse gas data shows that Lithuanian companies have the greatest negative impact on the environment, with the highest greenhouse gas emissions in the Baltic region from 2017 to 2022. Latvian and Estonian companies are more environmentally friendly. Furthermore, when analyzing the greenhouse gas data by sector, we observe that sectors related to heavy industry contribute the most to environmental pollution.

After structuring the general trends of the dependent and independent variables, it is important to establish the interdependence of these indicators, that is, the correlation relationships. Therefore, we construct a correlation matrix using the Eviews software, and the summarized results are presented in **Table 9**.

The correlation analysis shows that net profits of Lithuanian and Estonian companies correlate more strongly with $CO_2$ than with environmental investments, on average by a factor of 0.21. The opposite trend is observed in the case of Latvia, with net profits 0.1 times more affected by environmental investments than $CO_2$ emissions. We find a moderate correlation ($r = 0.5$) between net profit and $CO_2$ emissions in the Latvian and Lithuanian sectors and a strong correlation ($r = 0.7$) between the dependent variable and investment in environmental protection in the Latvian case; this stands in contrast to the Lithuanian case ($r = 0.2$). Furthermore, the financial performance of Estonian companies has the weakest correlation with the independent variables.

The results show that there is (mostly) a negative correlation between net profit and $CO_2$ emissions, which means that a decrease in pollution from a company's activities can lead to an increase in its profits or vice versa. However, in some sectors (mostly manufacturing), there is a positive correlation between net profit and $CO_2$ emissions. This means that the relationship between $CO_2$ emissions and net profit varies by sector, but the general trend suggests that these variables move in opposite directions. The correlation analysis also shows that in the majority of the cases analyzed, there is a positive correlation between net profit and environmental investment, but there are sectors where the variables are negatively

