VILNIUS UNIVERSITY
BUSINESS SCHOOL

SUSTAINABLE CORPORATE FINANCE AND INVESTMENTS

Justina Rakauskaitė

MASTER'S THESIS

ASV VEIKSNIŲ ĮTAKA ĮMONIŲ AKCIJŲ KAINOMS	**THE IMPACT OF ESG PERFORMANCE ON STOCK PRICES**

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Name, surname, and scientific degree of the supervisor

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SUMMARY

VILNIUS UNIVERSITY
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JUSTINA RAKAUSKAITE
ESG IMPACT ON STOCK PRICES

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The purpose of this master's thesis is to research the impact of ESG on stock prices. There is a research gap in ESG impact on stock price in the Baltic and Nordic regions, therefore the purpose of this thesis is to analyze the ESG impact on stock prices in these regions as well as compare the results. The goals of this research are to analyze the origins and development of the term ESG as well as the previous research on ESG and stock prices; create the most suitable quantitative research model, and to analyze ESG impact on stock prices in the Nordic and Baltic regions. The fixed-effects panel (unbalanced) regression analysis results show that ESG impacts stock prices, but the ESG scores are more impactful for the companies that are located in the Nordic region. The research also finds that environmental scores are the most impactful in the Baltic region and social and governance score are more impactful in the Nordic region. The analyzed literature as well as the conducted research shows that ESG scores have an impact on companies' stock prices and that this data is important to investors. The research has not been published and can only be published with the knowledge and the approval of the author.

SANTRAUKA

VILNIAUS UNIVERSITETO
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Trumpas darbo apibūdinimas:

Šio baigiamojo magistro darbo tikslas – ištirti ASV veiksnių įtaką akcijų kainoms. Yra nedaug tyrimų, susijusių su ASV veiksnių įtaka akcijų kainoms Baltijos ir Šiaurės šalių regionuose, todėl šio darbo tikslas yra išanalizuoti ASV veiksnių įtaką akcijų kainoms šiuose regionuose bei palyginti gautus rezultatus. Šio tyrimo tikslai – išanalizuoti ASV termino kilmę ir raidą bei ankstesnius ASV ir akcijų kainų tyrimus; sukurti tinkamiausią kiekybinio tyrimo modelį ir išanalizuoti ASV įtaką akcijų kainoms Šiaurės ir Baltijos regionuose. Fiksuotų efektų panelinės (nesubalansuotos) regresinės analizės rezultatai rodo, kad ASV veiksniai įtaką akcijų kainoms daro, tačiau ASV balai labiau paveikia Šiaurės šalių regione įsikūrusias bendroves. Tyrime taip pat nustatyta, kad aplinkosaugos balai didžiausią įtaką daro Baltijos regione, o socialiniai ir valdymo balai – Šiaurės šalių regione. Išnagrinėta literatūra ir atliktas tyrimas rodo, kad ASV veiksniai turi įtakos įmonių akcijų kainoms ir kad šie duomenys yra svarbūs investuotojams. Tyrimas anksčiau nepublikuotas ir gali būti publikuojamas tik informavus autorę ir jai pritarus.

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INTRODUCTION

Background information

Sustainability is becoming increasingly more important for every individual who cares about the future. The planet is suffering the effects of climate change, growing population, and pollution. It is now widely understood that the current ecological conditions need to be changed and changes need to be made universally to continue having an environment to live in. Therefore, sustainability has become an important topic for both private people and for companies who care about their stakeholders and investors. In recent years, there has been a growing interest among investors and stakeholders in the Environmental, Social, and Governance (ESG) performance of companies. The ESG score of a company is a measure of its commitment to sustainable business practices, its impact on the environment, its social responsibility, and its corporate governance. ESG performance has become an important consideration for investors, who more often view this measure as a predictor of long-term financial performance and risk management. Along investors, scientists are interested in this topic as well and new research articles are being published every year regarding this topic. However, not many scholars analyze the ESG impact on stock prices in the Baltic and the Nordic regions. This thesis is relevant due to its specific focus on the impact of ESG performance on stock prices in the Nordics and Baltics. It fills a research gap in this region and provides valuable insights into the relationship between ESG and share prices in these regions. The findings contribute to the understanding of the relationship between ESG scores of the companies and their stock prices and have the potential to influence decision-making for companies and investors.

The growing attention paid to sustainability has led to a proliferation of scholarly research investigating the effects of ESG factors on business outcomes. As a result, numerous studies have been conducted to evaluate the impact of ESG considerations on corporate performance, risk management, innovation, stakeholder engagement, and other relevant dimensions of business operations. ESG and stock return has been analyzed by Gavrilakis, Floros (2023), Torre et al. (2020), Pedersen et al. (2020), Huq et al. (2022), Lapinskiene et al. (2023), Li et al. (2022), Koelbelz et al. (2021), Al-Hiyari and Kolsi (2021), Bolognesi and Burchi (2023), Shanaev and Ghimire (2021), Luo (2022), Azmi et al. (2020), Lueg and Pesheva (2021). ESG and stock price crash risk, stock price volatility was analyzed by Yoon et al.

(2018), Moalla and Dammak (2022), Kvam et al. (2022), Bae et al. (2021), Gao et al. (2022), Li et al. (2022). Results of these research articles are two-sided. Most of the researchers show that there is a strong association between ESG scores and companies' stock returns, it is shown in the research by Li et al. (2022), Koelbelz et al. (2022) and Kvam et al. (2022). However, other scientists – Torre et al. (2020), Gavrilakis and Floros (2023), Luo (2022), Cornell (2021) - claim that there is no strong relationship between companies' ESG score and its stock prices, the relationship is negative or that the link is only prevalent in certain (sensitive) industries.

Research purpose, questions, and objectives

As mentioned earlier, previous research results on the topic are mixed. The relationship between ESG and the companies' share price is considered positive in some studies, but negative in other studies. Results also vary according to the regions the studies were conducted in. Most of the freely available studies on ESG impact on stock prices were conducted in Asia and very few studies have made comparisons between results in different regions. This research gap in the literature on the relationship between ESG factors and stock prices presents and comparison of different regions creates an opportunity to explore the discrepancies among the previous studies and to expand the current understanding of this complex relationship.

It is widely acknowledged that countries in Northern Europe are the most sustainable worldwide. According to The Green Future Index (2022), all 5 Nordic countries – Iceland, Denmark, Norway, Finland, Sweden – are in the top 10 most sustainable countries in the world. On the other hand, Baltic countries are far from the top (Streimikiene et al., 2023). To the best of authors knowledge, *no studies have compared the impact of ESG information disclosure on stock prices in the Baltic and Nordic regions.* This indicates the need for a comparative analysis that considers the unique characteristics and contextual factors of these two regions. Addressing these gaps can enhance the existing knowledge base and provide more insights into the relationship between ESG factors and stock prices in the stock markets in these regions.

Due to a lack of research in the Nordic and Baltic regions, the *purpose of this master thesis is to investigate the impact of ESG performance on stock prices in companies that are in the Nordics and compare the results to companies that are based in the Baltics*. The study aims to analyze the impact of ESG on companies' stock prices in the Nordic and the Baltic regions and compare the results.

To reach this goal, this study employs a quantitative research method. The research is conducted using a panel data analysis of publicly traded firms on Nordic and Baltics stock

exchanges, across different industries. The study uses stock price data and ESG performance ratings from established databases.

The objectives of this study are:

1. To theoretically analyze the origins and development of the term ESG and previous research on ESG's impact on companies' stock prices.
2. To create the most suitable quantitative research method to analyze the ESG impact on stock prices.
3. To analyze how ESG influences companies' stock prices in Nordics and Baltics and compare the results in different regions.

Based on the existing literature, the first hypothesis of the thesis is that ESG scores influence stock prices. In addition, certain ESG factors, specifically environmental performance, has a greater impact on stock prices than other pillars. The third hypothesis is that ESG performance is more impactful on the companies in Nordic countries than in Baltic countries.

One of the difficulties and limitations that may be encountered in this study is the availability and quality of ESG data. While there has been a growing demand for ESG data, there is still a lack of consistency and comparability across different ratings agencies and databases. Another limitation is the potential endogeneity between ESG performance and stock prices, which may require advanced econometric techniques to control such biases. The structure of the study is as follows. In the first theoretical chapter the theoretical background of the research is explained. Literature review provides an overview of the existing research on ESG performance and its impact on stock prices. The second chapter presents the research design, data sources, sample selection, and data analysis methods used in the study. The results of the empirical analysis are presented in the third chapter. Lastly, a summary of the main findings, conclusions, and implications of the study are to be presented in the last chapter.

1. DEVELOPMENT OF THE TERM ESG AND EXISTING RESEARCH ON ESG IMPACT ON STOCK PRICES, CRASH RISK AND VOLATILITY

The topic of environmental, social, and governance (ESG) has gained significant attention in recent years, in the last couple of decades. Because of a more conscious society, companies are increasingly being held accountable for their impact on the environment, social issues, and governance practices. However, the meaning of ESG is not always clear, and there is often confusion and ambiguity surrounding the term. To address this issue, this master's thesis aims to investigate the true meaning of ESG and its origins. The first chapter of this thesis delves into the definition(s) of ESG and other sustainability and investments-related terms. This section also highlights the problematic nature of ESG, including the challenges in measuring and quantifying the impact of companies' ESG practices.

Furthermore, beyond understanding the meaning and interpretations of ESG, this thesis analyzes the studies conducted on the topic, specifically focusing on the impact of ESG on stock prices. With growing awareness of ESG factors among investors, researchers, such as Torre, et al. (2020), Yoon, et al. (2018), Shanaev and Ghimire (2021) have conducted numerous studies to explore the relationship between a company's ESG performance, its financial performance, and stock prices. Analysis of the previous studies summarizes the main findings according to the study type and region the study was conducted.

1.1 Development and importance of ESG

This subsection is focused on the term ESG which stands for Environmental, Social, and Governance. With growing evidence suggesting that companies with strong ESG practices tend to have a lot of potential to perform better over the long term (Lapinskienė et al., 2023), as a result, ESG considerations have become an integral part of investment decision-making. However, the concept of ESG is not without its challenges and criticisms, including issues around measurement, because currently there is no universal ESG score calculation, standardization, and the potential for greenwashing (Yu et al., 2020). This chapter presents the history and the origins of the ESG concept, as well as the meaning of each of the pillars, and some of the key debates and critiques surrounding ESG.

1.1.1 Origin and development of the terms CSV, CSR, ESG

It is generally assumed that the main “objective of a firm is to maximize shareholder value” (Webster, 2014:111). So why should investors care about anything other than numbers and their pursuit to make as much money as possible? In the earlier articles about social responsibility, it is clear that it was not a universally valued concept as it is nowadays. Economist Milton Friedman in his article "The Social Responsibility of Business Is to Increase Its Profits," (Friedman, 2007) argues that a corporation's primary responsibility is to maximize profits for its shareholders within the limits of the law and ethical norms. According to him, only a private person can have responsibilities, not a company: “a corporation is an artificial person and, in this sense, may have artificial responsibilities, but “business” cannot be said to have responsibilities, even in this vague sense” (Friedman, 2007:173). Friedman claims that the pursuit of social responsibility by businesses distracts from their core function, which is to create wealth for shareholders. The economist believes that social and economic progress is best served through free markets and individual initiative, and not through corporate social responsibility. He suggests that if corporations want to contribute to social causes, they should do that by voluntary actions, rather than by compromising their profit motive because if socially responsible actions reduce shareholder returns, it means that the executive is spending their money instead of bringing profit (Friedman, 2007:174) which would mean that the executive is acting against their interests.

Now, considering climate change, pollution, and growing population, sustainability is considered intervened in our daily lives and considered not only a business issue but a survival issue as well (Pellegrini et al., 2022). Consumers are pushed to consume less, to be environmentally conscious, reduce waste, and recycle, but `big changes have to come not from ordinary people. Companies that produce goods and offer services hold huge power and control over resources in their hands. Climate crisis and financial crises show how important corporate responsibility is (Pellegrini et al., 2022). Therefore, many economists don’t agree with Friedman's point that social responsibility is only important for private people and should only be important for businesses when it aligns with their business goals. For example, Michael Porter and Mark Kramer wrote an article "Creating Shared Value" (2011) in which they propose a framework called "Creating Shared Value", which integrates social and environmental considerations into a company's core business strategy. The authors argue that

businesses can benefit from actively addressing social problems while generating profits. The article presents successful examples where businesses have implemented the CSV approach, demonstrating that it can drive innovation, competitive advantage, and positive societal change while creating value for both society and shareholders (Porter and Kramer, 2011:14).

While analyzing the relationship between sustainability and businesses, there has been developed more than one term that relates to sustainable investing. The term CSR (Corporate Social Responsibility) was presented and explained by Carroll (1999). According to Carrol, a company has four responsibilities: to produce goods and be profitable, to follow and abide by the law, to act ethically, and to act towards social purposes (Carroll, 1999). CSR encompasses a company's voluntary actions to integrate social and environmental concerns into its operations and interactions with stakeholders. Due to an increased interest from shareholders, over 85% of companies in S&S500 are including it in their agenda. CSR is a general understanding which means that companies have responsibilities that are not only required by laws, but by society as well – companies must create value in human capital, act in favor of the environment, and care for consumer rights (Pellegrini et al., 2022). Considering that CSR is only a goal and an approach, it is needed to have a measurement that shows how socially responsible the companies are. In order to calculate the result, an ESG score is used (Dathe et al., 2022), so the aim is materialized, and it is possible to tell how good a company is at being sustainable.

The term "environmental, social, and governance (ESG) investing" has gained significant traction in recent years, but its origins can be traced back to 2004 when it was first mentioned in "The Global Compact Leaders Summit: United Nations Headquarters, 24 June 2004: final report." This report was the culmination of the efforts of a total of 20 companies from the financial industry who came together to give recommendations on how businesses could integrate ESG issues into their analysis, asset management, and securities brokerage in a way that would be rewarding for all stakeholders: “we believe that corporate governance systems can play a key role in implementing many of the recommendations in this report, particularly concerning better transparency and disclosure, linking executive compensation to longer-term drivers of shareholder value and improving accountability” (The Global Compact, 2004:4). The report emphasized the importance of corporate governance systems in implementing the recommendations, particularly regarding better transparency and disclosure, linking executive compensation to longer-term drivers of shareholder value, and improving accountability. The authors believed that these measures would help create a more sustainable and responsible business environment that would ultimately benefit both companies and

investors. The report also recognized the interdependent relationship between a healthy economy, civil society, and the planet. It stated that "successful investment depends on a vibrant economy, which depends on a healthy civil society, which is ultimately dependent on a sustainable planet." (The Global Compact, 2004:3) This acknowledgment of the importance of environmental and social issues in investing marked a turning point in the financial industry's approach to investing. Investors are increasingly turning to funds that prioritize ESG considerations and are carefully selecting companies that align with their values and goals (Esty and Cort, 2020:4). These investors are not only looking for financial returns but also for companies that prioritize sustainability, social responsibility, and ethical business practices. The ESG concept is widely used in capital markets as a sustainability tool, where socially conscious investors assess organizations' future financial performance based on their conduct, ESG has the potential to improve traditional financial analysis because these companies are likely to outperform their competitors in the long run (Lapinskiene at al., 2023).

Table 1. *Terms associated with responsible investing.*

Term	Definition
CSV (Creating Shared Value)	A framework proposed by Michael Porter and Mark Kramer that integrates social and environmental considerations into a company's core business strategy. It argues that businesses can benefit from actively addressing social problems while generating profits. The CSV approach aims to drive innovation, gain competitive advantage, and create positive societal change while creating value for both society and shareholders. CSV demonstrates that social responsibility can align with business goals and contribute to long-term success.
CSR (Corporate Social Responsibility)	The voluntary actions taken by a company to integrate social and environmental concerns into its operations and interactions with stakeholders. It encompasses the responsibilities beyond legal requirements that companies have towards society and the environment. CSR includes creating value in human capital, acting in favor of the environment, and caring for consumer rights. Shareholders' interest in CSR has led to its adoption by many companies, with over 85% of S&P 500 companies including it in their agenda.

ESG (Environmental, Social, and Governance)	An approach to investing that considers environmental, social, and governance factors in addition to financial performance. It assesses a company's sustainability, social responsibility, and ethical practices to determine its long-term potential and risk. ESG investing has gained traction as investors increasingly prioritize sustainability and seek companies aligned with their values and goals.

Source: made by the author, based on Carroll (1999), The Global Compact (2004), Porter and Kramer (2011).

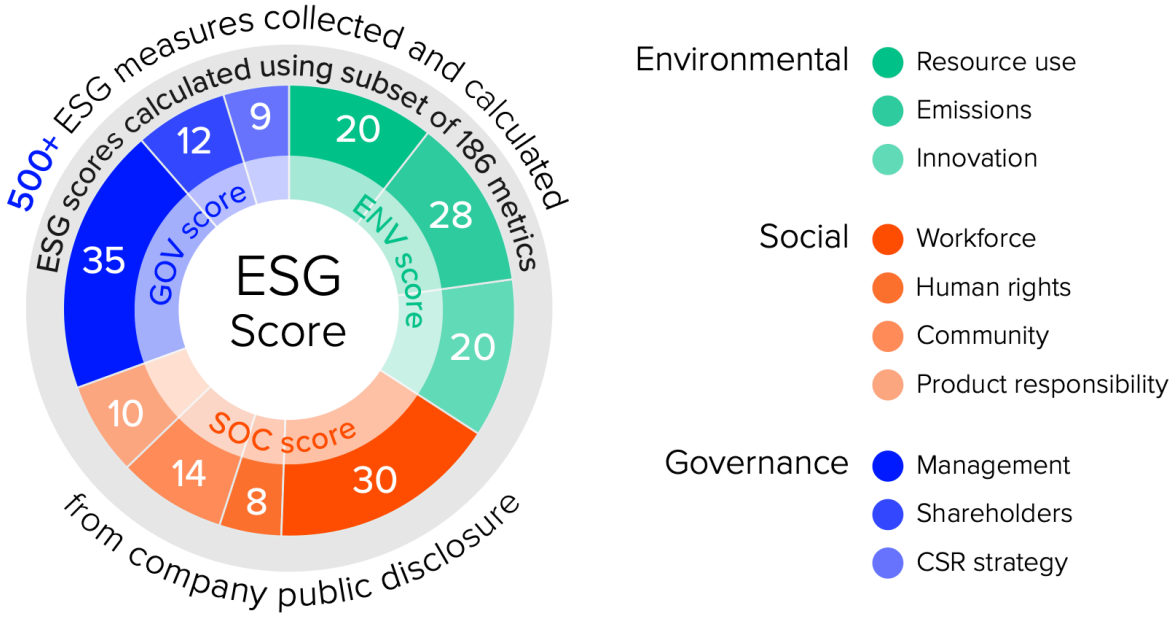
According to Esty and Cort (2020:3), the growing number of investors who focus on the ESG performance of companies in their portfolios has led to a skyrocketing demand for better ESG metrics and reporting. This demand has led to the development of various ESG frameworks and metrics, which allow investors to assess a company's environmental impact, social responsibility, and governance practices. The importance of ESG considerations in investing has also led to increased pressure on companies to improve their ESG performance. As more investors prioritize ESG factors in their investment decisions, companies that fail to prioritize sustainability and social responsibility risk being left behind.

The growing importance of ESG considerations in investing has led to the development of various methodologies and frameworks. While some argue that a company's primary responsibility is to maximize profits for shareholders, others believe that businesses can benefit from actively addressing social problems while generating profits. CSR encompasses voluntary actions to integrate social and environmental concerns into operations, and ESG scores are used to measure social responsibility. Investors increasingly prioritize ESG factors and companies that fail to prioritize sustainability risk being left behind. Overall, companies' sustainability actions turned from something that is only an approach to an actual score that is calculated and can be compared with other companies' scores.