**Table 9.** Results of sectoral correlation analysis for Lithuania, Latvia, and Estonia.

| LT | | | | | | LV | | | | | | EE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | NP based industry type and country | LT IEP | LT Greenhouse Gas (GHG) Emissions | Above 0,7? | Above 0,7? | No. | NP based industry type and country | LV IEP | LVGreenhouse Gas (GHG) Emissions | Above 0,7? | Above 0,7? | No. | NP based industry type and country | EE IEP | EE Greenhouse Gas (GHG) Emissions | Above 0,7? | Above 0,7? |
| 1 | NP of LT | 0,20 | (0,39) | - | - | 19 | NP of LV | 0,93 | (0,59) | Yes | - | 37 | NP of EE | 0,15 | (0,70) | - | Yes |
| 2 | A Agriculture, forestry and fishing | 0,03 | (0,46) | - | - | 20 | A Agriculture, forestry and fishing | 0,96 | (0,68) | Yes | - | 38 | A Agriculture, forestry and fishing | 0,11 | (0,56) | - | - |
| 3 | B Mining and quarrying | (0,22) | 0,05 | - | - | 21 | B Mining and quarrying | 0,92 | (0,81) | Yes | Yes | 39 | B Mining and quarrying | 0,17 | (0,09) | - | - |
| 4 | C Manufacturing | 0,02 | (0,14) | - | - | 22 | C Manufacturing | (0,48) | 0,77 | - | Yes | 40 | C Manufacturing | 0,26 | (0,98) | - | Yes |
| 5 | D Electricity, gas, steam and air conditioning supply | 0,47 | (0,65) | - | - | 23 | D Electricity, gas, steam and air conditioning supply | 0,91 | (0,80) | Yes | Yes | 41 | D Electricity, gas, steam and air conditioning supply | 0,21 | 0,69 | - | - |
| 6 | E Water supply, sewerage, waste management and remediation activities | (0,38) | 0,92 | - | Yes | 24 | E Water supply, sewerage, waste management and remediation activities | 0,76 | 0,12 | Yes | - | 42 | E Water supply, sewerage, waste management and remediation activities | (0,79) | (0,20) | Yes | - |
| 7 | F Construction | 0,28 | (0,49) | - | - | 25 | F Construction | 0,10 | (0,68) | - | - | 43 | F Construction | 0,98 | 0,24 | Yes | - |
| 8 | G Wholesale and retail trade, repair of motor vehicles and motorcycles | 0,19 | (0,32) | - | - | 26 | G Wholesale and retail trade, repair of motor vehicles and motorcycles | (0,08) | 0,43 | - | - | 44 | G Wholesale and retail trade, repair of motor vehicles and motorcycles | 0,03 | (0,09) | - | - |
| 9 | H Transportation and storage | 0,23 | (0,71) | - | Yes | 27 | H Transportation and storage | 0,94 | 0,56 | Yes | - | 45 | H Transportation and storage | 0,19 | (0,21) | - | - |
| 10 | I Accommodation and food service activities | (0,26) | (0,39) | - | - | 28 | I Accommodation and food service activities | 0,61 | (0,86) | - | Yes | 46 | I Accommodation and food service activities | (0,01) | (0,62) | - | - |
| 11 | J Information and communication | (0,26) | (0,86) | - | Yes | 29 | J Information and communication | 0,88 | (0,22) | Yes | - | 47 | J Information and communication | (0,22) | 0,15 | - | - |
| 12 | L Real estate activities | (0,26) | (0,27) | - | - | 30 | L Real estate activities | 0,84 | (0,59) | Yes | - | 48 | L Real estate activities | 0,13 | (0,72) | - | Yes |
| 13 | M Professional, scientific and technical activities | (0,26) | (0,18) | - | - | 31 | M Professional, scientific and technical activities | 0,77 | (0,52) | Yes | - | 49 | M Professional, scientific and technical activities | (0,80) | (0,05) | Yes | - |
| 14 | N Administrative and support service activities | (0,34) | 0,56 | - | - | 32 | N Administrative and support service activities | 0,82 | (0,69) | Yes | - | 50 | N Administrative and support service activities | 0,22 | (0,34) | - | - |
| 15 | P Education | 0,33 | (0,69) | - | - | 33 | P Education | (0,04) | (0,80) | - | Yes | 51 | P Education | 0,02 | 0,20 | - | - |
| 16 | Q Human health and social work activities | 0,05 | (0,24) | - | - | 34 | Q Human health and social work activities | 0,84 | 0,51 | Yes | - | 52 | Q Human health and social work activities | (0,12) | (0,82) | - | Yes |
| 17 | R Arts, entertainment and recreation | 0,11 | (0,59) | - | - | 35 | R Arts, entertainment and recreation | 0,85 | (0,61) | Yes | - | 53 | R Arts, entertainment and recreation | (0,08) | (0,70) | - | - |
| 18 | S Other service activities | 0,06 | (0,27) | - | - | 36 | S Other service activities | 0,85 | (0,37) | Yes | - | 54 | S Other service activities | (0) | (1) | - | - |

Source: Compiled by the authors on the basis of data from the statistical agencies of Lithuania, Latvia, and Estonia.

correlated.

The correlation analysis identifies the sectors of the Lithuanian, Latvian, and Estonian economies in which net profits are strongly correlated with at least one of the independent variables ($r = 0.7$). A list of these sectors is given in Table 10.

The correlation analysis in Table 9 shows that net profit is the most highly correlated with at least one of the independent variables in the seven sectors. However, the following sectors will be excluded from further analysis: professional, scientific, and technical activities, as well as transport and storage, as none of the companies with this profile are in the list of Baltic companies. Therefore, in the following section, we assess the CSR Index of 43 companies in the five Baltic countries by sector.

## 4.2. CSR Index Analysis

In this section, we analyze the companies listed in **Annex 2**. Our analysis of general trends of the CSR Index shows that the Baltic listed companies across sectors (manufacturing, information and communication, real estate operations, water supply, wastewater treatment, waste management, and remediation, human health, and social work) disclosed, on average, around 50% of the CSR Index criteria in their financial or social reporting over the period analyzed. The CSR Index of companies was 7% p.p. higher between 2020 and 2022 than between 2017 and 2021, which means that, over time, the Baltic-listed companies have disclosed more information relevant to consumers concerning the company's social responsibility (see Figure 7).

**Table 10.** Results of sectoral correlation analysis for Lithuania, Latvia, and Estonia.

| Selected to test sectors: | Will it be analyzed later? |
|---|---|
| Manufacturing | Yes |
| Information and communication | Yes |
| Real estate operations | Yes |
| Professional, scientific, and technical activities | **No** |
| Transport and storage | **No** |
| Water supply, wastewater treatment, waste management and recovery | Yes |
| Human health care and social work | Yes |

Source: Compiled by the author on the basis of data from the statistical agencies of Lithuania, Latvia, and Estonia.