1.1.2 Environmental, social, and governance pillars

Unlike standard financial metrics that are relatively straightforward to measure and internationally defined by accounting standards, identifying, and measuring ESG issues hold greater challenges. However, the increasing demand for reliable ESG data has prompted financial data providers to expand and enhance their services. Unfortunately, there is significant variation in the application and indicators used for ESG metrics, leading to

inconsistencies among data providers in assessing the same company. This lack of standardization can create confusion and differing assessments of ESG issues (Pellegrini et al., 2022).



Source: ESG scores from Refinitiv, Refinitiv (2021).

Before exploring the calculation of the ESG scores, it is needed to define each of the ESG pillars first. Here is the summarized meaning of each of the ESG pillars, according to *Environmental, Social, And Governance Scores From Refinitiv*, *ESG Guidelines for Baltic Boards – What, Why, and How* presented by Baltic Institute of Corporate Governance and Ernst & Young and Moody's *General Principles for Assessing Environmental, Social and Governance Risks Methodology:*

Environmental pillar: The environmental pillar of ESG focuses on a company's impact on the natural environment. It assesses how businesses manage their use of natural resources, their commitment to environmental sustainability, and their efforts to mitigate negative environmental effects. Factors considered within the environmental pillar may include carbon emissions, waste management, water usage and recycling, energy consumption and efficiency, renewable energy adoption, pollution prevention, and conservation practices.

Social pillar: The social pillar of ESG examines a company's relationships with its employees, customers, communities, and other stakeholders. It encompasses factors related to social responsibility and human rights, including fair labor practices, employee diversity, equality and inclusion, human capital and employee engagement, ethical supply chain management, community engagement, customer satisfaction, product safety, data privacy, and

philanthropy. It assesses how companies contribute to societal well-being and address social challenges.

Governance pillar: The governance pillar of ESG focuses on the structure, policies, and practices that govern a company's operations. It assesses the effectiveness of a company's leadership, board of directors, executive compensation, risk-mitigation and management, transparency, and ethical standards. The governance pillar examines issues such as board diversity and independence, shareholder rights, stakeholder engagement, anti-corruption measures, executive accountability, and compliance with legal and regulatory frameworks. It aims to ensure that companies are managed ethically and responsibly.

Table 2. *Key points of Environmental, Social and Governance pillars*

Pillar	Key Points
Environmental	- Company's impact on the natural environment, mitigation of negative environmental effects. - Carbon emissions, waste management, water usage and recycling, energy consumption and efficiency, renewable energy adoption, pollution prevention, and conservation practices.
Social	- Company's relationships with employees, customers, communities, and other stakeholders. - Social responsibility and human rights practices. - Fair labor practices, employee diversity, equality and inclusion, human capital and employee engagement. - Ethical supply chain management.
Governance	- Effectiveness of a company's leadership and board of directors. - Executive compensation, risk-mitigation and management, transparency, and ethical standards. - Consider anti-corruption measures, executive accountability, and compliance with legal and regulatory frameworks.

Source: made by the author, based on Baltic Institute of Corporate Governance & EY (2021), Refinitiv (2021), and Moody's (2021).

ESG ratings are assigned by external firms with their unique methodologies to evaluate a company's ESG performance. Currently, there is no standardized approach to this process, and individual companies employ their own methods to determine ESG ratings. The significance of ESG scores and ratings lies in their ability to provide a comprehensive assessment of a company's performance in the realms of environmental, social, and governance

factors. Usually, ESG scores are from 0 to 100 and a higher score than 70 is considered good, a lower score than 50 is considered bad. The top-rated ESG score providers, are Sustainalytics, MSCI, EcoVadis, and, Bloomberg, which employ different approaches in collecting data and calculating ESG scores, according to White (2022). While they all aim to evaluate companies' environmental, social, and governance performance, there are variations in their methodologies and areas of focus.

First of all, Bloomberg employs a scientific methodology for scoring ESG performance, utilizing a bottom-up, model-driven approach that mostly relies on self-reported information publicly available (Bloomberg, 2021). The scoring system includes separate scores for environmental (E), social (S), and governance (G) aspects, with a scale ranging from 0 to 100, where a score closer to 100 indicates superior performance. To ensure accuracy and consistency with original corporate information, Bloomberg emphasizes the use of voluntary disclosures obtained directly from primary sources for the E and S scores. These primary sources come from various channels, such as sustainability reports, annual filings, proxy statements, corporate governance reports, supplemental releases, and company websites. Bloomberg's approach to E and S Scores follows a hierarchical structure consisting of pillars, issues, sub-issues, and fields. Each issue comprises at least one sub-issue that captures relevant E and S data fields. In the context of the oil and gas sector, specific pillars, issues, and sub-issues are established to assess the environmental and social performance of companies operating within this industry (Bloomberg, 2021).

The methodology employed by Sustainalytics involves assessing the exposure of companies to ESG risk through the evaluation of 20 material ESG issues across different sub-industries. The exposure score is subject to adjustments through an extensive consultation process and issuer-specific considerations. Additionally, Sustainalytics assesses the management of ESG risk by considering controversies and assigning a management score. The rating framework incorporates the concept of manageable and unmanageable risk, where manageable risk refers to the portion that can be controlled through policies and programs, while unmanageable risk remains inherent irrespective of management practices.

The ESG Risk Rating score is determined by aggregating the unmanaged risk for each material ESG issue, and companies are classified into one of five ESG risk categories. The research process for ESG Risk Ratings involves data collection from diverse sources, such as corporate publications, news outlets, NGO reports, and issuer feedback (Sustainalytics, 2020). Quality and peer reviews are conducted to ensure accuracy and consistency in the ratings. Sustainalytics emphasizes engaging with issuers through an annual update feedback process,

allowing them to provide input and review research findings before publication. The company also maintains a dedicated Issuer Relations team to facilitate effective communication. Sustainalytics has been a prominent ESG research, ratings, and data firm for over 25 years (Sustainalytics, 2020).

EcoVadis has an inclusive approach rather than an exclusionary one to drive impactful change at scale and engage all stakeholders in a sustainable transition (EcoVadis, 2022). Instead of solely focusing on industries and companies with a positive impact, EcoVadis allows companies from resource-intensive industries to achieve a high score if they have advanced management systems addressing environmental, labor, and human rights, ethics, and sustainable procurement issues while actively minimizing their negative impact. Furthermore, EcoVadis, unlike other ESG score providers, awards medals based on the overall sustainability score of rated companies, with requirements implemented to maintain their reputation as a socially responsible entity (EcoVadis, 2022). However, starting from January 2022, medals are restricted for companies operating in certain industries, including the manufacture of tobacco products, mining of coal and lignite, manufacture of weapons and ammunition, and manufacture of air and spacecraft and related machinery. These types of companies are not usually considered as sustainable.

The assessment process focuses on 21 sustainability criteria grouped into four themes: Environment, Labor and Human Rights, Ethics, and Sustainable Procurement. These criteria align with international sustainability standards and frameworks, including the UN Global Compact, Global Reporting Initiative (GRI) standards, ISO 26000, etc. EcoVadis analysts consider only the relevant criteria based on a company's size, industry, and location during the assessment. They review the company's questionnaire and supporting documents to evaluate its sustainability management system. The EcoVadis platform allows companies to view the activated criteria and their level of importance for evaluation, empowering them to track and improve their sustainability performance (EcoVadis, 2022).

The MSCI ESG rating system also differs from the ones mentioned earlier. Their ratings categorize companies into seven letter categories: Leader, Average, and Laggard, based on their handling of significant ESG risks and opportunities. The rating process involves analyzing over 1000 data points, including key performance indicators, policies, targets, and 35 ESG Key Issues. A specialized ESG research team provides insights, and MSCI conducts monitoring, quality reviews, and committee reviews. The ratings focus on industry-specific issues and compare companies within their respective industries. Detailed information on MSCI's metric calculation and factors considered can be found in their ESG Metrics Calculation Methodology.

The ratings consider a company's exposure to ESG risks based on its core business segments, operational locations, and other relevant measures. The scoring of exposure and management metrics is on a scale of 0-10, with issues weighted based on their impact and time horizon. MSCI also evaluates opportunities and controversies in their ratings. MSCI provides tools and resources for understanding their rating system, including guides and links to their methodology (MSCI, 2020).

Table 3. *ESG score providers and their score methodology.*

	Methodology Summary	Scoring Framework and data sources
Bloomberg	Scientific, model-driven approach based on self-reported information. Separate scores for E, S, and G aspects. Ranging scale from 0 to 100.	Relies on voluntary disclosures from firms. Channels include sustainability reports, filings, proxy statements, etc. Emphasizes engagement through direct collection of primary source data and validation with corporate information.
Sustainalytics	Assesses exposure to ESG risk by evaluating 20 material ESG issues. Considers manageable and unmanageable risk, ESG Risk Rating score is based on unmanaged risk.	Data collected from corporate publications, news outlets, NGO reports, and issuer feedback. Analysts evaluate management indicators and controversies. Emphasizes engagement through annual update feedback process and dedicated Issuer Relations team.
EcoVadis	Awards medals based on overall sustainability score. Assessment process based on 21 sustainability criteria grouped into four themes.	Relevant criteria considered based on company size, industry, and location. Focuses on empowering companies to track and improve sustainability performance through the EcoVadis platform.
MSCI	Categorizes companies into seven letter categories based on their handling of ESG risks and opportunities. Analyzes over 1000 data points and 35 ESG Key Issues.	Ratings compare companies within their respective industries. Detailed metrics calculation methodology. Provides tools and resources for understanding the rating system, offers insights.

Source: made by the author, based on MSCI (2020), EcoVadis (2022), Sustainalytics (2020), Bloomberg (2021).

In summary, these score providers employ different methodologies and scoring frameworks to calculate ESG scores. While Bloomberg emphasizes self-reported information and transparency, Sustainalytics focuses on exposure and risk assessment with issuer engagement. EcoVadis takes an inclusive approach and awards medals based on sustainability performance. MSCI categorizes companies based on ESG risk handling and provides industry-

specific ratings. They all utilize diverse data sources and emphasize engagement with companies to ensure accuracy and consistency in their assessments.

Different ESG score calculation methodologies can be problematic for several reasons. Firstly, the lack of standardization in these methodologies creates inconsistencies and challenges when comparing ESG scores across different providers. With each provider employing their approach, it becomes difficult for investors, companies, and stakeholders to obtain a clear and reliable understanding of a company's ESG performance (Cristina et al., 2021). Additionally, the subjectivity and bias introduced by different methodologies can affect the accuracy of ESG assessments. For instance, reliance on self-reported information can be influenced by reporting practices, while engagement-focused methodologies may lead to different risk interpretations and potential biases (Ibid.).

Secondly, different weighting, materiality considerations, and data quality create even more challenges for different ESG calculation methodologies. Each provider may prioritize certain ESG factors over others based on their criteria, resulting in different weights assigned to different indicators. Additionally, the quality and availability of data sources can vary, impacting the accuracy and trustworthiness of the ESG scores. Moreover, limited transparency in some methodologies hinders users from understanding the calculation process, making it difficult to assess the strengths and limitations of the methodology being used. Industry-specific considerations also pose a challenge (Cornell, 2021), as different sectors may have unique ESG challenges and performance indicators that are not consistently addressed across methodologies.

Greenwashing is another problem associated with ESG. It refers to the practice of companies presenting a misleading or exaggerated image of their environmental or social practices (Cristina et al., 2021). Some organizations may make superficial changes or provide incomplete information to appear more ESG-friendly than they are. Investors must be vigilant and conduct thorough due diligence to identify genuine ESG leaders. In a study conducted by Yu et al. (2020), researchers aim to explore mechanisms that can reduce firms' greenwashing behavior holistically across ESG dimensions. To identify "greenwashers," firms that appear transparent and provide extensive ESG data but perform poorly in ESG aspects, they develop peer-relative greenwashing scores for a dataset comprising 1925 large-cap firms across multiple countries. The analysis reveals that scrutiny from independent directors, institutional investors, influential public interests in less corrupted country systems, and cross-listing can discourage greenwashing behavior. Notably, the two most effective factors in mitigating misleading ESG disclosure are firm-level governance mechanisms.

Critics argue that the inclusion of ESG factors into investment decisions may come at the expense of financial returns. They suggest that by limiting investment choices to companies adhering to ESG principles, investors may miss out on potentially profitable opportunities. In a study by Chen and Yang (2020), researchers find that investor behavior tends to be influenced by socially responsible issues, potentially resulting in biased investment decisions that deviate from profit-seeking strategies. Their argument suggests that investors may react optimistically to positive news regarding companies with strong ESG practices but pessimistically to negative news about companies with weaker ESG performance. This exaggerated response to news can lead to a short-term ESG momentum effect and long-term reversals for both high and low-ESG-scoring stocks. By examining the Taiwanese market and implementing ESG momentum strategies, they discover significant short-term profits and subsequent reversals, indicating the existence of overreactions to corporate ESG information. The ESG score is considered risky in this case due to the potential for exaggerated price impacts and overreactions by investors to positive and negative ESG-related news, leading to short-term momentum effects and long-term reversals that deviate from the company's fundamental value. Investing based on ESG scores becomes risky as it introduces volatility and speculative behavior into investment decisions, with stock prices influenced by short-term fluctuations driven by investor sentiment surrounding ESG news.

To sum up, there are several problems related to ESG. The lack of standardization in ESG score calculation methodologies creates inconsistencies and challenges in comparing scores. Subjectivity, bias, variations in weighting, materiality considerations, and data quality further complicate ESG calculations. From this comes greenwashing, where companies misrepresent their environmental or social practices, which is another serious problem. Scrutiny from independent directors, institutional investors, and less corruption can lessen the occurrences of greenwashing. Without a reliable score calculation and potential greenwashing, investors might make incorrect investment choices and lose their investments, therefore correct and reliable ESG score calculation is very important.

1.2 Analysis of previous studies on ESG impact on stock prices

This subsection provides an overview of a diverse set of studies that examine the relationship between ESG factors and various financial outcomes. The literature review is conducted systematically, starting with a search of academic databases, including Google Scholar, EBSCO, and Vilnius University Library's electronic resources. The search is conducted using keywords such as "ESG performance," "stock prices," "financial performance," "sustainability," "sustainable investing", "ESG impact", "corporate social responsibility," and other related terms. These studies span multiple countries and time periods, exploring research questions such as the impact of ESG performance on stock price volatility, the influence of ESG ratings on stock price crash risk, the association between ESG and bank performance, the role of ESG factors in determining market value, and the relationship between ESG and portfolio performance.

1.2.1 Studies on ESG and stock price crash risk, volatility

Stock price crash risk is a topic of interest among scholars studying ESG information disclosure. It refers to the potential occurrence of a sudden and significant decline in the value of financial assets, which can have adverse consequences for investors and stakeholders. This phenomenon involves an abrupt and unexpected downturn in the market, characterized by a notable decrease in the prices of stocks and other traded securities (Brunnermeier, 2001; Sornette, 2017). Researchers have delved into understanding the factors that contribute to stock price crash risk, aiming to identify potential indicators and predictors of such market disruptions. By examining the relationship between ESG disclosure and stock price crash risk, scholars seek to uncover the extent to which ESG information can serve as a valuable tool for assessing and managing investment risks. This is one of the first topics for analysis before analyzing ESG and stock price correlations.

A very broad analysis was performed by Bae, Yang, and Kim (2021) when they examined 3833 Korean Stock Exchange firms over six years. Their research aimed to understand how ESG ratings affect stock price crash risk. The results indicated that higher ESG ratings were associated with a reduction in stock price crash risk, suggesting that companies with better ESG performance are more resilient to significant stock price declines. Similarly, Gao, Chu, and Ye (2022) analyzed Chinese A-share listed companies and found that better

ESG performance was linked to a lower likelihood of stock price crash risk. These studies highlight the importance of ESG considerations in managing financial risks and suggest that companies with strong ESG practices are better positioned to mitigate the impact of market downturns.

Another set of studies focused on the relationship between environmental, social, and governance factors and various financial outcomes. In one study by Moalla and Dammak (2022), the researchers investigated 500 US companies listed in the S&P 500. Their objective was to understand the relationship between ESG performance and stock price volatility. The study found that companies with strong ESG performance tended to experience lower stock price volatility. This suggests that incorporating ESG considerations into business practices can contribute to greater stability in stock prices. Azmi, Hassan, Reza, and Karim (2020) focused on the relationship between ESG and bank performance. Their study included 251 companies from 44 emerging economies over seven years. The researchers found a positive relationship between ESG activity, cash flows, and efficiency in the banking sector. They also observed that ESG activity negatively affected the cost of equity but had no significant effect on the cost of debt. These findings suggest that incorporating ESG practices in the banking industry can lead to improved financial performance and reduced equity costs.

Mio, Fasan, and Scarpa (2023) conducted a study on investor perceptions of ESG factors in the utility sector. They analyzed 60 utility companies listed in the S&P 500 and EuroStoxx 600 indexes over a five-year period. The researchers discovered that investors paid greater attention to governance issues compared to other ESG factors. Additionally, human rights performance scores played a crucial role in investor decision-making. Surprisingly, when examining ESG factors separately, they found that these factors did not have a significant impact on reducing investors' risk perceptions. These findings shed light on the specific ESG considerations that investors prioritize and provide insights into the utility sector's investor sentiment.

In another study, Bolognesi and Burchi (2023) focused on the relationship between ESG disclosure and firm value. They examined 3000 US-listed firms over an eight-year period. The study aimed to determine if firms with higher disclosure scores had higher target prices. The results indicated that ESG disclosure served as a strategic tool for firms to create value. By providing transparent and comprehensive ESG information, companies were able to enhance their reputation, attract investors, and potentially achieve higher target prices. This highlights the importance of effective ESG disclosure practices for firms seeking to enhance their market value.

Table 4. *Studies on ESG and stock crash risk, volatility*

Authors	Year	Data scope	Research question	Method	Result
Moalla, M. & Dammak, S.	2022	500 US companies listed in the S&P 500; 2020.	What is the relationship between ESG performance and stock price volatility?	Event-study method, regression.	Strong ESG performance reduces stock price volatility.
Bae, J., Yang, X., Kim, M.	2021	3833 Korean Stock Exchange firms; 2012-2018.	How do ESG ratings affect stock price crash risk?	Two-Stage Least Squares (2SLS), dynamic Generalized Method of Moments (GMM).	ESG ratings reduce stock price crash risk.
Gao, J., Chu, D., Ye, J.	2022	Chinese A-share listed companies; 2010-2020.	What is the impact of ESG on stock price crash risk?	Baseline regression.	Better ESG performance is linked to lower likelihood of stock price crash risk.
Li, S., Yin, P., Liu, S.	2022	Listed companies with ESG ratings in Shanghai and Shenzhen A-shares; 2016-2020.	What is the impact of a company's sustainable development on the stock price crash risk?	Difference-in-differences model and ordinary least squares methods.	Stock price crash risk is lower when ESG results are better.
Azmi, W., Hassan, K., Reza, H., Karim, M.	2020	251 companies from 44 emerging economies; 2011-2017.	What is the relationship between ESG and bank performance?	Tobin's Q. Capital Asset Pricing Model (CAPM).	Found positive relationship between ESG activity, cash flows and efficiency; ESG activity negatively affects the cost of equity but has no effect on the cost of debt.
Mio, C., Fasan, M., Scarpa, F.	2023	60 utility companies included in the S&P 500 and EuroStoxx 600 indexes; 2017-2021.	Which ESG factors are material to investors in the utility sector?	Panel regression analyses.	Investors pay more attention to governance issues than other ESG factors. Human rights performance scores are very important to the investors. When examined separately, ESG factors do not play any role in reducing the investors' risk perceptions
Bolognesi, E., Burchi, A.	2023	3000 US listed firms; 2012-2020.	Do firms that exhibit higher disclosure scores show higher target prices?	Regression analysis with multiple variables.	ESG disclosure is a strategic tool for firms to create value.