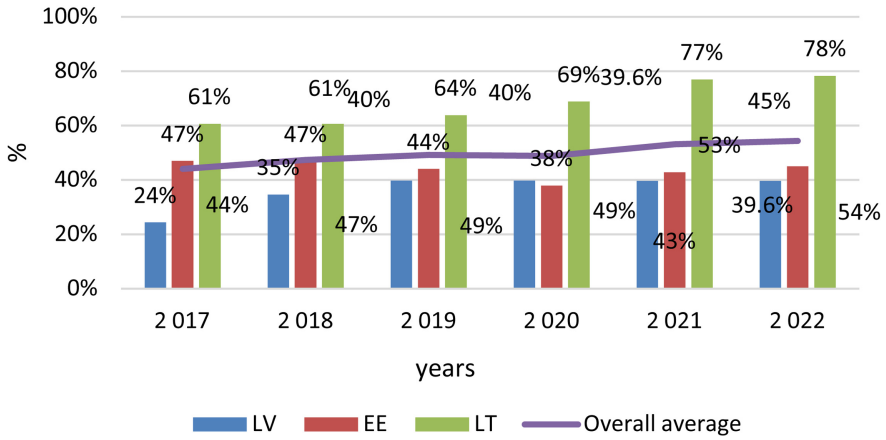


**Figure 7.** CSR index trends for Lithuanian, Latvian, and Estonian listed companies. Source: Compiled by the authors on the basis of data from the Nasaq OMX data basis.

In analyzing the by-country CSR index trends in the period under analysis depending on the country, we observe that Lithuanian listed companies in the sectors analyzed here made, on average, 24% more disclosures than similar companies in Latvia and 32% more than those Estonia, using the chosen CSR calculation methodology (for calculation details, pls. refer to **Annex 3**). It can be argued that Lithuanian-listed companies disclose more detailed and comprehensive information related to social responsibility. The results show that: 1) all selected companies listed in the Baltic states disclose at least a certain criterion constituting the CSR Index in their annual reports; 2) the level of CSR disclosure by most of the Baltic listed companies increased by an average of 5% from the 2017-2019 period to the 2020-2022 period.

When the results in Section 3.1 and Section 3.2 are compared, we find that the CSR Index of most of the Baltic-listed companies varies independently of the countries' investments in environmental protection. Although Latvian compa-

nies devote the most resources to environmental protection, their CSR Index values are not the highest of those assessed. The Lithuanian sectors are among the most profitable but among the most polluting in the Baltic region over the whole period analyzed. Despite exhibiting the highest levels of pollution in the Baltic, Lithuanian-listed companies satisfy the highest share of criteria that make up the CSR Index, which implies a negative correlation between the two variables analyzed. Moreover, there is a positive correlation between net profit and the CSR Index, which means that the more funds a company generates, the more resources it can devote to broader and more detailed social disclosures in its financial statements. This interaction is particularly evident for Lithuanian companies.

The next step is to analyze the trends in the CSR Index by sector. On average, companies belonging to the water supply, wastewater treatment, waste management, and reclamation sector are the most distinguished among the sectors analyzed; the average CSR Index value for the period 2017-2022 was 78% and approximately 48% p.p. higher than in the other sectors analyzed here. Companies belonging to the manufacturing and the information and communication sectors disclosed, on average, between 43% and 46% of the CSR Index factors in their financial statements over the period analyzed. Notably, the CSR disclosure levels are, on average, lowest in the human health care and social work (9%) and real estate (20%) sectors. Also, the overall trends in the CSR Index for all sectors over time show that the index value remained stable or increased in all sectors (see Table 11).