Source: made by the author, based on works from Moalla et al. (2022), Bae et al. (2021), Gao et al. (2022), Li et al. (2022), Azmi et al. (2020), Mio et al. (2023), Bolognesi et al. (2023).

Stock price crash risk, which refers to the potential occurrence of a sudden and significant decline in the value of financial assets, is a topic of interest in ESG information disclosure research. Several studies have found that higher ESG ratings are associated with a reduction in stock price crash risk, indicating that companies with better ESG performance are more resilient to market downturns. Furthermore, research has shown that strong ESG performance is linked to lower stock price volatility, greater stability in stock prices, improved financial performance in the banking sector, and enhanced firm value. Additionally, investor perceptions in the utility sector prioritize governance issues and human rights performance. These findings in different regions and sectors emphasize the significance of ESG considerations in managing financial risks, improving performance, attracting investors, and enhancing market value. Effective ESG disclosure practices play a crucial role in achieving these outcomes.

1.2.2 Studies on ESG impact on stock prices in different regions

ESG factors have been the subject of numerous studies exploring their impact on various financial outcomes. In terms of stock returns, Torre, Mango, Cafaro, and Le (2020) examined 46 public firms listed on the Eurostoxx50 from 2010-2018. They aimed to determine whether ESG scores affect stock returns and found that the analyzed companies' performance was not significantly affected by their ESG scores. However, Koelbelz, Pavlova, and Rigobon (2021) conducted a study across North America, Europe, and Japan from 2014-2020 and discovered that higher ESG scores were associated with higher expected returns. These findings suggest that the relationship between ESG and stock returns may vary across different regions and periods.

When it comes to share prices, Yoon, Lee, and Byun (2018) focused on 705 firms in the Korean financial market from 2010-2015. Their research aimed to examine the impact of Corporate Social Responsibility (CSR) on firms' share prices. They found that CSR had a positive impact on share prices, with companies in sensitive industries experiencing a greater effect. Similarly, Shanaev and Ghimire (2021) analyzed 658 firms publicly traded on US exchanges from 2016 to 2021 to investigate the impact of ESG ratings on stock returns. They discovered that upgrades in ESG scores led to a positive change in stock returns, while downgrades had a negative impact. These findings highlight the potential influence of ESG factors on share prices and investor perceptions.

The relationship between ESG and market value was explored by Al-Hiyari and Kolsi (2021) in a study involving 439 firms from 10 MENA countries between 2013-2019. Their research indicated a positive association between market value and ESG performance scores, suggesting that ESG considerations may contribute to enhanced market valuation. In another study by Lapinskienė, Gedvilaitė, Liučvaitienė, and Peleckis (2023), the researchers examined the 500 largest US corporations on the S&P 500 index and the 600 largest EU companies on the STOXX Europe 600 index from 2015-2020. Their findings revealed a positive effect of environmental pledges on stock prices, and they observed that changes in stock price were partially dependent on environmental data. These studies emphasize the potential impact of ESG factors on market value and the importance of environmental considerations.

Table 5. *Studies on ESG and stock price, financial performance*

Authors	**Year**	**Data scope**	**Research question**	**Method**	**Result**
Torre, M., Mango, F., Cafaro, A., Le, S.	2020	46 public firms listed on the Eurostoxx50; 2010-2018	Does ESG affect stock returns?	Panel analysis and multiple linear regression.	Analyzed companies' performance is not affected by their ESG scores.
Gavrilakis, N., Floros, C.	2023	Companies in Portugal, Italy, Greece, Spain, France, and Germany; 2010-2020.	How is ESG related to companies' stock performance?	Multiple regression.	Five out of 6 countries show that investors don't sacrifice returns by investing in companies with higher ESG scores.
Yoon, B., Lee, J., Byun, R.	2018	705 firms on Korean financial market; 2010-2015.	What is the impact of CSR on firms' share prices?	Ohlson's valuation model.	CSR has a positive impact on share prices, but the impact is bigger for companies in sensitive industries.
Koelbelz, F., Pavlova, A., Rigobon, R.	2021	Companies in North America, Europe, and Japan; 2014-2020.	How strongly does ESG performance affect stock returns?	Standard regression, elimination of noise.	The higher ESG scores, the higher expected returns.
Al-Hiyari, A., Kolsi, M.	2021	439 firms from 10 MENA countries; 2013-2019.	Is ESG information important to shareholders along with financial data?	Regression.	Market value is positively associated with ESG performance scores.
Lapinskiene, G., Gedvilaite, D., Liucvaitiene, A., Peleckis, K.	2023	500 largest US corporations on the S&P 500 index and 600 largest EU companies on the STOXX Europe	How does ESG score influence the market value of corporations?	Using simple linear regressions and a fixed effect panel data model.	There is a positive effect on environmental pledges; changes in stock price partially depend on environmental data.

		600 index; 2015-2020.			
Huq, S., Jutila, E., Sameland, O.	2022	European market, 761 companies; 2015-2019.	What is the relationship between ESG and portfolio performance?	Jensen's alpha, Sharpe ratio, the CAPM and FF3FM.	The low ESG portfolio outperform the market in excess and risk-adjusted returns.
Li, Z., Feng, L., Pan, Z., Sohail, H.	2022	Chinese non-financial A-share listed firms; 2020.	Can ESG be used as a risk measuring tool to avoid negative risk during the crisis?	Event-study method, regression.	ESG performance increases firms' returns and has asymmetric effects during the pandemic.
Luo, D.	2022	UK stocks equites from FTSE All Share Index; 2003-2020.	H: companies that have low ESG scores earn higher expected returns.	Portfolio analysis following Liu and Strong (2008).	Firms with lower ESG earn higher returns than companies with higher ESG scores.
Shanaev, S., Ghimire, B.	2021	658 firms publicly traded on US exchanges; 2016-2021.	What is the impact of ESG ratings to stock returns?	(1) CAPM, (2) a Carhart (1997) four-factor model, and (3) Fama-French (2015) multi-factor model augmented with momentum.	Upgraded ESG scores lead to positive change of stock returns by 0.5%, downgrades impact stock returns by -1.5% on average.
Petit, G.	2017	100 largest listed companies; 2002-2010.	Do ESG news have a significant impact on firms' market value?	Empirical analysis robust-event study.	Firms that face negative events experience a drop in their market value of 0.1%, from positive announcements companies gain nothing.

Source: made but he author, based on the works by Torre et al. (2022), Gavrlakis et al. (2023), Yoon et al. (2018), Koelbelz et al. (2021), Al-Hiyari et al. (2021), Lapinskiene et al. (2023), Huq et al. (2022), Li et al. (2022), Luo (2022), Shanaev et al. (2021), Petit (2017).

The relationship between ESG and portfolio performance was investigated by Huq, Jutila, and Sameland (2022) in their study on the European market, analyzing 761 companies from 2015-2019. They found that portfolios with low ESG scores outperformed the market in terms of excess and risk-adjusted returns. This suggests that considering ESG factors in portfolio construction may have the potential to enhance investment performance.

ESG factors were also examined in the context of risk measurement. Li, Feng, Pan, and Sohail (2022) focused on Chinese non-financial A-share listed firms in 2020 to explore whether ESG can serve as a risk-measuring tool during crises. Their findings indicated that ESG performance increased firms' returns and had asymmetric effects during the pandemic, suggesting that strong ESG practices may help mitigate negative risks during turbulent times.

Furthermore, the impact of ESG news on firms' market value was investigated by Petit (2017) in a study involving the 100 largest listed companies from 2002-2010. The research revealed that firms facing negative events experienced a drop in their market value, while positive announcements had no significant impact. This highlights the role of ESG news in shaping investor sentiment and its potential implications for firms' market valuation.

Lastly, Luo (2022) examined UK stock equities from the FTSE All Share Index between 2003 and 2020 to explore the relationship between ESG scores and expected returns. Surprisingly, the findings suggested that companies with lower ESG scores earned higher returns than those with higher ESG scores. This unexpected result raises questions about the complex nature of the relationship between ESG factors and expected returns.

Results of the studies related to this topic vary across different regions and time periods. Some studies found no significant effect of ESG scores on stock returns, while others observed a positive association. Corporate social responsibility (CSR) was found to have a positive impact on share prices, particularly in sensitive industries. Upgrades in ESG scores were associated with positive changes in stock returns, while downgrades had a negative impact. ESG performance scores were positively associated with market value, suggesting a potential influence on market valuation. Portfolios with low ESG scores outperformed the market, indicating the potential for enhanced investment performance. ESG practices were found to mitigate negative risks during crises. ESG news influenced firms' market value, with negative events leading to decreased market value. Surprisingly, some studies showed that companies with lower ESG scores earned higher returns, highlighting the complexity of the relationship between an ESG score and the company’s share price.

1.2.3 Studies on ESG impact on stock prices in Nordics and Baltics

This subsection explores the relationship between Environmental, Social, and Governance (ESG) factors and their impact on stock prices. It summarizes the findings of several studies conducted in the Nordic region, focusing on financial companies and listed

firms. The studies investigate various aspects of ESG and its effect on financial performance, total shareholder returns, incorporation of ethical views, and company value.

First of all, Rahi, Akter, and Johansson (2021) analyzed 39 financial companies in the Nordic region from 2015 to 2019. Their research question centered around the impact of sustainability practices on firm financial performance. The study revealed an inverse correlation between ESG factors and financial performance, particularly in return on invested capital, return on equity, and earnings per share. Interestingly, the study also finds a positive correlation between governance and return on assets which was also mentioned as one of the most important pillars in some the previously mentioned studies.

In another study, Lueg and Pesheva (2021) examined a larger sample of 118 firms with 944 firm-year observations in the Nordic stock markets between 2007 and 2014. Their research question focused on the effects of Corporate Social Responsibility (CSR) on total shareholder returns (TSR). The study highlighted a positive relationship between CSR and TSR. Moreover, it emphasized that disclosure of governance practices is the most crucial driver of shareholder value. Firms that overreport experience declines in TSR.

In a study conducted by Hoepner and Schopohl (2016) the authors delved into the investment strategies of Norway's Government Pension Fund-Global (GPFG) and Sweden's AP-funds. Their research question revolved around incorporating the ethical views of fund beneficiaries without sacrificing financial returns. The study revealed that asset owners can indeed achieve the ethical goals of their beneficiaries while preserving financial returns.

Lastly and most importantly for the topic of this thesis, Umbraite and Lapinskaite (2022) focus on a sample of 20 companies listed in Nasdaq Baltic and Nordic markets from 2015 to 2020. Their research question explores the correlation between ESG ratings and company performance, evaluated through financial ratios as a measure of the company's value. The study finds that in the long run, sustainable development has the potential to generate a favorable influence on the value of businesses. This study is the most relevant to the analysis of this thesis because it analyzes the same regions.

Table 6. *Studies on ESG impact in Nordic markets*

Authors	**Year**	**Data scope**	**Research question**	**Method**	**Result**
Rahi, A., Akter, R., Johansson, J.	2021	39 financial companies in Nordic region; 2015-2019.	How does sustainability practice affect firm financial performance?	Statistical estimation using fixed-effect (FE) panel regression.	There is an inverse correlation between ESG and financial performance, specifically in return on invested capital,

				with dynamic estimation generalized method of moments (GMM) with a variety of control variables.	return on equity, and earnings per share. There is a positive correlation between governance and return on assets.
Lueg, R., Pesheva, R.	2021	118 firms. 944 firm-year observations in Nordic stock Markets; 2007-2014.	What are the effects of CS on total shareholder returns?	Regression analyses with fixed effects.	Positive relation between CS and TSR. Disclosure on governance practices is the most important shareholder value. Firms that overreport, experience declines in TSR.
Hoepner, A., Schopohl, L.	2016	Norway's Government Pension Fund-Global (GPFG) and Sweden's AP-funds.	Can ethical views of funds' beneficiaries be incorporated without sacrificing financial returns?	Time-series analysis.	Asset owners can achieve the ethical goals of their beneficiaries while preserving financial returns.
Umbraite, L., Lapinskaite, I.	2022	20 companies listed in Nasdaq Baltic and Nordic markets; 2015-2020	How does the ESG rating correlate with company performance when evaluated through financial ratios as a measure of the company's value?	Standard linear panel regression model.	In the long run, sustainable development has the potential to generate a favorable influence on the value of businesses.

Source: made by the author, based on the works by Rahi et al. (2021), Lueg et al. (2021), Hoepner et al. (2016), Umbraite et al. (2022).

To summarize the limited research available on the relationship between ESG factors and stock prices in the Nordic and Baltic regions, the results of the studies are quite similar. All of the studies found that sustainability factors influence companies' stock prices. Rahi, Akter, and Johansson (2021) reveal an inverse correlation between ESG factors and financial performance in the Nordic financial sector. Lueg and Pesheva (2021) demonstrate a positive relationship between CSR and total shareholder returns, emphasizing the importance of governance disclosure. Hoepner and Schopohl (2016) find that ethical goals can be achieved without compromising financial returns in Norwegian and Swedish funds. Umbraite and Lapinskaite (2022) find that sustainable development positively influences the value of companies listed in the Baltic and Nordic markets. Overall, the scarcity of research and comparison in these regions highlights the novelty of this thesis.

The topic of ESG, Environmental, Social, and Governance has gained significant attention in recent years due to a more conscious society that holds companies accountable for

their impact on the environment, social issues, and governance practices. However, the meaning of ESG is often unclear, leading to confusion and ambiguity. While economist Milton Friedman argued that a corporation's sole responsibility is to maximize profits, many economists disagree and emphasize the importance of corporate social responsibility (CSR) and creating shared value (CSV) (Porter and Kramer, 2011). CSR involves voluntarily integrating social and environmental concerns into a company's operations, while CSV proposes a framework that aligns social problems with business goals, leading to innovation and competitive advantage (Carroll, 1999; Porter and Kramer, 2011). An actual measurement of companies' corporate responsibility is an ESG score which is provided by a variety of companies that evaluate companies and calculate their score according to various criteria.

To summarize, there are several problems related to ESG scoring methodologies. First is the lack of standardization. Due to incorrect information, different sectors, biases, and different criteria, ESG scores might not be accurate and mislead investors. The second problem related to ESG calculations is greenwashing. Companies might release false information in order to receive higher scores and pretend to be greener than they are. The last problem mentioned in this theoretical part is the misleading of investors. In their research, Chen and Yang (2020) show that investors who are chasing high ESG-scoring companies might lose great potential investment opportunities as well as be overly positive or overly negative regarding ESG news.

Studies conducted in different regions and on different topics related to ESG show various results. In terms of stock price crash risk and volatility, research suggests that higher ESG ratings are associated with a reduction in crash risk and lower stock price volatility. Studies have also shown a positive relationship between ESG performance and bank performance, indicating that ESG activities enhance cash flows and efficiency in the banking sector while reducing the cost of equity. In terms of stock returns and share prices, the impact of ESG factors varies across different regions and periods. While some studies find no significant relationship between ESG scores and stock returns, others suggest that higher ESG scores are associated with higher expected returns. Additionally, research indicates that CSR and ESG ratings have a positive impact on share prices, and upgrades in ESG scores lead to positive changes in stock returns. Furthermore, studies have indicated a positive association between market value and ESG performance scores. To sum up, research emphasizes the significance of ESG considerations in managing financial risks, improving performance,

attracting investors, and enhancing market value. The lack of research in the Baltic and Nordic regions provides an opportunity to further analyze ESG topics in these regions.

2. METHODOLOGY FOR THE RESEARCH: ESG SCORE IMPACT ON STOCK PRICES

This study's main aim is to investigate the relationship between ESG scores and their relationship with stock prices. In order to conduct a clear and thorough study of the correlation and impact between the two mentioned variables, this chapter defines the econometric variables and presents the data selection. Later follows the reasoning behind the statistical model selection and data analysis as well as any possible limitations that arose while conducting the research in this field.

2.1 Purpose of the research and hypotheses

The main objective of this research paper is to analyze how ESG influences companies' stock prices in Nordic and Baltic regions. Consequently, to take a deeper look into the earlier findings and compare the ESG score impact on stock prices in these two regions, find possible similarities and differences, and draw conclusions.

The first hypothesis of this thesis is inspired by the different findings of Torre, et al. (2020) who have found that companies' performance was not significantly influenced by their ESG scores, and the findings of Koelbelz et al. (2021) who have found in their research that there is a significant correlation between higher ESG scores and higher expected returns. These two studies include different regions and different timeframes, therefore there is no unquestionable agreement that ESG scores influence the stock prices of companies. Based on this context, the first hypothesis of this paper is as follows:

H_1: ESG performance score influences companies' stock prices.

H_{a1}: ESG performance score doesn't influence companies' stock prices.

To find the most suitable method to test this hypothesis, a panel regression analysis will be performed.

The second hypothesis is formulated in reference to the research conducted by Lapinskienė et al. (2023). The researchers have investigated 500 companies in the S&P and 600 companies in the STOXX index and have found that changes in stock prices are partially dependent on environmental data. For this thesis it is beneficial to check if E-scores are more

impactful to the SPV than S and G-scores, therefore the formulation of the second hypothesis is:

H_2: The E-score has a greater impact on stock prices than the S and G-scores.

H_{a2}: The E-score doesn't have more impact on stock prices than the S and G-scores.

The quantitative research method which will be used for testing of the second hypothesis will be determined by a panel regression analysis.

The third and final hypothesis of this research paper is partially drawn from the works of Rahi et al. (2021), Lueg and Pesheva (2021), Hoepner and Schopohl (2016), and Umbraite and Lapinskaite (2022) who have all found that ESG factors have a significant influence both on companies' financial performance as well as stock prices. To the best of the author's knowledge, no research paper exploring this particular topic in the Baltic region had been published during the period when the thesis was being written. Based on the fact that the Nordic countries are the most environmentally conscious and sustainability-driven, the final hypothesis is formulated as follows:

H_3: The ESG performance scores have a greater impact on companies' stock prices in the Nordic region compared to the Baltic region.

H_{a3}: The ESG performance scores have the same impact on companies' stock prices in both the Baltic and the Nordic regions.

The quantitative research method that will be used for testing of the third hypothesis will be determined by using a panel regression analysis as well.

All of the three hypotheses that had been raised in the methodological part of the thesis are analyzed at a deeper level in the research part which is in the upcoming chapter. In this analysis, the quantitative research method is used as the primary type of approach to systematically evaluate the proposed hypotheses and derive meaningful conclusions as well as recommendations for the firms.

2.2 Data collection

The upcoming chapter examines companies that are listed on Nasdaq stock exchanges in the Baltic and Nordic regions. The first range of companies chosen for this research is those

Nordic companies that are listed on Nasdaq's Nordic Main list. The Nasdaq Main Market Nordic List was selected for researching ESG impacts on stock prices due to its broad coverage of companies with clear ESG reporting standards and a high investor focus on sustainability. The Nordic region's reputation as a sustainability leader allows for a meaningful analysis of how ESG factors influence market performance. The total list of firms on the Nasdaq Main Market Nordic list contains 709 companies. Considering that it is recourse and labor-intensive to collect different ESG data for each company, the full list of Nordic companies is not executed. This research includes the Nordic companies on the Large Cap list which contains 263 companies. Baltic companies that are analyzed in this thesis are the ones that are listed on the Nasdaq Baltic stock exchange's Main list. The Main Baltic list contains a total of 33 companies. Inspired by Lapinskiene et al. (2023), Umbraite and Lapinskaite (2022), Shanaev and Ghimire (2021) and Yoon et al. (2018) a 6-year data is analyzed from 2017 through 2022.