The analysis of general CSR trends by country and sector shows that the level of CSR discouragement varies by country and sector, and it is thus expected that the ESRS, which entered into force on January 1, 2023, will help in standardizing the companies' social responsibility discouragements. Moreover, some of the analyzed sectors have a low CSR index, which means that not all sectors have maintained a voluntary ESG and social responsibility disclosure regime. Companies in the water supply, wastewater treatment, waste management, and recovery sector, on average, disclosed more CSR-related information in their financial statements than other sectors; companies belonging to this sector are also distinguished by their high level of investment in environmental sustainability in comparison to other sectors during the sample period. Thus, partly on the basis of this sector's results, it can be argued that there is also a positive correlation between CSR and environmental investments on a country-by-country basis. However, the general trends of the CSR Index show that Lithuanian-listed companies tend to disclose more information on CSR. This suggests that their financial statements are of higher quality and have more content, which results in more added value for external consumers. As already mentioned, Lithuanian-listed companies show high profitability compared to the Baltic benchmark. It is thus likely that more of its profit-generating companies devote more funds and resources to the preparation of higher quality and more detailed financial

Table 11. CSR index trends of listed companies in Lithuania, Latvia, and Estonia by sector.

| Sectors | Average of CRI 2017 | Average of CRI 2018 | Average of CRI 2019 | Average of CRI 2020 | Average of CRI 2021 | Average of CRI 2022 |
|---|---|---|---|---|---|---|
| Manufacturing | 35% | 40% | 45% | 47% | 55% | 56% |
| LV | 12% | 21% | 25% | 25% | 35% | 35% |
| EE | 33% | 40% | 44% | 44% | 47% | 48% |
| LT | 60% | 60% | 65% | 74% | 83% | 85% |
| Information and communications | 41% | 41% | 43% | 43% | 46% | 46% |
| LV | 23% | 23% | 23% | 23% | 23% | 23% |
| EE | 0% | 0% | 5% | 5% | 15% | 15% |
| LT | 100% | 100% | 100% | 100% | 100% | 100% |
| Real estate transactions | 16% | 18% | 18% | 20% | 20% | 28% |
| LV | | | | N/A | | |
| EE | 17% | 21% | 21% | 25% | 25% | 40% |
| LT | 15% | 15% | 15% | 15% | 15% | 15% |
| Water supply, waste management and regeneration | 62% | 72% | 79% | 62% | 96% | 96% |
| LV | 62% | 85% | 100% | 100% | 100% | 100% |
| EE | 50% | 58% | 62% | 12% | 100% | 100% |
| LT | 75% | 75% | 75% | 75% | 87% | 87% |
| Human health care and social work | 8% | 8% | 8% | 8% | 8% | 15% |
| LV | 15% | 15% | 15% | 15% | 15% | 15% |
| EE | 0% | 0% | 0% | 0% | 0% | 15% |
| LT | | | | N/A | | |

Source: Compiled by the authors based on the Nasdaq OMX Baltic.

statements.

## 5. Conclusion

The literature identifies sustainable and traditional finance as serving the primary function of resource allocation, but sustainable finance also includes decisions oriented toward ESG decisions. This means that the allocation of sustainable financial resources is based on principles that are environmentally friendly, purpose- and value-driven, and profit-maximizing, whereas the traditional allocation of resources is often unsustainable and profit-maximizing.

The CSRD, which entered into force in 2023, has further strengthened the requirements for the reporting of corporate sustainability performance and expanded the range of companies that will be subject to the directive. The directive requires companies to report on sustainability on the basis of 12 ESRS, each covering a specific topic. The analysis of the main principles of the ESRS shows

that these standards require disclosure of material impacts, risks, and opportunities on a wide range of ESG topics. Therefore, the adaptation of these standards will allow the assessment of the impact of companies' activities on climate change, its culture, and other aspects of governance significantly impacting companies' financial decisions. Prior to ESRS's entry into force, the GRI was one of the most common benchmarks for company social responsibility disclosures. The main difference between these standards is their reporting methodology rather than the detailed indicators; the ESRS standards require a higher level of detail in relation to CSR activities.

Our review of the literature shows that the calculation methodologies used by studies assessing the level of CSR differ because the components of the social responsibility index are based on either international or national standards. It can be argued that this only shows that, prior to the emergence of the ESRS, the disclosure of CSR was non-standardized and difficult to compare.

In sum, the findings do not provide a unified picture of the relationship between ESG and financial performance. Moreover, the analysis of the results of other authors' studies shows that the most common approach to assessing the relationship between ESG and financial performance is to use regression analysis, where the independent variables tend to be various profitability indicators and the dependent variables tend to be structural components of ESG. It is believed that corporate green choices, or the environment score, which focuses on the development of technology and innovation to manage $CO_2$, are particularly important for society. $CO_2$ is one of the biggest contributors to global warming. Based on the results of studies by other authors, it can be argued that climate finance contributes to the reduction of $CO_2$ emissions. Various financial instruments are therefore used to control $CO_2$ emissions. One of the instruments is green technology innovation (and, more specifically, investment in sustainable technologies), which reduces $CO_2$ emissions to some extent.

After analyzing the theoretical aspects of the integration of sustainability into corporate financial management and taking into account the objective of the thesis, the research methodology is developed. First, we defined the research sample and period. Second, we identify trends in sectoral data of companies in the Baltic countries—Lithuania, Estonia, Latvia—related to net profit, environmental investments, and greenhouse gas emissions. Third, we conduct a correlation analysis to assess and identify the linkages among the Baltic countries and the relationships between dependent and independent variables. Fourth, based on the results of the correlation analysis, we calculate the CSR Index of certain listed companies in the Baltic states and assess these by sector. Fifth, the results of the study are evaluated, and conclusions and proposals are presented according to the established methodology.

We find that Latvian companies' net profits grew by 23%, on average, between 2017 and 2022, compared to 17% for Lithuania and 12% for Estonia. The sector-by-sector net profit trends in the Baltic countries show the highest net profit

margins for 2017 to 2022 in the following sectors: manufacturing, wholesale and retail trade, and the repair of motor vehicles and motorcycles. Also, the analysis of companies' investments in environmental protection shows that, of the Baltic companies examined, Latvian companies spent, on average, the most (€197,020 thousand) on environmental protection over the analysis period. In addition, the water supply, sewerage, waste management, and remediation activities sectors allocate the largest share of their funds to operational decisions related to environmental improvement. The sector's investment in environmental sustainability is, on average, 52% of the total investment of all Baltic companies. When assessing the $CO_2$ emissions of Baltic companies, we find that, on average, Lithuanian companies are the most polluting in the Baltic region in 2017-2022, while Latvian companies are the least polluting. On average, the emissions of Lithuanian, Latvian, and Estonian companies decreased by around 7% over the whole analysis period. The fastest decrease in pollution by Baltic enterprises is seen in Estonia, with an average decrease of 12%. In addition, looking at sectoral data, transport, agriculture, forestry, fishing, and manufacturing are the most polluting sectors in the Baltic region.

We carry out a correlation analysis on the overall trends for the dependent and independent variables. The correlation analysis shows that net profits of Lithuanian and Estonian companies correlate more strongly with $CO_2$ emissions than with investments in environmental protection by, on average, a factor of 0.21. The opposite trend is observed for the Latvian sectors. The results show that there is a mostly negative correlation between net profit and $CO_2$ emissions and a positive correlation between net profit and environmental investments. There are weak and very weak correlations between the dependent and independent variables in the sectors of professional, scientific, and technical activities, as well as transport and storage, which are, therefore, excluded from the sample for further analysis.

The general trends analysis of the CSR Index shows that the Baltic-listed companies in manufacturing, information and communications, real estate operations, water supply, wastewater treatment, waste management and remediation, human health and social work, on average, disclosed ~50% of the CSR Index criteria in their financial or social reporting over the whole period. Furthermore, the CSR Index remained stable or increased in all sectors. Most listed companies in the Baltic states disclose at least some of the CSR Index criteria in their annual reports. Moreover, the CSR disclosure level of the majority of Baltic-listed companies has increased by an average of 5% p.p. between the periods 2017-2019 and 2020-2022. An analysis of the by-sector CSR trends shows that, on average, companies in the water supply, wastewater treatment, waste management, and reclamation sector are the most outstanding of the sectors analyzed, with an average CSR index value of 78% in 2017-2022, approximately 48% p.p. higher than in the other sectors analyzed in this chapter. It can, therefore, be argued that CSR index trends vary depending on the countries and sectors analyzed, and it is

likely that the ESRS, which will enter into force on January 1, 2023, will help to standardize the companies' social responsibility discouragements. Moreover, the CSR Index is low for some of the analyzed sectors, which means that not all sectors of the Baltic-listed companies have voluntarily disclosed ESG-relevant information.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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# Annexes