For the data collection, Bloomberg's database was used. This database is available in Vilnius University's own Bloomberg auditorium which provides access to the huge database to the students of the University. Bloomberg provides an overall ESG score for each company, as well as separate scores for the environmental, social, and governance pillars. There are conducted two types of calculations, one for the overall ESG score and its relationship with the SPV, another study is conducted for the separate E, S, and G scores and their possible impact on SPV.

It has been mentioned in the previous chapter that not all companies disclose their ESG data. Due to this reason, not all Baltic and Nordic companies that are listed on the Nasdaq stock exchanges have their ESG information in Bloomberg's database. A Total sample of 163 Nordic companies from the Nordic Large Cap list have their ESG scores available for the years 2017-2022 on the Bloomberg terminal.

Table 7. *Statistics on ESG data available for listed companies*

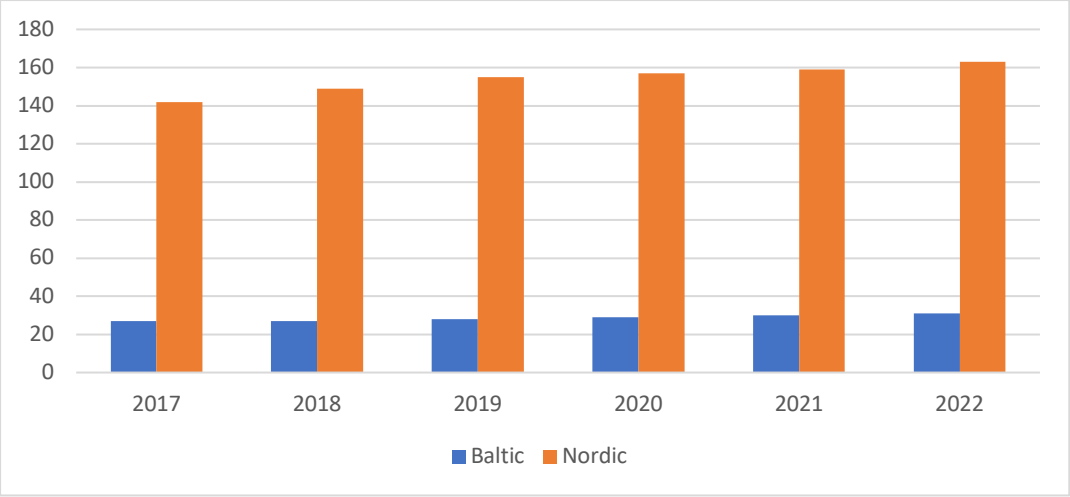
Region	Total number of companies with ESG data	ESG-scores for 2017	ESG-scores for 2018	ESG-scores for 2019	ESG-scores for 2020	ESG-scores for 2021	ESG-scores for 2022
Baltic	31	6	22	28	29	31	24
Nordic	163	118	142	158	160	163	144

Source: made by the author, based on ESG score data.

Out of the 33 Baltic companies on the Nasdaq Baltic Main list only 21 companies had their ESG scores published on the Bloomberg terminal. This number of companies, compared to the number of the Nordic companies that have their ESG scores available on the Bloomberg terminal is very low, therefore, in order to cover the Baltic market more broadly, companies from the Baltic Secondary list were also included in the study. The secondary list contains 18 companies out of which 10 companies have available ESG data. The total list of the companies includes 163 Nordic companies based in Iceland, Sweden, Denmark, and Finland, and 31 Baltic companies based in Latvia, Lithuania, and Estonia. Total number of companies is 194 companies. ESG scores on Bloomberg are published every year, so in total the research consists of 1106 yearly observations. Bloomberg provides separate scores for ESG, E, S, and G metrics therefore the final ESG data sample consists of 4092 observations.

Monthly historical stock price data for the companies included in the above-mentioned list was excluded from https://finance.yahoo.com. Scope of the data is relatively high, and this website provides a significantly more convenient way to extract the historical stock data therefore this website was chosen and not the actual Nasdaq website. A monthly data for each of the 194 companies was extracted from the website. One difference is that ESG scores on Bloomberg are published yearly, so in order to match the data scope, yearly stock prices were calculated by the author for this particular research paper. The calculations of yearly stock prices were done by calculating the average closing price of every available month of the year, the results were rounded to two decimal points. Total data sample of stock prices contains 172 yearly stock price observations of Baltic companies and 925 yearly stock price observations of Nordic companies.

Figure 1. *Number of companies with stock data available for different years*



Source: made by the author, based on stock data.

It is important to keep in mind that the Nordic companies, differently from the Baltic ones, in the study trade in different currencies: SEK, DKK, ISK and EUR. To align data, all historical stock prices were converted to euros. This helps to compare all Nordic companies' data between each other, as well as keep continuity with Baltic companies' data. The final set of stock data for all 194 companies in the study is calculated in euros, historical currency rates were taken from finance.yahoo.com and calculated with a formula using Microsoft Excel functionalities.

2.3 Research method

This thesis is based on a quantitative research method to analyze the relationship between ESG and SPV. While conducting the statistical tests the main focus throughout the study is set on the companies' share prices. Therefore, the independent (explanatory) variable is chosen to be SPV while the dependent (explained) (Maddala, 1992) variables are E, S, G, and ESG scores. The very method of the research is mainly influenced by the research methods performed by Torre et al. (2020), Umbraite and Lapinskaite (2022), and Lapinskiene et al. (2023). As mentioned previously, the sample set contains a total of 194 companies and their monthly data points. This leads to a total of 925 SPV observations and E, S, G, and 4092 ESG-score observations.

To verify the first hypothesis, the very first step is to perform an unbalanced panel regression analysis. Such an analysis model was chosen due to its suitability for this particular research paper where the same set of variables is be measured more than two times (Keith, 2014). A regression analysis is used in order to describe and evaluate the relationship between dependent and independent variables (Maddala, 1992). This is a generic formula of a simple regression presented by Maddala:

$$y = \alpha + \beta x + u;$$

Where:

$\boldsymbol{y}$ is dependent variable,

$\boldsymbol{x}$ is the independent variable,

$\boldsymbol{\beta}$ is the y-intercept,

$\boldsymbol{\alpha}$ is the slope of the regression line,

u is the error term that is added to represent the difference between the observed values of the dependent variable and the values predicted by the regression model.

By choosing this method, aims to assess whether a causal relationship exists between the two variables or if it can be completely rejected. This panel data is unbalanced because not every company had necessary data for all of the time points (Biorn, 2016). According to Brooks (2014) the clearest strategy for handling such data sample where multiple companies are analyzed over many years would be the estimation of a pooled regression.

Following this method, a single equation is applied to the entirety of the dataset. All cross-sectional and time-series observations for the dependent variable *y* is stacked up in a consolidated column, the same is done with the independent variable *x*. Firstly, the regression is done using random-effects model which has no dummy variables that are able to catch cross-sectional variation. Based on Brooks (2014), the formula for this model is has ε which is the new cross-sectional error term and has a zero mean:

$$y = \alpha + \beta x + \omega,$$

$$\omega = \varepsilon + \nu;$$

Subsequently, after conducting the Granger Causality test and the Hausman test the research is conducted using the fixed effects model. This model is chosen based on the results from models with no effects, random-effects, and fixed-effects as well as the results from the Hausman test. According to Brooks (2014), the fixed effects model works by decomposing the disturbance term *u* into entity-specific effect μ and a remainder disturbance term *v*, so the formula for the regression is such:

$$y = \alpha + \beta x + \mu + v;$$

Keeping in mind that the first hypothesis is relevant for both regions, all companies are included in the panel dataset. To sum up, a fixed-effects panel regression is conducted for the checking of the first hypothesis.

To analyze the second hypothesis a similar analysis is done to the testing of the first hypothesis. To check if environmental data or the E-score is the most impactful out of the ESG scores, there is a separate panel regression analysis for each of the scores instead of the common score. Results from the panel regression are discussed and compared, the hypotheses are either rejected or accepted.

The findings of the first two hypotheses in both the Nordic and Baltic regions are used for the third hypothesis. Results of the findings on how ESG data affects stock prices in different regions are compared and thoroughly analyzed in order to check and either accept or reject the third hypothesis. The findings are discussed, and no additional calculations are taken. To determine if there is a stable, long-run relationship for the time series a cointegration test and unit root tests are run, taking examples from Umbraite and Lapinskaite (2022) and (Keith, 2014).

It is important to note the limitations that are related to this research work before continuing with the results of the study. This research is limited by the lack of available ESG data for every single listed company. Due to this reason, the full sample of companies contains only 194 companies, because many companies lacked ESG data and were excluded from the study. This creates space for potential blind spots and leads to the limited generalizability of the findings in the two different regions. On a positive note, there were a few companies that had their ESG scores published on the Bloomberg database in the year 2023. The studies to be conducted in a few years could be more generalized after the sustainability laws and regulations have taken effect and more companies have available and detailed ESG data.

Another important limitation is associated with the access to detailed ESG data. While the accessibility of historical and detailed stock data is quite quick and easy and provided on a variety of free-to-use websites, ESG data is not as easily accessible to the public. The free websites, such as ESGBook or CSRHub, offer very limited ESG data and don’t have as many listed companies available. This puts a limitation on gathering ESG data for researchers who do not have access to the biggest financial databases through other means.

3. RESULTS OF THE RESEARCH: ESG SCORE IMPACT ON STOCK PRICES

This chapter shows, presents, and analyzes the findings of the environmental, social, and governance scores of companies' stock prices. The performance of a variety of quantitative calculations that were conducted for this thesis are presented step by step and clearly explained. This study employs panel regression analysis with fixed effects to estimate the overall impact of ESG scores on stock prices across a diverse sample of companies. Therefore, the calculations are explained with the help of visual representation. Robustness checks and diagnostic tests are conducted to ensure the reliability of the findings. All three hypotheses raised earlier in the research paper are checked. A summary of the findings, discussion, and recommendations is provided at the very end of the chapter.

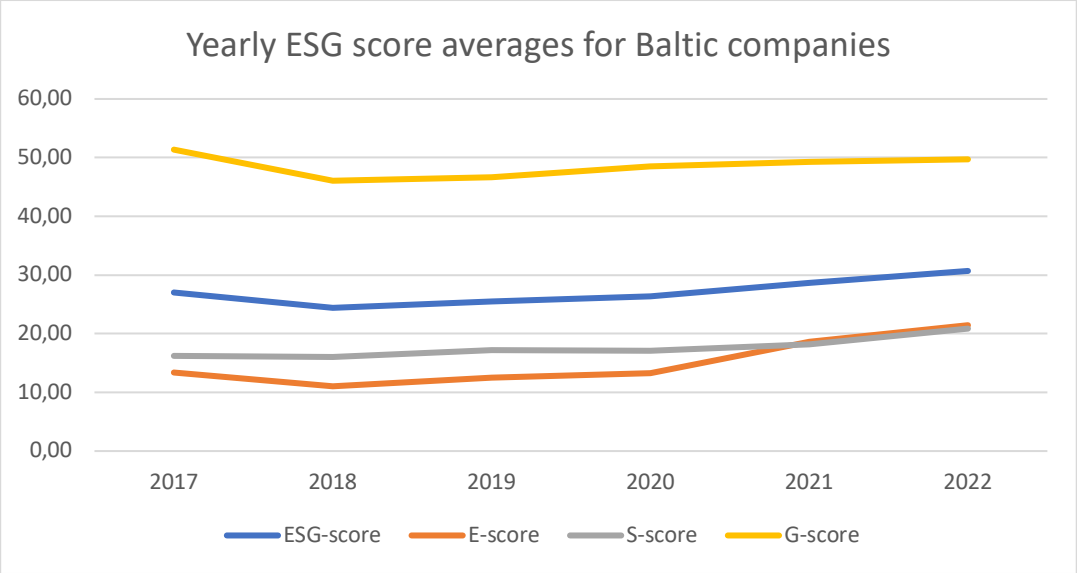
3.1 Analysis of the overall trends in the Baltic and Nordic markets

In the first part of the research chapter, the main objective is to analyse the impact of common environmental, social, and governance (ESG) scores on companies' share prices. This is done by including all companies from the gathered data regardless of their regions of operation. This makes it possible to have an overall view of the two regions as they have never been studied together as per the author's knowledge. The first hypothesis is to explore whether there is a notable relationship between the ESG scores and the performance of share prices across companies, therefore, all of the following steps are taken in order to check the first hypothesis.

Before conducting the econometrical research, it is beneficial to look at the overall dataset for ESG scores and stock prices. Checking the average and median ESG scores and stock prices is beneficial for several reasons. Firstly, examining the average and median ESG scores separately for companies in the Baltic and Nordic regions provides a general understanding of their overall environmental, social, and governance practices. It is a general idea that the Nordic countries and their economic practices are much more advanced, and they are at a much better level than the economic status of the countries in the Baltic countries. While the regions have very different historical, geographical, and geopolitical conditions, it is a logical conclusion that the companies located and operating in these regions would be very

different as well. Examining the average and median ESG scores as well as stock prices allows to see which region is doing better. Secondly, studying the average and median stock prices for different regions provides insights into the financial performance of companies with varying levels of ESG practices. It is also very important to keep in mind that the sizes of the companies are of very different sizes, due to the very differently sized markets. By examining average and median ESG scores and stock prices before conducting econometric research, a foundation for understanding and context for further analysis is laid out.

Figure 2. *Yearly ESG score averages for Baltic companies.*



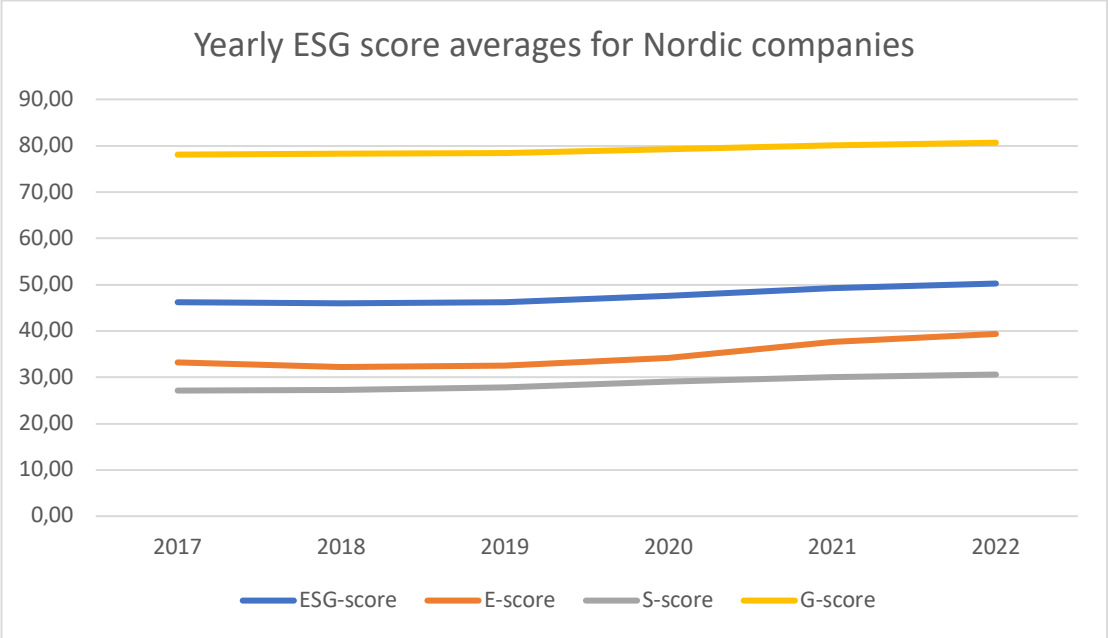
Source: made by the author, based on ESG score data.

The yearly ESG score averages for Baltic companies have exhibited an interesting trend over the past six years. Initially, in 2017, the overall ESG score for all companies included in the study was recorded at 27.01, however, the following year, there was a notable decline to 24.41, this is due to the fact that a much larger number of companies had their ESG scores published in 2018, from only 6 companies in 2017 to 22 companies in 2018. The score continued to grow in 2019, reaching 25.46. The positive trajectory continued into 2020, 2021 and 2022, with the all-time highest score 30.69. This suggests a considerable improvement in sustainability practices across these companies and illustrating the focus and ongoing improvement of Baltic companies in advancing sustainability initiatives.

When examining the breakdown of the ESG score, the E-score exhibited the most notable changes. After starting at 13.38 in 2017, it experienced a decline to 11.04 in 2018, followed by gradual increments in the following years. By 2021, the E-score reached 18.64,

indicating slightly stronger environmental sustainability performance. This positive trend continued into 2022, with an E-score of 21.45. The S-score displayed consistent positive performance, starting at 16.19 in 2017. It reached 20.87 in 2022, commitment of companies in the Baltic region to social initiatives and responsibility so society. Lastly, the G-score commenced at a strong level of 51.36 in 2017 but declined to 46.07 in 2018. This is also due to an enlarged number of companies that started reporting in 2018. G-score shows a steady improvement in subsequent years, reaching 49.69 in 2022. The G-score is highest of all. Overall, the yearly ESG score averages for Baltic companies depict a positive trend, with notable enhancements observed in the ESG, E-score, S-score, and G-score after 2020.

Figure 3. *Yearly ESG score averages for Nordic companies.*



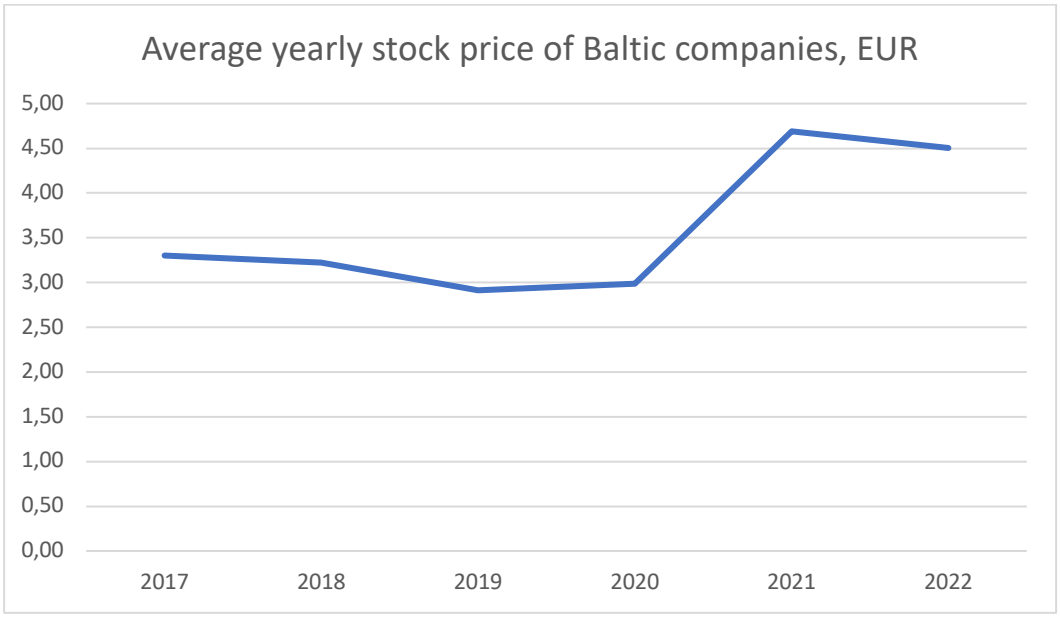
Source: made by the author, based on ESG score data.

The analysis of the yearly ESG score averages for Nordic companies indicates a relatively stable trend over the past six years. In 2017, the ESG score was at 46.20, reflecting a positive overall performance in ESG factors. This score experienced a marginal decline in 2018 to 45.97 but rebounded in the following years. In 2019, the ESG score reached 46.24, and this positive trend continued into 2020 and 2021, with ESG scores of 47.53 and 49.30, respectively, reflecting a continuous improvement in sustainability performance. Remarkably, in 2022, the ESG score experienced a notable increase to 50.24, suggesting a significant enhancement in the sustainability practices of Nordic companies.