## Annex 1. List of Sectors Analyzed

| Sectors: |
| --- |
| A Agriculture, forestry, and fishing |
| B Mining and quarrying |
| C Manufacturing |
| D Electricity, gas, steam, and air conditioning supply |
| E Water supply, sewerage, waste management, and remediation activities |
| F Construction |
| G Wholesale and retail trade, repair of motor vehicles and motorcycles |
| H Transportation and storage |
| I Accommodation and food service activities |
| J Information and communication |
| L Real estate activities |
| M Professional, scientific, and technical activities |
| N Administrative and support service activities |
| P Education |
| Q Human health and social work activities |
| R Arts, entertainment, and recreation |
| S Other service activities |

## Annex 2. Baltic-Listed Companies in the Nasdaq OMX

| No. | Ticker | Name | ISIN | Currency | MarketPl | List/segment |
|---|---|---|---|---|---|---|
| 1 | BAL1R | Amber Latvija | LV00001008 | EUR | RIG | Baltijos Papildomasis sąrašas |
| 2 | EGG | APF Holding | LV00001019 | EUR | RIG | Baltijos First North akcijų sąrašas |
| 3 | GZE1R | Latvijas Gāze | LV00001008 | EUR | RIG | Baltijos Papildomasis sąrašas |
| 4 | LJM1R | Latvijas Jūras | LV00001007 | EUR | RIG | Baltijos Papildomasis sąrašas |
| 5 | RKB1R | Rīgas kuģu bi | LV00001003 | EUR | RIG | Baltijos Papildomasis sąrašas |
| 6 | SAF1R | SAF Tehnika | LV00001011 | EUR | RIG | Baltijos Oficialusis sąrašas |
| 7 | SCM1R | Siguldas cilts | LV00001006 | EUR | RIG | Baltijos Papildomasis sąrašas |
| 8 | AIR | Airobot Techı | EE31000927 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 9 | ARC1T | Arco Vara | EE31000346 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 10 | BERCM | Bercman Tec | EE31000764 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 11 | EGR1T | Enefit Green | EE31001379 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 12 | GRB2G | Grab2Go | EE31001071 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 13 | HAE1T | Harju Elekter | EE31000042 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 14 | HPR1T | Hepsor | EE31000823 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 15 | LINDA | Linda Nektar | EE31000603 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 16 | MAGIC | TextMagic | EE31000734 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 17 | MODE | Modera | EE31000842 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 18 | MOLNR | J.Molner | EE31001090 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 19 | MRK1T | Merko Ehitus | EE31000983 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 20 | NCN1T | Nordecon | EE31000394 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 21 | PKG1T | Pro Kapital G | EE31000060 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 22 | PNKTD | Punktid Techı | EE31000891 | EUR | TLN | Baltijos First North akcijų sąrašas |
| 23 | PRF1T | PRFoods | EE31001010 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 24 | TPD1T | Trigon Prope | EE31000034 | EUR | TLN | Baltijos Papildomasis sąrašas |
| 25 | TSM1T | Tallinna Sada | EE31000216 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 26 | TVE1T | Tallinna Vesi | EE31000264 | EUR | TLN | Baltijos Oficialusis sąrašas |
| 27 | AKO1L | Akola Group | LT00001280 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 28 | AUG1L | AUGA group | LT00001274 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 29 | CTS1L | City Service | EE31001263 | EUR | VLN | Baltijos First North užsienio akcijų prekybos |
| 30 | EWA1L | East West Ag | LT00001320 | EUR | VLN | Baltijos First North akcijų sąrašas |
| 31 | GRG1L | Grigeo | LT00001020 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 32 | IGN1L | Ignitis grupė | LT00001157 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 33 | INL1L | INVL Baltic F | LT00001287 | EUR | VLN | Baltijos Papildomasis sąrašas |
| 34 | INR1L | INVL Baltic R | LT00001271 | EUR | VLN | Baltijos Papildomasis sąrašas |
| 35 | KNE1L | KN Energies | LT00001116 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 36 | KNR1L | Kauno energi | LT00001230 | EUR | VLN | Baltijos Papildomasis sąrašas |
| 37 | LGD1L | LITGRID | LT00001284 | EUR | VLN | Baltijos Papildomasis sąrašas |
| 38 | PTR1L | Panevėžio st | LT00001014 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 39 | PZV1L | Pieno žvaigžd | LT00001116 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 40 | RSU1L | Rokiškio sūri | LT00001003 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 41 | TEL1L | Telia Lietuva | LT00001239 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 42 | VLP1L | Vilkyškių pier | LT00001275 | EUR | VLN | Baltijos Oficialusis sąrašas |
| 43 | ZMP1L | Žemaitijos pi | LT00001218 | EUR | VLN | Baltijos Papildomasis sąrašas |

## Annex 3. Baltic-Listed Companies CSR Index Calculation

| No. | Ticl | Name | Is | Jri | Iki | Listsegment | Industry | Supersector | 2 017 | | 2 018 | | 2 019 | | 2 020 | | 2 021 | | 2 022 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Sum | CRI | Sum | CRI | Sum | CRI | Sum | CRI | Sum | CRI | Sum | CRI | |
| 1 | BAL1R | Amber Latvijas balzams | LV0 | EUR | RIG | Baltijos Papildomasis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 2 | 15% | 7 | 54% | 9 | 69% | 9 | 69% | 12 | 92% | 12 | 92% | |
| 2 | EGG | APF Holdings | LV0 | EUR | RIG | Baltijos First North akcijų sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | - | 0% | - | 0% | - | 0% | - | 0% | 2 | 15% | 2 | 15% | |
| 3 | GZE1R | Latvijas Gāze | LV0 | EUR | RIG | Baltijos Papildomasis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | 8 | 62% | 11 | 85% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 4 | LJM1R | Latvijas Jūras medicīnas centrs | LV0 | EUR | RIG | Baltijos Papildomasis sąrašas | Sveikatos priežiūra | Sveikatos priežiūra | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 5 | RKB1R | Rīgas kuģu būvētava | LV0 | EUR | RIG | Baltijos Papildomasis sąrašas | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 6 | SAF1R | SAF Tehnika | LV0 | EUR | RIG | Baltijos Oficialusis sąrašas | Telekomunikacijos | Telekomunikacijos | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | |
| 7 | SCM1R | Siguldas siltsiletu un mākslīgās apsēklošanas stacija | LV0 | EUR | RIG | Baltijos Papildomasis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| | | | | | RIG | | | | 19 | 69% | 27 | 88% | 31 | 96% | 31 | 88% | 35 | 96.8% | 38 | 96.8% | 392% |
| 8 | AIR | Airobot Technologies | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Pramoniniai gaminiai | Statyba ir medžiagos | - | 0% | - | 0% | - | 0% | - | 0% | 1 | 8% | 2 | 15% | |
| 9 | ARC1T | Arco Vara | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Nekilnojamasis turtas | Nekilnojamasis turtas | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | 6 | 46% | |
| 10 | BERCA | Bercman Technologies | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | - | 0% | - | 0% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 11 | EGR1T | Enefit Green | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | - | 0% | 2 | 15% | 3 | 23% | 3 | 23% | 13 | 100% | 13 | 100% | |
| 12 | GRB2G | Grab2Go | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | - | 0% | - | 0% | - | 0% | - | 0% | 3 | 23% | 3 | 23% | |
| 13 | HAE1T | Harju Elekter Grupp | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 14 | HPR1T | Hepsor | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Nekilnojamasis turtas | Nekilnojamasis turtas | - | 0% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 7 | 54% | |
| 15 | LINDA | Linda Nektar | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 16 | MAGIC | TextMagic | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Telekomunikacijos | Telekomunikacijos | - | 0% | - | 0% | - | 0% | - | 0% | 2 | 15% | 2 | 15% | |
| 17 | MODE | Modera | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Technologijos | Technologijos | - | 0% | - | 0% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 18 | MOLNF | J.Molner | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Sveikatos priežiūra | Sveikatos priežiūra | - | 0% | - | 0% | - | 0% | - | 0% | - | 0% | 2 | 15% | |
| 19 | MRK1T | Merko Ehitus | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Pramoniniai gaminiai | Statyba ir medžiagos | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | 3 | 23% | |
| 20 | NCN1T | Nordecon | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Pramoniniai gaminiai | Statyba ir medžiagos | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 21 | PKG1T | Pro Kapital Grupp | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Nekilnojamasis turtas | Nekilnojamasis turtas | 4 | 31% | 4 | 31% | 4 | 31% | 6 | 46% | 6 | 46% | 6 | 46% | |