When examining the breakdown of the ESG score, the E-score, showed a similar pattern of improvement. Starting at 33.26 in 2017, the E-score there was a slight decline in 2018 to 32.21. However, it consistently increased in subsequent years, reaching 39.35 in 2022. Similarly, the S-score, which evaluates social factors, displayed a positive trend. Starting at 27.12 in 2017, the S-score performed a gradual increase in subsequent years, reaching 30.59 in 2022. This improvement highlights the sustained commitment of social responsibility. Lastly, the G-score was highest of all scores. It started at a high level of 78.08 in 2017, with minimal fluctuations until 2019. In 2020 and 2021, the G-score further increased to 79.23 and 80.11, respectively, demonstrating the successful governance practices by Nordic companies. This positive trend continued into 2022, with a G-score of 80.65, indicating ongoing efforts to strengthen corporate governance structures. Generally, the yearly ESG score averages for Nordic companies depict a positive and stable trend. These scores highlight the commitment of Nordic companies to improve sustainability and responsible business practices.

To sum up, both Baltic and Nordic companies have shown a positive trend in their ESG scores. However, Nordic companies generally demonstrate higher scores compared to Baltic companies, indicating a potentially stronger focus on environmental, social, and governance aspects. It is also worth noting that the E-score has seen the most significant improvement for both regions, suggesting an emphasis on environmental sustainability and indicating potentially stronger and better environmental practices.

Figure 4. *Yearly stock price averages for Baltic companies.*



Source: made by the author, based on stock price data.

Upon analyzing the yearly ESG score averages and trends in the Baltic and Nordic regions, it is useful to analyze the stock price averages of Baltic companies from 2017 to 2022. Firstly, there was a slight decrease in stock prices between 2017 and 2018, with prices dropping from 3.30 EUR to 3.23 EUR. However, this decline was relatively minor. In 2019, stock prices further decreased to 2.91 EUR. This decrease in prices could indicate various factors such as market conditions or company-specific changes. In 2020, there was a slight recovery as stock prices increased to 2.99 EUR. However, the most significant change occurred from 2020 to 2021, where the stock prices jumped to 4.69 EUR. This represents a significant increase, suggesting positive performance or market sentiment surrounding Baltic companies. Looking to 2022, stock prices have decreased slightly to 4.50 EUR, but it is important to note that this data only includes the average stock prices for each year and does not provide insight into any specific factors driving the fluctuations. Overall, the observed fluctuations in stock prices for Baltic companies suggest a mix of positive and negative trends over the years. Further analysis would be required to understand the underlying factors driving these price changes and to make informed conclusions about the financial performance of the Baltic companies.

Figure 5. *Yearly stock price averages for Nordic companies.*

Source: made by the author, based on stock price data.

After analyzing the annual average stock prices of Nordic companies from 2017 to 2022, a few key trends emerge. Initially, there was a gradual rise in stock prices throughout this timeframe, with some minor fluctuations. In the first two years, 2017 and 2018, the stock

prices were quite consistent, showing a slight increase from 19.06 EUR to 19.23 EUR. The year 2019 witnessed a more significant rise to 19.82 EUR. The period between 2020 and 2021 marked the most significant shift, with stock prices rising from 23.16 EUR to 32.21 EUR, indicating either strong performance or positive market perceptions towards Nordic companies. In 2022, there was a minor dip in stock prices to 26.87 EUR, but the price is higher than two years ago in 2020. Overall, the trend in stock prices of Nordic companies over these years points to a positive direction, with a notable increase observed between 2020 and 2021.

In summary, the yearly stock price averages of Baltic and Nordic companies highlight key differences in market dynamics. Baltic companies showed relative stability with minor fluctuations, while Nordic companies displayed an overall upward trend with significant increases in stock prices, particularly in 2020 and 2021. The lower stock prices of Baltic companies can be attributed to differences in market size and company scale, but it is also very important that the sample size of the two regions is very different.

3.2 Research on ESG impact on companies' stock prices

The first step in researching how ESG scores affect stock prices is preparation of the file. and it's set up to work well with EViews, a software used for detailed data analysis. In this file, each line combines information about a company with a specific year. This method, known as the 'long format', is perfect for EViews because it clearly shows data over time for each company. The file also neatly separates the main information into two columns: one for 'Stock_Price' and another for 'ESG_Score'. This clear layout makes it easier to study how these two factors might be related across different companies and years. This way of organizing the data is a crucial first step. It makes sure that when the data is put into EViews, the software can easily handle and analyze it, setting the stage for more complex investigations into the relationship between ESG scores and stock prices.

The first regression that was run for this research is a simple pooled panel regression. Not choosing a fixed or random-effects model is very important, the decision as to which model should be chosen is made after this calculation, according to Brooks (2014). The dependent variable x was the stock price, and the independent variable y was ESG-score. The coefficient for ESG-score is 0.302987, this result is statistically significant at the 99.99% confidence level ($p < 0.0001$) and means a positive relationship between ESG scores and stock prices. However, the R-squared value is 0.018368, which means that approximately only 1.84% of the variation

in stock prices is explained by the ESG-score. This is relatively low, and it suggests that there are other factors not included in the model that influence stock prices.

The F-statistic of this model is 18.84300 with a very significant p-value indicating that the overall model is statistically significant and that the ESG-score has a collectively significant effect on stock prices. The Durbin-Watson statistic is 0.136739, which is very low, and indicates a potential positive autocorrelation in the residuals of the regression model. This could suggest that the model is missing some information that is captured in the residuals from one period to the next.

Table 8. *A panel regression analysis using EViews*

Dependent variable	STOCK_PRICE			
Method:	Panel Least Squares			
Sample:	2017:2022			
Total panel (unbalanced) observations:	1009			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8,334736	3,287876	2,534991	0,0114
ESG_SCORE	0,302987	0,069799	4,340852	0
R-squared	0,018368			
Adjusted R-squared	0,017393			
F-statistic	18,843			
Prob(F-statistic)	0,000016			

Source: made by the author, based on EViews calculations.

To summarize, the results suggest a positive and statistically significant impact of ESG-scores on stock prices. However, the low R-squared indicates that the ESG-score is not the only variable that influences stock prices. Additionally, the low Durbin-Watson statistic suggests that there might be autocorrelation issues that need to be addressed, possibly by adding lagged variables or looking into other factors that might influence stock prices over time. Therefore, a fixed-effect model is performed.

Before conducting the fixed-effect model, a Granger Causality test is performed in order to check if the variables predict each other. The null hypothesis for each test is that the first variable does not Granger-cause the second variable. For the first test to determine if stock prices predict ESG-scores, the F-statistic is 1.19641 with a p-value of 0.3030. Since the p-value

is greater than a common significance level (0.05), the null hypothesis is not rejected. This means there is not enough statistical evidence to conclude that past values of stock prices predict ESG-scores.

The second test to determine if ESG-score predicts stock price the F-statistic is 2.16308 with a p-value of 0.1158. Similarly, since this p-value is greater than 0.05, the null hypothesis is not rejected. This means that there is not enough statistical proof to conclude that past values of ESG-scores have a predictive effect on stock prices. These results show that neither variable is useful for predicting the other in the Granger sense. This shows that the relationship between ESG-scores and stock prices is more complex also that other factors could also be of influence both variables.

The fixed-effect panel regression model shows slightly different results. The coefficient for ESG-score is now 0.661757, which is significantly higher than in the previous model. It is statistically significant at the 99.99% confidence level ($p < 0.0000$), suggesting a stronger positive relationship between ESG scores and stock prices when controlling for individual fixed effects. The R-squared value is 0.892699, a substantial increase from the previous model, indicating that approximately 89.27% of the variation in stock prices is now explained by the ESG score and the fixed effects included in the model. The adjusted R-squared value is 0.867290, which remains high, indicating a good fit of the model to the data after adjusting for the number of predictors.

Table 9. *A fixed-effects panel regression analysis using EViews.*

Corrrelated Random Effects - Hausman Test				
Equation:	Untitled			
Test cross-section random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob	
Cross-section random	3,904765	1	0,0481	
Cross-section random effects test comparisions:				
Variable	Fixed	Random	Var(Diff).	Prob.
ESG_SCORE	0,661757	0,569146	0,002196	0,0481

Source: made by the author, based on EViews calculations.

The F-statistic is 35.13204 with a p-value (Prob(F-statistic)) of less than 0.0001, which shows that the model is statistically significant overall. The Durbin-Watson statistic is

1.263411, which is closer to the value of 2 which suggests no autocorrelation. This value indicates that autocorrelation may be less of an issue in this fixed-effects model than it was in the previous pooled regression model.

In conclusion, the fixed-effects model indicates a robust and statistically significant positive relationship between ESG scores and stock prices, with a high proportion of variance in stock prices explained by the model. The fixed-effects approach appears to have addressed some of the autocorrelation concerns, providing a more reliable estimation of the impact of ESG scores on stock prices.

The same panel data was used for a random-effects model. This model shows the coefficient for ESG-score is 0.569146 with a standard error of 0.078954. The weighted R-squared is 0.049700, which means that around 4.97% of the variation in stock prices is explained by the ESG scores when considering the random effects model. This is an improvement compared to the panel least squares model but still indicates that the majority of the variation in stock prices is not explained by the model. Therefore, the Hausman test was conducted on the random-effects model in order to see which model would be more appropriate for this thesis.

Table 10. *Hausman test using EViews.*

Corrrelated Random Effects - Hausman Test				
Equation:	Untitled			
Test cross-section random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob	
Cross-section random	3,904765	1	0,0481	
Cross-section random effects test comparisions:				
Variable	Fixed	Random	Var(Diff).	Prob.
ESG_SCORE	0,661757	0,569146	0,002196	0,0481

Source: made by the author, based on EViews calculations.

The Hausman test shows that the Chi-Square statistic is 3.904765 with 1 degree of freedom and a probability of 0.0481. Since the p-value is less than 0.05, this suggests that the null hypothesis is rejected, indicating that the fixed effects model is more suitable for this data set. The test compares coefficients from the fixed and random effects models. The ESG-score coefficient under the fixed effects model is 0.661757, and under the random effects model, it is 0.569146. The variance of the difference is 0.002196 with a probability of 0.0481, indicating

that there is a significant difference between the coefficients estimated by the fixed and random effects models.

Based on the Hausman test results, the fixed effects model is the preferred model for analyzing the impact of ESG scores on stock prices. This model not only provides a better fit as evidenced by the higher R-squared but also works more appropriately with the individual heterogeneity across companies. The significant coefficient for ESG-score in the fixed effects model reaffirms the positive relationship between ESG scores and stock prices, controlling for unobserved heterogeneity.

After conducting these tests, the first hypothesis can be checked:

H_1: ESG performance score influences companies' stock prices.

H_{a1}: ESG performance score doesn't influence companies' stock prices.

Based on the conducted econometric research methods, including the panel least squares, random effects model, and the Hausman test that suggests the fixed effects model is more appropriate, the coefficient for the ESG performance score is positive and statistically significant in all models. This means that there is enough evidence to reject the null hypothesis H_{a1} in favor of the alternative hypothesis H_1, indicating that the ESG performance score does indeed influence companies' stock prices.

The results are opposite from the results achieved from the research done by Torre et al. (2020) who have found no impact of ESG on companies' stock prices. The conducted research differs from Gavrilakis and Floros (2023) research where it is concluded that ESG scores are not a priority for investors. However, the achieved results are very similar to the results that were reached in research done by Koelbelz et al. (2021) who found that higher ESG scores are associated with higher expected returns. The results are also similar to calculations done by Lapinskiene et al. (2023) who have found that stock prices partially depend on environmental data and Shanaev and Ghimire (2021) who have found in their research that both positive and negative ESG score changes influence stock prices.

Results of the conducted econometrical research imply that strong ESG practices are increasingly seen as indicators of good risk management, making stocks more attractive for investors. Study shows that there's a growing demand among investors for companies with high ESG scores. Companies with higher ESG ratings are often perceived as better positioned for long-term performance due to better strategic management. As ESG becomes a more important factor for investors, this can significantly change the stock market in the upcoming years.

3.2 E-score impact on stock prices in the Baltic and Nordic regions

The second part of the research is conducted using the fixed-effects model just like in the first part. A fixed-effects model has been selected for the analysis of the relationship between E, S, and G-scores and stock prices. This decision was reached following a similar comparison process just like in the first part of the research on the relationship between ESG-scores and stock prices. Models without effects, random effects, and fixed effects were performed using EViews. After that, the Hausman test was done to choose the most suitable model for the final dataset that contains all separate scores for all of the companies that were included in the study.

The results of the Hausman test showed that the fixed-effects model was more suitable for this study. The Chi-Square statistic result was 9.428739 with a p-value of 0.0241. The p-value is below the significance level of 0.05, this means that the fixed-effects model is better for the unobserved heterogeneity that may be correlated with the independent variables – E, S, and G-scores. Reasons behind the choosing the fixed-effects model are very important, but the selection process is not described in detail because it was very similar to what has been performed in the previous section. Instead, there is set more focus on the results of the analysis using the chosen fixed-effects model.

The results from a panel least squares regression with cross-section fixed effects show some interesting points. The coefficient for E-score equals to 0.117933, which is not statistically significant ($p = 0.0704$) because the p-value is above the common statistical significance level which is less than 0.05, according to Brooks (2014). It indicates a positive relationship between the environmental score and stock price. According to the regression analysis, a one-unit increase in E-score is associated with a decrease of approximately 0.118 units in the stock price, when other factors are constant. This positive but low impact of the E-score on stock prices is very surprising, considering the previously conducted research by other researchers, such as Lapinskiene et al. (2023), who have concluded that E-scores have the most impactful relationship to companies' stock price.

Table 11. *Fixed-effects panel regression analysis using EViews.*

Dependent variable	STOCK_PRICE
Method:	Panel Least Squares
Sample:	2017:2022
Total panel (unbalanced) observations:	1003

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16,99153	6,276248	-2,707275	0,0069
E_SCORE	0,117933	0,065084	1,812011	0,0704
S_SCORE	0,289014	0,105418	2,741602	0,0063
G_SCORE	0,361445	0,088052	4,104886	0
R-squared	0,893016			
Adjusted R-squared	0,867329			
F-statistic	34,76545			
Prob(F-statistic)	0			

Source: made by the author, based on EViews calculations.

On the other hand, the coefficient for the S-score is 0.289014, which is statistically more significant than the E-score with a P value of 0.0062. This suggests a positive relationship between the social score and stock price, as well as the relationship with E-score. The coefficient shows that a one-unit increase in S-score is associated with an increase of around 0.29 in the stock price. The coefficient for the G-score is 0.361445 and is highly significant with a P value of 0.00, indicating a positive relationship between the governance score and stock price. A one-unit increase in the G-score is associated with an increase of approximately 0.36 in the stock price. This coefficient is the biggest so far and it suggests that governance scores are the most important when impacting stock price compared to environmental and social scores.

To discuss the results of the model further, it's worth mentioning that the R-squared value is 0.893016. This means that the model (E, S, and G-scores) explains approximately 89.30% of the variation in stock prices. This value is quite high and suggests that this model is suitable for the research. The F-statistic result of approximately 34.77 with a p-value of 0.00, also shows that the overall model is statistically significant.

In conclusion, this model with fixed effects suggests that the social and governance scores have a much stronger impact on stock prices, while the environmental score has a significantly lower impact, differently than previously analyzed articles on this topic. The fixed effects panel regression model is suitable for explaining the variation in stock prices by E, S, and G-scores and is statistically significant overall. However, the presence of some positive autocorrelation suggests that the model may be missing some other variables that can impact stock prices, such as GDP, inflation rate, earnings and revenue growth, interest rates, and currency rates (Yang et al. 2022). But in this thesis, not using earlier mentioned variables, only

the ESG, E, S, and G scores, has several benefits. It allows for clear isolation of the scores' effect on stock prices and provides a straightforward interpretation of how changes in ESG scores influence stock prices without the disturbance of other factors. This simplicity also allows to avoid issues like multicollinearity. Focusing solely on the ESG, E, S, and G scores ensures that the research remains concentrated on the primary objective, reduces data requirements, and simplifies model specification, leading to potentially clearer findings.

This econometrical analysis allows us to come back to the second hypothesis:

H_2: The E-score has a greater impact on stock prices than the S and G-scores.
H_{a2}: The E-score doesn't have more impact on stock prices than the S and G-scores.

Based on the research conducted on the impact of E, S, and G-scores on companies' stock prices the results show that E-score is not the most impactful variable for stock prices. The performed tests and fixed-effects panel regression analysis show that, overall, the E-score is less impactful on stock price than S-scores and G-scores. Social scores have more than two times more impact on stock prices than environmental scores and governance scores are the most important out of the three variables that have a statistically significant impact on stock price. Therefore, the second hypothesis is rejected, and the alternative hypothesis is accepted.

3.3 Impact of ESG scores on stock prices in the Baltics and the Nordics

The research so far included the full data sample for both the Baltic and the Nordic regions in a single panel dataset. The concluding section of the research focuses on a comparative analysis of how ESG scores impact stock prices across different regions. This part aims to examine whether the influence of environmental, social, and governance scores on stock varies significantly from one region to another or if the impact is very similar. For this purpose, the upcoming research includes all – ESG, E, S, and G-scores. The analysis is conducted using two separate data files in EViews. The comparison of ESG impacts on stock prices in the different regions begins by examining data of companies which are located in the Baltic countries: Lithuania, Latvia, and Estonia. This dataset is very small, compared to the previous ones, the size of the dataset reflects the size of the market that these companies are trading in.

The fixed-effects panel regression model shows that not all variables are statistically significant. The coefficient of an E-score equals to 0.054854 is statistically significant. The p-value is 0.0422 and suggests a positive relationship between the environmental score and stock prices. This means that for each one-unit increase in E-score, stock prices are expected to rise by approximately 0.056 units. The social score is also statistically significant in predicting stock price changes in the Baltic region, according to this econometrical model. The coefficient of the S-score is 0.056759 p-value of 0.2199, these results are above the statistical significance level. Therefore, these findings suggest that investors are not very interested in how well companies are doing in their social field, but environmental data is one of their interests when choosing investment possibilities. The coefficient for the G-score is -0.033238 with a p-value of 0.2957 is not statistically significant either. Similarly, to the S-scores, the governance data does not have a significant impact on companies' stock prices in the Baltic region.

Another important metric is the R-squared. In this model for the Baltic region, the R-squared equals to 0.931860. This indicates that this model explains 93.19% of the variance in stock price. This model is supported by the adjusted R-squared which equals to 0.928533 as well as an F-statistic value of 40.1381 and a p-value of 0.00.

To conclude the econometrical findings regarding the impact of ESG on stock price in the Baltic region, the impact of the three variables is different. Environmental scores are statistically significant, and the research shows that these variables have a strong positive impact on stock price for the companies in the Baltic region. On the other hand, the social

governance scores are not statistically significant in the model used for the research which means that these pillars most likely do not affect stock price.

Table 12. *Fixed-effects panel regression analysis using EViews, Baltic region.*

Dependent variable	STOCK_PRICE			
Method:	Panel Least Squares			
Sample:	2017:2022			
Total panel (unbalanced) observations:	123			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3,780832	1,454384	2,599611	0,0109
E_SCORE	0,054854	0,026624	2,060314	0,0422
S_SCORE	0,056759	0,045945	1,235356	0,2199
G_SCORE	-0,032338	0,030744	-1,051835	0,2957
R-squared	0,93185			
Adjusted R-squared	0,908633			
F-statistic	40,1381			
Prob(F-statistic)	0			

Source: made by the author, based on EViews calculations.

After examining the results of the Baltic regions, the next step is to conduct an identical econometric research process to the dataset that contains the stock prices and ESG scores for Nordic companies. The number of companies is much higher in this case, the region itself is much bigger both in geographical sense and in population number. The companies in this list are located in Norway, Sweden, Finland, Iceland and Denmark. Naturally, there are more listed companies and more of those companies have their ESG scores available. This background might be one of the reasons that makes the results of the econometrical analysis different from the results of the research conducted on the companies located in the Baltic region.