| 22 | PNKTD | Punktid Technologies | EE3 | EUR | TLN | Baltijos First North akcijų sąrašas | Technologijos | Technologijos | - | 0% | - | 0% | - | 0% | - | 0% | 2 | 15% | 2 | 15% | |
| 23 | PRF1T | PRFoods | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 3 | 23% | 3 | 23% | 5 | 38% | 5 | 38% | 5 | 38% | 5 | 38% | |
| 24 | TPD1T | Trigon Property Development | EE3 | EUR | TLN | Baltijos Papildomasis sąrašas | Nekilnojamasis turtas | Nekilnojamasis turtas | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 25 | TSM1T | Tallinna Sadam | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | 5 | 38% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 26 | TVE1T | Tallinna Vesi | EE3 | EUR | TLN | Baltijos Oficialusis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | 13 | 100% | 13 | 100% | 13 | 100% | - | 0% | 13 | 100% | 13 | 100% | |
| | | | | | TLN | | | | 57 | 53% | 71 | 66% | 79 | 74% | 66 | 62% | 92 | 86% | 101 | 94% | 446% |
| 27 | AKO1L | Akola Group | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 3 | 23% | 3 | 23% | 5 | 38% | 5 | 38% | 5 | 38% | 5 | 38% | |
| 28 | AUG1L | AUGA group | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 12 | 92% | 12 | 92% | 12 | 92% | 12 | 92% | 13 | 100% | 13 | 100% | |
| 29 | CTS1L | City Service | EE3 | EUR | VLN | Baltijos First North užsienio akcijų pr | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | 6 | 46% | 6 | 46% | 6 | 46% | 6 | 46% | 13 | 100% | 13 | 100% | |
| 30 | EWA1L | East West Agro | LT0 | EUR | VLN | Baltijos First North akcijų sąrašas | Pramoniniai gaminiai | Pramoninės prekės ir paslaugos | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 31 | GRG1L | Grigeo | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Pagrindinės medžiagos | Pagrindiniai ištekliai | 5 | 38% | 5 | 38% | 5 | 38% | 12 | 92% | 13 | 100% | 13 | 100% | |
| 32 | IGN1L | Ignitis grupė | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 33 | INL1L | INVL Baltic Farmland | LT0 | EUR | VLN | Baltijos Papildomasis sąrašas | Nekilnojamasis turtas | Nekilnojamasis turtas | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 34 | INR1L | INVL Baltic Real Estate | LT0 | EUR | VLN | Baltijos Papildomasis sąrašas | Nekilnojamasis turtas | Nekilnojamasis turtas | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | 2 | 15% | |
| 35 | KNE1L | KN Energies | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 36 | KNR1L | Kauno energija | LT0 | EUR | VLN | Baltijos Papildomasis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | 6 | 46% | 6 | 46% | 6 | 46% | 6 | 46% | 6 | 46% | 6 | 46% | |
| 37 | LGD1L | LITGRID | LT0 | EUR | VLN | Baltijos Papildomasis sąrašas | Komunalinės paslaugos | Komunalinės paslaugos | 7 | 54% | 7 | 54% | 7 | 54% | 7 | 54% | 13 | 100% | 13 | 100% | |
| 38 | PTR1L | Panevėžio statybos trestas | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Pramoniniai gaminiai | Statyba ir medžiagos | 9 | 69% | 9 | 69% | 9 | 69% | 9 | 69% | 10 | 77% | 13 | 100% | |
| 39 | PZV1L | Pieno žvaigždės | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 7 | 54% | 7 | 54% | 12 | 92% | 12 | 92% | 13 | 100% | 13 | 100% | |
| 40 | RSU1L | Rokiškio sūris | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 8 | 62% | 8 | 62% | 8 | 62% | 12 | 92% | 13 | 100% | 13 | 100% | |
| 41 | TEL1L | Telia Lietuva | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Telekomunikacijos | Telekomunikacijos | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 42 | VLP1L | Vilkyškių pieninė | LT0 | EUR | VLN | Baltijos Oficialusis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| 43 | ZMP1L | Žemaitijos pienas | LT0 | EUR | VLN | Baltijos Papildomasis sąrašas | Kasdienino vartojimo prekės | Maistas, gėrimai ir tabakas | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | 13 | 100% | |
| | | | | | VLN | | | | 134 | 84% | 134 | 84% | 143 | 89% | 150 | 94% | 170 | 77% | 173 | 78% | 606% |