The results of the fixed-effects panel regression analysis differ from the previous analysis quite a lot. The E-score has a coefficient of 0.164310 but is not statistically significant with a p-value of 0.8660, suggesting that this variable does have a significant impact on stock prices in this model. The S-score has the highest coefficient out of all of the variables with the value of 0.516178. This measure is highly statistically significant with a p-value of 0.0262. This result indicates a strong positive relationship between the social score and stock prices. The G-score coefficient 0.074519 is statistically significant as well, but the p-value of 0.6064 shows that the G-score is not the main variable that influences stock prices.

Table 13. *Fixed-effects panel regression analysis using EViews, Nordic region.*

Dependent variable	STOCK_PRICE			
Method:	Panel Least Squares			
Sample:	2017:2022			
Total panel (unbalanced) observations:	170			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1,996359	11,80889	0,169056	0,866
E_SCORE	0,16431	0,11638	1,411841	0,1603
S_SCORE	0,516178	0,229647	2,247705	0,0262
G_SCORE	0,074519	0,144305	0,516396	0,6064
R-squared	0,918608			
Adjusted R-squared	0,898859			
F-statistic	46.51318			
Prob(F-statistic)	0			

Source: made by the author, based on EViews calculations.

Overall, the model has an R-squared of 0.818088, meaning that approximately 81.81% of the variability in stock prices is explained by the fixed-effects panel data regression model. The F-statistic is significant as well, indicating that the model is a good fit for the data that was chosen for this study overall. However, the significance of individual E, S, and G-scores varies. Comparing the importance of the three variables, only the S-score shows a statistically significant impact on stock price in the Nordic market.

The research conducted in the Baltic and Nordic regions shows a comparison of how E, S, and G-scores affect stock prices. In the Baltic region, the analysis reveals a statistically significant positive relationship between environmental scores and stock prices, with an E-score impact coefficient of 0.054854 and a p-value of 0.0422. The social score, even though it is significant, has a weaker impact on stock prices, and governance scores do not significantly impact stock prices in this region. The model's explanatory power is high, with an R-squared value of 0.931860, indicating that it explains 93.19% of the variance in stock price. Overall, the Baltic findings suggest that environmental factors have an important role in influencing stock prices, while social and governance factors are less impactful.

On the other hand, the Nordic region results present a different view. In the Nordic region, the environmental score's impact on stock prices is not statistically significant, with a relatively high p-value of 0.8660. However, the social score proves a highly significant and

strong positive relationship with stock prices, having the highest coefficient among the variables at 0.516178 and a p-value of 0.0262. Governance scores, while statistically significant, are not the main influencers of stock prices just like the environmental scores. The Nordic fixed-effects panel regression model explains about 81.81% of stock price variability, as indicated by its R-squared value of 0.818088. This contrast underscores regional differences in ESG priorities, when the Nordic market places a greater importance on social factors, the most important factor in the Baltic market is the environmental factors.

Based on the information that was retrieved from the conducted research, the third hypothesis is accepted:

H_3: The ESG performance scores have a greater impact on companies' stock prices in the Nordic region compared to the Baltic region.

H_{a3}: The ESG performance scores have the same impact on companies' stock prices in both the Baltic and the Nordic regions.

The null hypothesis is rejected due to the panel regression results that show that the S-score's impact on stock price in the Nordic region is highly strong and positive. This is in comparison to the Baltic countries, where the impact of ESG scores, particularly social and governance, was not as significant. Therefore, the third hypothesis aligns more closely with the research results, suggesting regional variances in the influence of ESG scores on stock prices.

To summarize, in the methodological part of the thesis, the paper aims to analyze, explain, and compare the impact of ESG scores on companies' stock prices in two geographically different regions in Europe. The research is constructed using a fixed-effects panel regression model and EViews software for three different but similar research objectives.

An overview of the trends in ESG scores and stock prices shows that both ESG scores and stock prices in both the Baltic and Nordic regions are experiencing positive and stable growth. The first part of the analysis examines the overall relationship between ESG scores and stock prices through a pooled panel regression model. The results indicate a statistically significant but modest positive relationship between the two, with a low R-squared value, suggesting other factors also influence stock prices. A Granger Causality test also indicates that neither stock prices nor ESG scores are the only factors that predict each other.

The second part focuses on the individual impacts of E, S, and G scores on stock prices, presenting that overall S and G scores have a stronger impact than E scores. The fixed-effects panel regression model shows a significant relationship, especially with governance scores, which have the most notable influence on stock prices. The R-squared value in this phase is

much higher, it indicates that a notable proportion of variance in stock prices is explained by the model.

A comparative analysis between the Baltic and Nordic regions is done in the third part of the research. In the Baltic region, the fixed-effects panel regression model exhibits a statistically significant positive relationship between environmental scores and stock prices, while social and governance scores are not as influential. The model's R-squared value is high, explaining a significant portion of the variance in stock prices. In contrast, in the Nordic region, the environmental score does not significantly impact stock prices, but the social score shows a strong positive relationship. The governance score is statistically significant but not a primary influencer either. The model for the Nordic region explains about 81.81% of the stock price variability.

The research provides new findings into the impact of ESG scores on stock prices in the Baltic and Nordic regions. This type of data was not previously compared in this context. This comparative analysis shows the different priorities of the investors in these two geographical regions – while environmental data is important for the Baltic investors, social and governance scores are more important to the Nordic companies and investors. The research suggests that while there is a general positive correlation between ESG scores and stock prices, this relationship is not the sole predictor of stock prices. Governance scores, in particular, show a notable influence on stock prices, more so than environmental and social scores. The difference in the significance of ESG scores between the Baltic and Nordic regions highlights regional differences in investment priorities. Baltic investors appear to value environmental factors more, whereas Nordic investors give more weight to social and governance factors. This suggests that regional investor behavior and preferences should be considered when evaluating the impact of ESG scores on market performance.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The growing importance of ESG (Environmental, Social, and Governance) considerations in the corporate world has sparked significant attention in recent years. As society becomes more conscious of companies' impact on the environment, social issues, and governance practices, there is a pressing need to hold them accountable. The analysis of the theoretical part of this thesis can be summarized as follows:

1. ESG score is a quantifiable measure of a company's corporate responsibility in the environmental, social, and governance fields. It is measured by the so-called ESG scores which are provided by many different ESG score-providing companies that assess and evaluate companies based on different criteria.
2. ESG scoring methodologies face problems including a lack of standardization, due to different ESG score providers' methodologies of calculating the scores, ESG data is sometimes used as a way of greenwashing, and these problems lead to misleading investors.
3. Studies show mixed results on the impact of ESG factors, with some indicating a positive relationship with reduced crash risk, improved bank performance, and higher expected returns, while others find no significant relationship or variations across regions and periods. Research gap in the Nordic and Baltic regions creates an opportunity to analyze ESG topic in the mentioned regions.
4. Considering the results from the fixed-effects panel regression model, the ESG performance score consistently shows a positive and statistically significant coefficient across all analyses. This finding supports the hypothesis that the ESG performance score has an actual impact on the stock prices of companies.
5. Research into the effects of ESG scores on stock prices indicates that the E-score is not the leading variable. The analysis demonstrates that S and G-scores have a more significant impact on stock prices, G-scores are the most influential, investigating the data from both regions. The hypothesis suggesting that the E-score is the most impactful to stock prices is rejected in favor of the alternative hypothesis.
6. A comparison of ESG score impact on stock prices in the Baltic and the Nordic region shows that environmental, social, and governance data is more important for companies

and investors that are trading in the Nordic market. Environmental scores are the most important in the Baltic region while social and governance data is more impactful on companies' stock prices in the Nordic region.

Recommendations to companies

Based on the econometrical research that was conducted in the previous chapters, this part is dedicated to discussion and recommendations to the companies that were included in the study as well as to other listed companies in other stock markets.

1. The first and most important recommendation to all companies is to enhance ESG transparency and reporting. Nordic companies should continue to emphasize their social initiatives in their ESG disclosures because this data has shown a strong correlation with stock prices in the region. More Baltic companies should improve the transparency and detail of their ESG reporting, especially focusing on environmental practices, as the research indicates a significant positive impact of environmental scores on stock prices. This can be achieved by voluntarily including ESG-relevant information in yearly company reports as well as by following the guidelines of Corporate Sustainability Reporting Directive (CSRD). Along with the yearly reports, this information should be made easily publicly available on companies' websites and social media platforms.

2. Based on the research results, both Baltic and Nordic companies can benefit from investing in better governance practices. For the listed Baltic firms, enhancing governance and G-scores could become a more significant factor in stock valuation over time. Nordic companies, already showing a positive correlation between governance scores and stock prices, should continue to strengthen these areas to maintain investor interest and confidence. This is very important especially because strong governance practices usually correlate with the well-being of the company. This can be achieved by strengthening the diversity of the board and expertise, establishing ethical policies and anticorruption programs, as well as regularly reviewing and changing governance structures to align with best practices in their sector.

3. Companies in different regions should focus on different areas that serve the best of their interests. Baltic companies should prioritize environmental practices as part of their ESG strategy, aligning with investor interests as it has been revealed in the conducted research. This could be achieved by creating and strengthening environmental practices, such as managing CO2 emissions by switching to more sustainable vehicles and sustainable resource management. On the other hand, Nordic companies should focus more on social aspects, which

have demonstrated more impact on stock prices in the region. Focus on fair and equal pay, fair labor, and community engagement would be very beneficial.

4. Both regions should continue to improve and monitor their ESG practices, including broader and more detailed rapports, and more easily accessible information in their yearly rapports, websites, and social media platforms. Baltic companies are encouraged to develop and enhance their social and governance strategies, potentially increasing their influence over time. Nordic companies should maintain their strong social focus without neglecting environmental and governance aspects.

5. Companies in both regions should leverage their unique regional strengths. Baltic companies could capitalize on their environmental focus as a unique and strong differentiating quality in the market. Competing with other companies in their field by offering more sustainable products would be one of the ways to go. Nordic companies, meanwhile, should continue to build their strong social practices and use them as a model for further ESG development, potentially influencing broader regional practices and standards.

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ANNEXES

Figure 1. *A panel regression analysis using EViews*

Dependent Variable: STOCK_PRICE
Method: Panel Least Squares
Date: 12/14/23 Time: 21:58
Sample: 2017 2022
Periods included: 6
Cross-sections included: 193
Total panel (unbalanced) observations: 1009

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.334736	3.287876	2.534991	0.0114
ESG_SCORE	0.302987	0.069799	4.340852	0.0000

R-squared	0.018368	Mean dependent var	21.98712
Adjusted R-squared	0.017393	S.D. dependent var	30.71152
S.E. of regression	30.44326	Akaike info criterion	9.671586
Sum squared resid	933279.5	Schwarz criterion	9.681332
Log likelihood	-4877.315	Hannan-Quinn criter.	9.675289
F-statistic	18.84300	Durbin-Watson stat	0.136739
Prob(F-statistic)	0.000016		

Figure 2. *A fixed-effects panel regression analysis using EViews.*

Dependent Variable: STOCK_PRICE
Method: Panel Least Squares
Date: 12/18/23 Time: 20:53
Sample: 2017 2022
Periods included: 6
Cross-sections included: 193
Total panel (unbalanced) observations: 1009

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.831194	4.152122	-1.886070	0.0596
ESG_SCORE	0.661757	0.091816	7.207441	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.892699	Mean dependent var	21.98712
Adjusted R-squared	0.867290	S.D. dependent var	30.71152
S.E. of regression	11.18804	Akaike info criterion	7.838579
Sum squared resid	102015.3	Schwarz criterion	8.783914
Log likelihood	-3760.563	Hannan-Quinn criter.	8.197716
F-statistic	35.13204	Durbin-Watson stat	1.263411
Prob(F-statistic)	0.000000		

Figure 3. *Hausman test using EViews.*

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.904765	1	0.0481

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ESG_SCORE	0.661757	0.569146	0.002196	0.0481

Figure 4. *Fixed-effects panel regression analysis using EViews.*

Dependent Variable: STOCK_PRICE
Method: Panel Least Squares
Date: 12/19/23 Time: 19:04
Sample: 2017 2022
Periods included: 6
Cross-sections included: 192
Total panel (unbalanced) observations: 1003

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16.99153	6.276248	-2.707275	0.0069
E_SCORE	0.117933	0.065084	1.812011	0.0704
S_SCORE	0.289014	0.105418	2.741602	0.0062
G_SCORE	0.361445	0.088052	4.104886	0.0000

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.893016	Mean dependent var	22.11374
Adjusted R-squared	0.867329	S.D. dependent var	30.75949
S.E. of regression	11.20386	Akaike info criterion	7.843038
Sum squared resid	101425.4	Schwarz criterion	8.797771
Log likelihood	-3738.284	Hannan-Quinn criter.	8.205851
F-statistic	34.76545	Durbin-Watson stat	1.269596
Prob(F-statistic)	0.000000		

Figure 5. *Fixed-effects panel regression analysis using EViews, Baltic region.*

Dependent Variable: STOCK_PRICE
Method: Panel Least Squares
Date: 12/20/23 Time: 18:50
Sample: 2017 2022
Periods included: 6
Cross-sections included: 29
Total panel (unbalanced) observations: 123

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.780832	1.454384	2.599611	0.0109
E_SCORE	0.054854	0.026624	2.060314	0.0422
S_SCORE	0.056759	0.045945	1.235356	0.2199
G_SCORE	-0.032338	0.030744	-1.051835	0.2957

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.931850	Mean dependent var	4.116992
Adjusted R-squared	0.908633	S.D. dependent var	4.586111
S.E. of regression	1.386239	Akaike info criterion	3.710066
Sum squared resid	174.8709	Schwarz criterion	4.441691
Log likelihood	-196.1691	Hannan-Quinn criter.	4.007250
F-statistic	40.13810	Durbin-Watson stat	1.201582
Prob(F-statistic)	0.000000		

Figure 5. *Fixed-effects panel regression analysis using EViews, Nordic region.*

Dependent Variable: STOCK_PRICE
Method: Panel Least Squares
Date: 12/20/23 Time: 20:15
Sample: 2017 2022
Periods included: 6
Cross-sections included: 31
Total panel (unbalanced) observations: 170

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.996359	11.80889	0.169056	0.8660
E_SCORE	0.164310	0.116380	1.411841	0.1603
S_SCORE	0.516178	0.229647	2.247705	0.0262
G_SCORE	0.074519	0.144305	0.516396	0.6064

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.918608	Mean dependent var	27.57056
Adjusted R-squared	0.898859	S.D. dependent var	29.43550
S.E. of regression	9.361276	Akaike info criterion	7.487897
Sum squared resid	11918.16	Schwarz criterion	8.115056
Log likelihood	-602.4712	Hannan-Quinn criter.	7.742391
F-statistic	46.51318	Durbin-Watson stat	1.046919
Prob(F-statistic)	0.000000		

Figure 6: *full data used for the research.*

Company	Year	Stock_Price	ESG_Score	E_score	S_score	G_score
AUGA group	2017	0,45				
AUGA group	2018	0,50	30,74	22,83	18,74	50,57
AUGA group	2019	0,38	36,17	35,58	22,31	50,57
AUGA group	2020	0,39	38,83	35,58	22,31	58,52
AUGA group	2021	0,50	39,30	37,00	22,31	58,52
AUGA group	2022	0,44	42,99	41,56	26,45	60,90
Coop Pank	2017					
Coop Pank	2018		11,90		2,57	33,05
Coop Pank	2019		13,66		2,57	38,32
Coop Pank	2020	1,07	13,66		2,57	38,32
Coop Pank	2021	2,54	22,83	12,59	2,57	53,22
Coop Pank	2022	2,47				
Ekspress Grupp	2017	1,31				
Ekspress Grupp	2018	1,24	25,31	9,82	15,45	50,57
Ekspress Grupp	2019	0,86	25,31	9,82	15,45	50,57
Ekspress Grupp	2020	0,72	28,57	14,83	15,45	55,33
Ekspress Grupp	2021	1,09	27,52	3,53	23,61	55,33
Ekspress Grupp	2022	1,59	28,80	7,79	22,61	55,90
Grigeo	2017	1,22				
Grigeo	2018	1,43	16,52	1,24	12,70	35,55
Grigeo	2019	1,40	17,91	1,24	16,87	35,55
Grigeo	2020	1,20	23,21	2,08	16,87	50,57
Grigeo	2021	1,09	35,32	31,53	23,79	50,57
Grigeo	2022	0,79	35,91	32,74	23,79	51,14
Ignitis grupė	2017					
Ignitis grupė	2018		30,09	2,66	19,41	68,06
Ignitis grupė	2019		38,42	21,17	34,58	59,42
Ignitis grupė	2020		51,47	42,49	35,37	76,46
Ignitis grupė	2021	21,29	53,04	47,57	35,37	76,10
Ignitis grupė	2022	18,87				
Invalda INVL	2017	4,69				
Invalda INVL	2018	5,30	21,66	1,24	12,61	51,02
Invalda INVL	2019	5,88	17,51	1,24	12,61	38,62
Invalda INVL	2020	7,03	18,18	1,57	14,27	38,62
Invalda INVL	2021	10,93	16,82	1,57	12,70	36,12
Invalda INVL	2022	11,92	19,95	1,09	10,01	48,65
Kauno energija	2017	0,87				
Kauno energija	2018	1,11	36,72	30,23	31,92	47,95
Kauno energija	2019	1,01	37,67	33,10	31,92	47,95
Kauno energija	2020	0,86	40,23	40,77	31,92	47,95
Kauno energija	2021	1,03	39,39	38,27	31,92	47,95

Kauno energija	2022	0,94	40,39	37,72	32,95	50,45
Klaipėdos nafta	2017	0,49				
Klaipėdos nafta	2018	0,50				
Klaipėdos nafta	2019	0,39				
Klaipėdos nafta	2020	0,35				
Klaipėdos nafta	2021	0,32	39,56	31,56	26,15	60,90
Klaipėdos nafta	2022	0,26	41,85	32,74	22,76	69,93
LHV Group	2017	1,01				
LHV Group	2018	1,07				
LHV Group	2019	1,14	28,63	14,86	13,09	57,83
LHV Group	2020	1,37	31,62	15,28	21,64	57,83
LHV Group	2021	3,24	32,47	15,28	24,21	57,83
LHV Group	2022	3,59	33,76	20,45	22,91	57,83
LITGRID	2017	0,71				
LITGRID	2018	0,69	17,88	0,33	10,58	42,62
LITGRID	2019	0,63	18,88	0,33	13,60	42,62
LITGRID	2020	0,57	20,41	0,33	15,81	45,00
LITGRID	2021	0,76	20,41	0,33	15,81	45,00
LITGRID	2022	0,75				
Latvijas Gāze	2017	9,08	18,32	8,12	17,14	29,65
Latvijas Gāze	2018	10,62	19,74	8,12	21,40	29,65
Latvijas Gāze	2019	10,15	22,46	8,97	23,97	34,41
Latvijas Gāze	2020	10,03	29,02	5,86	25,79	55,33
Latvijas Gāze	2021	10,73	27,09	12,62	25,79	42,81
Latvijas Gāze	2022	8,37	25,91	10,90	23,97	42,81
Latvijas Jūras medicīnas centrs	2017	5,31				
Latvijas Jūras medicīnas centrs	2018	5,87				
Latvijas Jūras medicīnas centrs	2019	4,09	14,65	2,42	18,02	23,48
Latvijas Jūras medicīnas centrs	2020	6,51	15,00	6,67	14,81	23,48
Latvijas Jūras medicīnas centrs	2021	12,52	22,65	20,21	21,13	26,61
Latvijas Jūras medicīnas centrs	2022	12,78	24,43	20,21	23,70	29,38
Linas Agro Group	2017	0,67				
Linas Agro Group	2018	0,67	8,06		3,60	20,53
Linas Agro Group	2019	0,62	5,25		3,60	12,13
Linas Agro Group	2020	0,59	6,32		6,80	12,13
Linas Agro Group	2021	0,86	8,29		6,80	18,03
Linas Agro Group	2022	1,16				
Merko Ehitus	2017	9,22	24,54	1,75	11,43	60,33
Merko Ehitus	2018	10,03	19,53	1,75	11,43	45,30
Merko Ehitus	2019	9,54	24,54	1,75	11,43	60,33
Merko Ehitus	2020	8,76	24,54	1,75	11,43	60,33
Merko Ehitus	2021	14,58	30,07	11,36	18,41	60,33
Merko Ehitus	2022	14,50	33,13	15,13	26,21	57,95
PRFoods	2017	0,46				

PRFoods	2018	0,71				
PRFoods	2019	0,51	19,09	1,51	2,57	53,07
PRFoods	2020	0,41	21,52	1,51	2,57	60,33
PRFoods	2021	0,38	21,56	1,51	2,57	60,45
PRFoods	2022	0,33				
Panevėžio statybos trestas	2017	1,04				
Panevėžio statybos trestas	2018	0,86				
Panevėžio statybos trestas	2019	0,77				
Panevėžio statybos trestas	2020	0,63				
Panevėžio statybos trestas	2021	0,67	20,57	23,65	13,39	24,65
Panevėžio statybos trestas	2022	0,56	24,68	28,90	20,47	24,65
Pieno žvaigždės	2017	1,40				
Pieno žvaigždės	2018	1,11	14,36		9,28	33,74
Pieno žvaigždės	2019	0,96	21,72	11,93	19,44	33,74
Pieno žvaigždės	2020	1,07	25,71	11,93	19,44	45,70
Pieno žvaigždės	2021	1,58	31,26	25,46	22,58	45,70
Pieno žvaigždės	2022	1,28	31,26	25,46	22,58	45,70
Rokiškio sūris	2017	2,30				
Rokiškio sūris	2018	2,64	18,72	15,37	12,85	27,90
Rokiškio sūris	2019	2,54	18,52	11,93	15,69	27,90
Rokiškio sūris	2020	2,58	18,39	10,51	16,72	27,90
Rokiškio sūris	2021	2,89	36,19	42,34	20,89	45,30
Rokiškio sūris	2022	2,95	37,90	44,91	23,46	45,30
SAF Tehnika	2017	5,50				
SAF Tehnika	2018	4,30				
SAF Tehnika	2019	3,51				
SAF Tehnika	2020	3,72	12,77	0,48	4,69	33,05
SAF Tehnika	2021	8,85	12,77	0,48	4,69	33,05
SAF Tehnika	2022	11,95	12,77	0,48	4,69	33,05
Silvano Fashion Group	2017	2,76	11,86	0,91	5,08	29,53
Silvano Fashion Group	2018	2,69	12,69	0,91	5,08	32,03
Silvano Fashion Group	2019	2,32	12,69	0,91	5,08	32,03
Silvano Fashion Group	2020	1,67	12,69	0,91	5,08	32,03
Silvano Fashion Group	2021	1,75	12,69	0,91	5,08	32,03
Silvano Fashion Group	2022	1,03	14,57	0,91	10,70	32,03
Snaigė	2017	0,28				
Snaigė	2018	0,19				
Snaigė	2019	0,16				
Snaigė	2020	0,16	21,20	2,08	10,82	50,57
Snaigė	2021	0,21	17,01	2,08	10,82	38,05
Snaigė	2022	0,15	15,34	2,08	10,82	33,05
Tallink Grupp	2017	1,03	26,77	17,64	19,68	42,93
Tallink Grupp	2018	1,07	34,47	24,40	36,06	42,93
Tallink Grupp	2019	1,00	36,73	31,17	36,06	42,93

Tallink Grupp	2020	0,74	36,73	31,17	36,06	42,93
Tallink Grupp	2021	0,65	26,17	17,64	17,90	42,93
Tallink Grupp	2022	0,53	27,63	17,64	22,28	42,93
Tallinna Kaubamaja Grupp	2017	9,30				
Tallinna Kaubamaja Grupp	2018	9,24	26,49	22,92	16,05	40,43
Tallinna Kaubamaja Grupp	2019	8,65	31,47	22,92	16,05	55,33
Tallinna Kaubamaja Grupp	2020	8,45	31,58	23,26	16,05	55,33
Tallinna Kaubamaja Grupp	2021	10,09	32,41	23,26	16,05	57,83
Tallinna Kaubamaja Grupp	2022	10,15	33,17	25,52	16,05	57,83
Tallinna Sadam	2017					
Tallinna Sadam	2018		26,49	2,08	16,93	60,33
Tallinna Sadam	2019	2,03	26,13	6,34	8,46	63,46
Tallinna Sadam	2020	1,79	26,94	7,19	10,04	63,46
Tallinna Sadam	2021	1,90	34,21	15,49	15,24	71,76
Tallinna Sadam	2022	1,53				
Tallinna Vesi	2017	12,70	43,65	35,40	30,35	65,11
Tallinna Vesi	2018	10,32	44,26	35,40	29,81	67,49
Tallinna Vesi	2019	11,03	44,52	35,40	30,59	67,49
Tallinna Vesi	2020	12,79	44,52	35,40	30,59	67,49
Tallinna Vesi	2021	14,39	47,91	49,77	28,78	65,11
Tallinna Vesi	2022	13,23	50,88	56,87	30,59	65,11
Telia Lietuva	2017	0,94	36,92	16,46	13,48	80,64
Telia Lietuva	2018	1,12	37,71	16,46	13,48	83,02
Telia Lietuva	2019	1,18	40,17	18,42	18,89	83,02
Telia Lietuva	2020	1,49	43,56	24,43	23,07	83,02
Telia Lietuva	2021	2,04	46,48	30,08	26,21	83,02
Telia Lietuva	2022	1,97	45,63	27,51	26,21	83,02
Utenos trikotažas	2017	1,16				
Utenos trikotažas	2018	1,03	17,68	0,91	10,94	41,12
Utenos trikotažas	2019	1,02	17,68	0,91	10,94	41,12
Utenos trikotažas	2020	0,96	17,68	0,91	10,94	41,12
Utenos trikotažas	2021	0,86	22,83	1,24	13,51	53,64
Utenos trikotažas	2022	0,66	25,77	3,75	17,32	56,14
VIRŠI-A	2017					
VIRŠI-A	2018					
VIRŠI-A	2019					
VIRŠI-A	2020		16,54	14,04	12,24	23,30
VIRŠI-A	2021		17,73	14,04	15,84	23,30
VIRŠI-A	2022	4,40				
Vilniaus baldai	2017	13,12				
Vilniaus baldai	2018	10,58				
Vilniaus baldai	2019	7,53	25,09	6,89	20,22	48,07
Vilniaus baldai	2020	8,50	25,09	6,89	20,22	48,07
Vilniaus baldai	2021	10,34	25,74	8,85	20,22	48,07

Vilniaus baldai	2022	8,04	25,09	6,89	20,22	48,07
Šiaulių bankas	2017	0,43				
Šiaulių bankas	2018	0,49	35,19	22,89	21,07	61,50
Šiaulių bankas	2019	0,48	35,38	22,89	21,07	62,07
Šiaulių bankas	2020	0,44	35,38	22,89	21,07	62,07
Šiaulių bankas	2021	0,67	35,80	23,71	21,52	62,07
Šiaulių bankas	2022	0,62				
Žemaitijos pienas	2017	1,62				
Žemaitijos pienas	2018	1,72	30,74	23,29	20,80	48,07
Žemaitijos pienas	2019	1,79	31,77	23,29	20,80	51,14
Žemaitijos pienas	2020	1,78	31,88	23,62	20,80	51,14
Žemaitijos pienas	2021	1,94	33,89	33,83	16,63	51,14
Žemaitijos pienas	2022	1,80	34,17	32,11	19,20	51,14
AFRY AB	2017	16,57	40,29	19,15	23,61	77,97
AFRY AB	2018	16,82	42,23	18,30	27,78	80,46
AFRY AB	2019	18,18	46,22	19,72	38,36	80,46
AFRY AB	2020	20,75	46,65	22,56	36,79	80,46
AFRY AB	2021	26,06	45,70	19,72	36,79	80,46
AFRY AB	2022	15,43	48,74	28,84	36,79	80,46
ALK-Abelló B AS	2017	6,49	42,07	22,26	34,16	69,69
ALK-Abelló B AS	2018	6,41	50,03	37,45	35,19	77,33
ALK-Abelló B AS	2019	9,14	56,20	50,80	40,39	77,33
ALK-Abelló B AS	2020	12,96	60,15	65,18	40,39	74,83
ALK-Abelló B AS	2021	19,16	55,24	59,83	37,24	68,57
ALK-Abelló B AS	2022	17,45	54,58	57,87	37,24	68,57
ASSA ABLOY AB ser. B	2017	18,55	53,23	50,80	28,33	80,46
ASSA ABLOY AB ser. B	2018	17,50	53,36	50,80	28,72	80,46
ASSA ABLOY AB ser. B	2019	19,52	53,36	50,80	28,72	80,46
ASSA ABLOY AB ser. B	2020	18,97	52,51	50,80	26,15	80,46
ASSA ABLOY AB ser. B	2021	24,74	53,09	49,38	29,32	80,46
ASSA ABLOY AB ser. B	2022	22,11	54,98	55,06	29,32	80,46
Addtech AB ser. B	2017	4,21	.	.	.	.
Addtech AB ser. B	2018	4,52	.	.	.	.
Addtech AB ser. B	2019	5,81	44,08	25,70	25,94	80,46
Addtech AB ser. B	2020	8,73	44,55	27,12	25,94	80,46
Addtech AB ser. B	2021	15,78	45,48	28,87	26,96	80,46
Addtech AB ser. B	2022	14,82	45,48	28,87	26,96	80,46
Alfa Laval AB	2017	18,92	47,48	43,46	26,42	72,46
Alfa Laval AB	2018	21,13	50,30	50,56	30,56	69,69
Alfa Laval AB	2019	19,59	51,67	48,84	28,75	77,33
Alfa Laval AB	2020	19,45	53,80	53,40	30,56	77,33
Alfa Laval AB	2021	30,93	54,85	53,40	33,74	77,33
Alfa Laval AB	2022	27,22	54,80	51,43	35,55	77,33
Alm. Brand AS	2017	8,34				

Alm. Brand AS	2018	8,17				
Alm. Brand AS	2019	7,64	14,24	3,87	7,95	30,85
Alm. Brand AS	2020	8,54	20,19	3,87	7,95	48,65
Alm. Brand AS	2021	6,37	21,00	5,29	8,98	48,65
Alm. Brand AS	2022	1,50	33,24	23,17	14,12	62,31
Ambu AS	2017	11,41	36,05	13,29	17,02	77,69
Ambu AS	2018	22,41	36,15	14,86	21,40	72,07
Ambu AS	2019	17,47	39,09	16,58	23,22	77,33
Ambu AS	2020	26,12	48,84	38,93	35,43	72,07
Ambu AS	2021	31,95	52,53	43,73	35,43	78,33
Ambu AS	2022	12,39	53,71	46,87	24,24	89,86
Arion banki hf. ICE	2017	0,00	36,23	24,83	20,34	63,43
Arion banki hf. ICE	2018	0,00	40,28	26,79	21,10	72,82
Arion banki hf. ICE	2019	0,57	46,86	30,17	34,70	75,59
Arion banki hf. ICE	2020	0,48	46,38	28,75	34,70	75,59
Arion banki hf. ICE	2021	1,03	50,79	43,13	28,66	80,46
Arion banki hf. ICE	2022	1,17	48,54	36,36	28,66	80,46
Arjo AB ser. B	2017	0,00				
Arjo AB ser. B	2018	2,80				
Arjo AB ser. B	2019	3,62	34,59	1,57	18,44	83,59
Arjo AB ser. B	2020	5,12	42,05	18,79	23,61	83,59
Arjo AB ser. B	2021	9,14	44,66	26,64	23,61	83,59
Arjo AB ser. B	2022	5,73	51,05	40,29	22,85	89,86
Atlas Copco AB ser. A	2017	6,41	46,61	31,26	27,96	80,46
Atlas Copco AB ser. A	2018	6,18	50,44	41,74	28,99	80,46
Atlas Copco AB ser. A	2019	6,97	54,83	50,26	33,68	80,46
Atlas Copco AB ser. A	2020	9,10	55,97	48,96	32,10	86,72
Atlas Copco AB ser. A	2021	13,24	57,62	52,34	33,68	86,72
Atlas Copco AB ser. A	2022	11,00	58,48	54,91	33,68	86,72
Atrium Ljungberg AB ser. B	2017	14,45	36,83	16,04	24,40	69,93
Atrium Ljungberg AB ser. B	2018	14,17	43,55	34,40	26,21	69,93
Atrium Ljungberg AB ser. B	2019	17,29	43,71	33,86	27,24	69,93
Atrium Ljungberg AB ser. B	2020	15,02	46,50	37,24	27,24	74,92
Atrium Ljungberg AB ser. B	2021	18,46	46,62	37,57	27,24	74,92
Atrium Ljungberg AB ser. B	2022	15,55	46,46	40,71	23,64	74,92
Axfood AB	2017	14,93	32,36	24,52	23,31	49,19
Axfood AB	2018	15,80	35,65	27,09	24,33	55,45
Axfood AB	2019	17,98	45,64	36,36	24,33	76,10
Axfood AB	2020	19,00	47,16	37,54	20,19	83,59
Axfood AB	2021	21,97	46,88	36,70	20,19	83,59
Axfood AB	2022	26,68	46,88	36,70	20,19	83,59
Bavarian Nordic AS	2017	43,32	43,27	30,63	19,95	79,08
Bavarian Nordic AS	2018	24,43	46,01	30,63	17,38	89,86
Bavarian Nordic AS	2019	21,71	46,58	32,35	17,38	89,86

Bavarian Nordic AS	2020	24,81	48,23	32,35	22,34	89,86
Bavarian Nordic AS	2021	37,28	44,57	35,73	20,53	77,33
Bavarian Nordic AS	2022	29,82	44,79	36,39	20,53	77,33
Beijer Ref AB ser. B	2017	2,91	26,03	0,00	8,65	69,30
Beijer Ref AB ser. B	2018	4,86	34,96	15,46	19,98	69,30
Beijer Ref AB ser. B	2019	6,59	35,64	15,46	22,04	69,30
Beijer Ref AB ser. B	2020	8,98	38,38	23,68	22,04	69,30
Beijer Ref AB ser. B	2021	15,59	39,79	27,94	22,04	69,30
Beijer Ref AB ser. B	2022	14,65	40,72	34,52	21,01	66,53
Bilia AB ser. A	2017	9,00				
Bilia AB ser. A	2018	7,49	34,64	15,55	14,03	74,20
Bilia AB ser. A	2019	8,14	35,44	15,89	16,08	74,20
Bilia AB ser. A	2020	8,71	36,38	18,73	16,08	74,20
Bilia AB ser. A	2021	14,92	36,38	18,73	16,08	74,20
Bilia AB ser. A	2022	12,41	41,60	32,56	17,90	74,20
Billerud Aktiebolag	2017	14,47	58,34	65,36	22,82	86,72
Billerud Aktiebolag	2018	11,59	56,43	58,59	23,85	86,72
Billerud Aktiebolag	2019	10,92	59,45	58,59	32,92	86,72
Billerud Aktiebolag	2020	12,67	58,40	51,83	36,55	86,72
Billerud Aktiebolag	2021	16,87	60,32	51,83	42,29	86,72
Billerud Aktiebolag	2022	12,88	61,56	53,01	44,86	86,72
Biotage AB	2017	6,16				
Biotage AB	2018	10,20				
Biotage AB	2019	10,76	35,05	8,85	21,58	74,56
Biotage AB	2020	13,31	31,74	2,08	18,41	74,56
Biotage AB	2021	20,97	32,13	2,42	16,48	77,33
Biotage AB	2022	17,92	38,11	20,24	16,63	77,33
Boliden AB	2017	27,36	64,83	69,86	40,96	83,59
Boliden AB	2018	25,46	67,43	76,62	41,99	83,59
Boliden AB	2019	22,81	67,43	76,62	41,99	83,59
Boliden AB	2020	22,40	67,43	76,62	41,99	83,59
Boliden AB	2021	31,27	67,34	79,49	41,99	80,46
Boliden AB	2022	35,84	66,74	76,11	43,59	80,46
Bufab AB	2017	10,04				
Bufab AB	2018	10,31	36,72	15,04	20,77	74,20
Bufab AB	2019	10,01	37,02	15,95	20,77	74,20
Bufab AB	2020	11,41	36,16	15,95	18,20	74,20
Bufab AB	2021	29,06	41,84	31,95	19,23	74,20
Bufab AB	2022	26,30	42,88	35,10	19,23	74,20
Bure Equity AB	2017	10,51	21,46	0,00	11,12	53,13
Bure Equity AB	2018	10,18	21,46	0,00	11,12	53,13
Bure Equity AB	2019	15,03	22,50	0,00	11,12	56,26
Bure Equity AB	2020	21,79	28,29	9,42	12,79	62,52
Bure Equity AB	2021	36,85	32,76	10,84	18,53	68,78

Bure Equity AB	2022	23,45	33,62	10,84	21,10	68,78
Cargotec Oyj	2017	50,12	53,50	49,23	21,25	89,86
Cargotec Oyj	2018	40,55	55,65	50,98	25,97	89,86
Cargotec Oyj	2019	30,56	55,65	50,98	25,97	89,86
Cargotec Oyj	2020	26,22	56,49	53,28	26,21	89,86
Cargotec Oyj	2021	44,14	55,97	53,28	24,64	89,86
Cargotec Oyj	2022	35,42	56,44	54,70	24,64	89,86
Carlsberg A AS	2017	90,00	60,01	58,56	30,11	91,24
Carlsberg A AS	2018	97,25	60,99	56,84	34,76	91,24
Carlsberg A AS	2019	116,93	63,14	58,26	40,51	90,55
Carlsberg A AS	2020	126,47	63,07	58,59	39,96	90,55
Carlsberg A AS	2021	166,90	63,39	58,92	40,60	90,55
Carlsberg A AS	2022	145,23	65,86	66,32	40,60	90,55
Castellum AB	2017	13,16	56,57	56,78	22,94	89,86
Castellum AB	2018	14,59	57,54	57,11	25,51	89,86
Castellum AB	2019	18,01	57,73	57,44	25,76	89,86
Castellum AB	2020	18,46	59,64	61,37	30,71	86,72
Castellum AB	2021	21,87	60,43	65,30	29,14	86,72
Castellum AB	2022	15,67	62,57	70,16	30,71	86,72
Catena AB	2017	18,79				
Catena AB	2018	24,60	50,25	46,03	24,12	80,46
Catena AB	2019	41,40	52,00	47,75	27,66	80,46
Catena AB	2020	48,25	51,03	44,85	27,66	80,46
Catena AB	2021	63,50	50,43	44,85	25,85	80,46
Catena AB	2022	58,97	50,77	44,85	26,87	80,46
Chr. Hansen Holding AS	2017	66,94	45,09	47,75	25,39	62,04
Chr. Hansen Holding AS	2018	79,56	44,57	47,75	23,85	62,04
Chr. Hansen Holding AS	2019	80,94	51,78	47,75	23,85	83,59
Chr. Hansen Holding AS	2020	83,00	52,25	49,17	23,85	83,59
Chr. Hansen Holding AS	2021	73,14	57,76	57,48	25,82	89,86
Chr. Hansen Holding AS	2022	64,26				
Citycon Oyj	2017	11,15	51,84	40,62	24,88	89,86
Citycon Oyj	2018	9,25	53,13	40,62	28,78	89,86
Citycon Oyj	2019	9,23	53,13	40,62	28,78	89,86
Citycon Oyj	2020	7,03	55,69	40,62	36,46	89,86
Citycon Oyj	2021	7,28	60,58	60,74	31,02	89,86
Citycon Oyj	2022	6,76	55,50	45,48	31,02	89,86
Coloplast B AS	2017	70,98	43,75	37,45	26,42	67,28
Coloplast B AS	2018	80,66	46,20	42,31	26,42	69,78
Coloplast B AS	2019	100,50	52,91	42,31	26,42	89,86
Coloplast B AS	2020	133,05	53,77	42,31	28,99	89,86
Coloplast B AS	2021	138,28	50,99	48,35	27,18	77,33
Coloplast B AS	2022	117,96	55,37	48,93	27,18	89,86
Corem Property Group AB Pref	2017	30,39				

Corem Property Group AB Pref	2018	30,66				
Corem Property Group AB Pref	2019	33,42				
Corem Property Group AB Pref	2020	31,07	28,35	5,32	18,08	61,53
Corem Property Group AB Pref	2021	31,89	30,82	12,50	18,32	61,53
Corem Property Group AB Pref	2022	25,03	30,36	11,11	18,32	61,53
DFDS AS	2017	48,66				
DFDS AS	2018	45,55	37,82	9,70	20,01	83,59
DFDS AS	2019	37,24	48,43	27,39	21,58	96,12
DFDS AS	2020	29,88	48,77	27,39	22,61	96,12
DFDS AS	2021	44,91	49,24	28,81	22,61	96,12
DFDS AS	2022	35,04	54,47	42,71	24,43	96,12
Danske Bank AS	2017	32,67	44,62	34,94	28,02	70,80
Danske Bank AS	2018	25,39	52,03	32,98	30,59	92,35
Danske Bank AS	2019	14,27	50,53	35,76	23,31	92,35
Danske Bank AS	2020	12,51	52,26	35,76	28,51	92,35
Danske Bank AS	2021	14,94	53,44	36,73	31,08	92,35
Danske Bank AS	2022	15,21	54,19	38,99	31,08	92,35
Demant AS	2017	21,79	41,34	18,45	30,14	75,32
Demant AS	2018	30,90	42,32	18,45	28,54	79,83
Demant AS	2019	26,91	43,15	19,87	29,63	79,83
Demant AS	2020	26,39	41,87	20,21	27,81	77,45
Demant AS	2021	42,18	46,20	28,27	30,38	79,83
Demant AS	2022	34,20	46,19	28,27	27,21	82,96
Diös Fastigheter AB	2017	5,07				
Diös Fastigheter AB	2018	5,45				
Diös Fastigheter AB	2019	7,27	48,17	29,45	31,35	83,59
Diös Fastigheter AB	2020	6,53	47,25	29,45	31,35	80,82
Diös Fastigheter AB	2021	8,94	47,01	31,65	25,63	83,59
Diös Fastigheter AB	2022	7,90	47,21	29,69	28,20	83,59
EQT AB	2017	0,00				
EQT AB	2018	0,00				
EQT AB	2019	0,00	37,04	13,50	19,50	77,97
EQT AB	2020	15,44	38,73	15,22	20,34	80,46
EQT AB	2021	35,98	41,08	15,22	27,42	80,46
EQT AB	2022	25,41	41,15	16,07	26,78	80,46
Electrolux Professional AB ser. B	2017	0,00	58,22	55,06	39,06	80,46
Electrolux Professional AB ser. B	2018	0,00	54,79	46,33	37,48	80,46
Electrolux Professional AB ser. B	2019	0,00	54,79	46,33	37,48	80,46
Electrolux Professional AB ser. B	2020	0,00	55,43	46,66	39,06	80,46
Electrolux Professional AB ser. B	2021	5,67	59,39	52,34	45,28	80,46
Electrolux Professional AB ser. B	2022	5,02	59,39	52,34	45,28	80,46
Electrolux, AB ser. A	2017	27,84				
Electrolux, AB ser. A	2018	21,62	46,51	33,59	25,36	80,46
Electrolux, AB ser. A	2019	21,86	50,00	44,04	25,36	80,46

Electrolux, AB ser. A	2020	16,82	50,00	44,04	25,36	80,46
Electrolux, AB ser. A	2021	21,51	55,49	51,98	33,92	80,46
Electrolux, AB ser. A	2022	13,87				
Elisa Corporation	2017	33,76	58,19	44,85	39,75	89,86
Elisa Corporation	2018	36,52	57,14	44,85	36,58	89,86
Elisa Corporation	2019	43,05	59,40	44,85	43,38	89,86
Elisa Corporation	2020	50,90	62,26	55,00	41,81	89,86
Elisa Corporation	2021	51,39	62,78	55,00	43,38	89,86
Elisa Corporation	2022	51,68	63,23	57,93	41,81	89,86
Embracer Group AB ser. B	2017	1,01				
Embracer Group AB ser. B	2018	2,72				
Embracer Group AB ser. B	2019	3,39	20,31	0,00	2,96	57,83
Embracer Group AB ser. B	2020	6,55	24,88	1,72	14,96	57,83
Embracer Group AB ser. B	2021	10,40	27,41	6,61	12,39	63,09
Embracer Group AB ser. B	2022	6,60	32,83	11,17	23,55	63,67
Epiroc AB ser. A	2017	0,00				
Epiroc AB ser. A	2018	0,00	46,91	28,72	31,41	80,46
Epiroc AB ser. A	2019	9,49	46,07	26,22	31,41	80,46
Epiroc AB ser. A	2020	11,49	47,60	30,81	31,41	80,46
Epiroc AB ser. A	2021	19,20	47,63	31,68	33,01	78,09
Epiroc AB ser. A	2022	17,16	55,66	55,78	33,01	78,09
Ericsson, Telefonab. L M ser. A	2017	5,67	55,76	52,97	29,59	84,59
Ericsson, Telefonab. L M ser. A	2018	6,69	54,49	46,39	29,59	87,36
Ericsson, Telefonab. L M ser. A	2019	8,09	58,40	54,97	32,77	87,36
Ericsson, Telefonab. L M ser. A	2020	9,29	58,40	54,97	32,77	87,36
Ericsson, Telefonab. L M ser. A	2021	10,44	61,49	55,30	41,72	87,36
Ericsson, Telefonab. L M ser. A	2022	7,72	61,87	57,02	41,11	87,36
Essity AB ser. A	2017	0,00	66,87	60,50	58,86	81,22
Essity AB ser. A	2018	22,03	66,14	61,91	55,23	81,22
Essity AB ser. A	2019	26,87	66,90	64,21	55,23	81,22
Essity AB ser. A	2020	28,03	66,49	59,35	58,86	81,22
Essity AB ser. A	2021	27,49	70,53	69,07	58,86	83,59
Essity AB ser. A	2022	23,41	73,67	69,41	67,99	83,59
Evolution AB	2017	9,37	34,39	14,80	14,03	74,20
Evolution AB	2018	11,50	34,39	14,80	14,03	74,20
Evolution AB	2019	18,15	34,39	14,80	14,03	74,20
Evolution AB	2020	52,56	35,03	15,13	15,60	74,20
Evolution AB	2021	128,23	37,64	15,13	17,17	80,46
Evolution AB	2022	94,29	39,83	19,87	18,98	80,46
FLSmidth & Co. AS	2017	51,53	49,49	30,17	34,58	83,59
FLSmidth & Co. AS	2018	50,72	50,51	26,43	41,38	83,59
FLSmidth & Co. AS	2019	38,19	50,91	33,31	29,41	89,86
FLSmidth & Co. AS	2020	25,94	53,60	34,16	36,64	89,86
FLSmidth & Co. AS	2021	32,16	53,06	34,82	34,37	89,86

FLSmidth & Co. AS	2022	26,54	57,22	47,30	34,37	89,86
Fabege AB	2017	8,36	42,23	36,27	18,14	72,16
Fabege AB	2018	10,54	45,58	37,99	18,14	80,46
Fabege AB	2019	13,62	50,68	49,68	21,77	80,46
Fabege AB	2020	11,98	52,54	51,65	25,39	80,46
Fabege AB	2021	13,51	53,49	54,49	25,39	80,46
Fabege AB	2022	10,13	53,49	54,49	25,39	80,46
Fastighets AB Balder ser. B	2017	3,55	39,53	32,50	11,76	74,20
Fastighets AB Balder ser. B	2018	3,80	39,81	30,78	14,33	74,20
Fastighets AB Balder ser. B	2019	5,32	41,23	35,03	14,33	74,20
Fastighets AB Balder ser. B	2020	6,40	40,22	31,98	14,33	74,20
Fastighets AB Balder ser. B	2021	8,90	40,17	33,40	12,76	74,20
Fastighets AB Balder ser. B	2022	6,36				
Fiskars Corporation	2017	15,56	56,76	41,23	41,60	87,36
Fiskars Corporation	2018	14,18	57,38	42,65	45,16	84,23
Fiskars Corporation	2019	13,11	60,07	42,65	50,76	86,72
Fiskars Corporation	2020	11,75	61,55	43,49	51,21	89,86
Fiskars Corporation	2021	18,82	62,05	48,60	47,58	89,86
Fiskars Corporation	2022	18,45				
Fortnox AB	2017	3,86				
Fortnox AB	2018	6,47				
Fortnox AB	2019	12,63				
Fortnox AB	2020	25,42				
Fortnox AB	2021	47,43	40,38	19,72	23,31	77,97
Fortnox AB	2022	4,63				
Fortum Corporation	2017	15,30	69,33	65,84	51,51	90,55
Fortum Corporation	2018	19,47	68,73	65,84	49,70	90,55
Fortum Corporation	2019	20,23	71,87	71,22	51,27	93,05
Fortum Corporation	2020	17,59	69,32	65,87	48,94	93,05
Fortum Corporation	2021	23,77	71,03	67,83	52,12	93,05
Fortum Corporation	2022	15,56	71,66	69,74	52,12	93,05
GN Store Nord AS	2017	25,42	36,13	17,85	17,59	72,82
GN Store Nord AS	2018	34,45	39,28	17,85	18,62	81,22
GN Store Nord AS	2019	41,04	41,09	23,29	18,62	81,22
GN Store Nord AS	2020	53,80	46,16	25,04	23,43	89,86
GN Store Nord AS	2021	64,52	45,41	25,37	20,83	89,86
GN Store Nord AS	2022	33,12	50,07	34,73	31,74	83,59
Genmab AS	2017	138,77	29,02	0,91	11,25	74,74
Genmab AS	2018	105,79	32,96	0,91	12,27	85,52
Genmab AS	2019	119,99	36,86	2,08	22,79	85,52
Genmab AS	2020	192,13	36,53	2,08	21,22	86,09
Genmab AS	2021	251,15	38,16	6,98	21,22	86,09
Genmab AS	2022	240,42	38,18	12,17	16,08	86,09
Getinge AB ser. B	2017	13,38	42,36	33,28	19,47	74,20

Getinge AB ser. B	2018	9,15	44,17	33,28	24,91	74,20
Getinge AB ser. B	2019	12,98	50,37	38,09	29,29	83,59
Getinge AB ser. B	2020	17,46	50,98	38,93	30,29	83,59
Getinge AB ser. B	2021	31,29	50,98	38,93	30,29	83,59
Getinge AB ser. B	2022	25,22				
HEXPOL AB ser. B	2017	9,02	50,31	43,01	24,18	83,59
HEXPOL AB ser. B	2018	8,45	50,65	43,01	25,21	83,59
HEXPOL AB ser. B	2019	7,46	54,34	48,66	30,65	83,59
HEXPOL AB ser. B	2020	7,11	54,81	50,08	30,65	83,59
HEXPOL AB ser. B	2021	10,28	55,97	50,38	33,83	83,59
HEXPOL AB ser. B	2022	9,33				
HMS Networks AB	2017	11,65				
HMS Networks AB	2018	13,54	32,70	24,13	22,76	51,14
HMS Networks AB	2019	14,61	32,70	24,13	22,76	51,14
HMS Networks AB	2020	17,91	31,92	20,21	24,33	51,14
HMS Networks AB	2021	39,58	33,71	30,72	19,20	51,14
HMS Networks AB	2022	36,87				
Hennes & Mauritz AB, H & M ser. B	2017	22,16	45,96	41,65	23,97	72,16
Hennes & Mauritz AB, H & M ser. B	2018	13,83	45,80	39,11	26,03	72,16
Hennes & Mauritz AB, H & M ser. B	2019	16,00	48,16	43,04	29,20	72,16
Hennes & Mauritz AB, H & M ser. B	2020	14,73	46,25	43,04	23,46	72,16
Hennes & Mauritz AB, H & M ser. B	2021	18,30	45,52	40,83	23,46	72,16
Hennes & Mauritz AB, H & M ser. B	2022	12,05	48,45	40,83	34,64	69,78
Hexagon AB ser. B	2017	5,78	36,55	15,28	19,26	74,95
Hexagon AB ser. B	2018	6,81	37,86	15,28	20,83	77,33
Hexagon AB ser. B	2019	6,55	38,26	16,46	20,83	77,33
Hexagon AB ser. B	2020	7,94	38,84	18,21	20,83	77,33
Hexagon AB ser. B	2021	12,50	47,26	43,49	20,83	77,33
Hexagon AB ser. B	2022	11,05	47,37	43,82	20,83	77,33
Hexatronic Group AB	2017	1,15				
Hexatronic Group AB	2018	1,07	41,24	22,71	20,41	80,46
Hexatronic Group AB	2019	1,05	41,82	24,43	20,41	80,46
Hexatronic Group AB	2020	1,09	40,51	20,51	20,41	80,46
Hexatronic Group AB	2021	4,65	40,56	20,02	21,04	80,46
Hexatronic Group AB	2022	9,70	42,09	21,44	24,21	80,46
Holmen AB ser. A	2017	19,72	53,26	43,82	31,62	84,23
Holmen AB ser. A	2018	21,33	53,26	43,82	31,62	84,23
Holmen AB ser. A	2019	22,29	54,79	48,41	31,62	84,23
Holmen AB ser. A	2020	36,47	55,63	48,41	31,62	86,72
Holmen AB ser. A	2021	41,13	58,42	56,42	32,01	86,72
Holmen AB ser. A	2022	43,75	60,68	63,18	32,01	86,72
Hufvudstaden AB ser. A	2017	14,35	33,76	23,65	19,71	57,83
Hufvudstaden AB ser. A	2018	12,87	42,64	38,60	25,15	64,09
Hufvudstaden AB ser. A	2019	15,61	42,43	39,78	23,34	64,09

Hufvudstaden AB ser. A	2020	12,68	41,58	39,78	20,77	64,09
Hufvudstaden AB ser. A	2021	13,55	49,59	56,99	20,77	70,92
Hufvudstaden AB ser. A	2022	12,43	49,91	56,15	22,58	70,92
Husqvarna AB ser. A	2017	8,39	49,09	42,07	24,61	80,46
Husqvarna AB ser. A	2018	7,59	49,77	42,07	26,66	80,46
Husqvarna AB ser. A	2019	7,34	48,99	40,11	26,27	80,46
Husqvarna AB ser. A	2020	7,58	48,99	40,11	26,27	80,46
Husqvarna AB ser. A	2021	11,72	53,39	46,39	26,90	86,72
Husqvarna AB ser. A	2022	8,22	54,44	46,39	30,08	86,72
ISS AS	2017	34,69	46,82	28,96	31,59	79,77
ISS AS	2018	29,44	53,52	30,72	39,15	90,55
ISS AS	2019	24,62	54,17	32,44	39,39	90,55
ISS AS	2020	14,26	52,81	32,44	36,00	89,86
ISS AS	2021	17,14	55,80	38,27	39,15	89,86
ISS AS	2022	17,21	55,85	37,39	40,18	89,86
Industrivärden, AB ser. A	2017	21,90	34,14	4,59	23,49	74,20
Industrivärden, AB ser. A	2018	19,66	34,14	4,59	23,49	74,20
Industrivärden, AB ser. A	2019	13,65	34,14	4,59	23,49	74,20
Industrivärden, AB ser. A	2020	12,91	36,34	4,92	23,49	80,46
Industrivärden, AB ser. A	2021	16,25	39,01	12,93	23,49	80,46
Industrivärden, AB ser. A	2022	14,48	39,12	13,26	23,49	80,46
Indutrade AB	2017	6,95	29,77	0,76	11,03	77,33
Indutrade AB	2018	7,22	30,09	1,09	11,67	77,33
Indutrade AB	2019	8,91	35,82	15,46	14,51	77,33
Indutrade AB	2020	12,76	39,22	19,72	20,47	77,33
Indutrade AB	2021	23,12	43,59	26,55	20,47	83,59
Indutrade AB	2022	20,13	45,78	33,13	20,47	83,59
Instalco AB	2017	0,00				
Instalco AB	2018	1,20				
Instalco AB	2019	1,79	31,55	1,27	19,01	74,20
Instalco AB	2020	3,17	30,78	1,75	19,01	71,43
Instalco AB	2021	7,52	33,58	1,75	24,64	74,20
Instalco AB	2022	5,02	30,80	1,75	24,64	65,89
Intrum AB	2017	30,98	34,00	1,09	18,95	81,79
Intrum AB	2018	22,87	37,22	5,68	21,52	84,29
Intrum AB	2019	23,87	36,99	5,68	21,52	83,59
Intrum AB	2020	19,21	36,99	5,68	21,52	83,59
Intrum AB	2021	25,20	32,80	5,68	21,52	71,07
Intrum AB	2022	18,75	42,04	18,85	26,66	80,46
Investor AB ser. A	2017	9,84	31,69	6,92	13,78	74,20
Investor AB ser. A	2018	9,32	32,03	6,92	14,81	74,20
Investor AB ser. A	2019	10,65	41,23	13,50	29,59	80,46
Investor AB ser. A	2020	12,48	41,45	14,16	29,59	80,46
Investor AB ser. A	2021	19,00	41,91	14,50	30,62	80,46

Investor AB ser. A	2022	18,63	41,91	14,50	30,62	80,46
JM AB	2017	27,35	44,16	28,39	22,85	81,10
JM AB	2018	17,01	44,39	28,39	21,04	83,59
JM AB	2019	20,91	44,05	28,39	20,01	83,59
JM AB	2020	23,28	44,05	28,39	20,01	83,59
JM AB	2021	32,29	49,57	36,39	28,60	83,59
JM AB	2022	20,33	51,77	42,98	28,60	83,59
Jyske Bank AS	2017	48,72	39,21	15,61	16,32	85,52
Jyske Bank AS	2018	43,54	41,17	17,37	20,47	85,52
Jyske Bank AS	2019	31,53	31,83	9,27	21,49	64,60
Jyske Bank AS	2020	27,35	30,47	9,27	19,92	62,10
Jyske Bank AS	2021	39,81	34,16	14,07	19,92	68,36
Jyske Bank AS	2022	52,72	36,79	19,18	22,70	68,36
KONE Corporation	2017	43,74	56,16	47,60	24,61	96,12
KONE Corporation	2018	43,69	56,79	47,93	25,45	96,81
KONE Corporation	2019	50,71	59,04	54,70	25,45	96,81
KONE Corporation	2020	63,08	62,80	63,03	28,42	96,81
KONE Corporation	2021	65,17	63,37	64,75	28,42	96,81
KONE Corporation	2022	46,45	63,94	63,88	30,99	96,81
Kemira Oyj	2017	11,32	73,43	73,78	57,22	89,22
Kemira Oyj	2018	10,98	73,90	73,78	57,22	90,61
Kemira Oyj	2019	12,74	73,63	77,17	53,05	90,61
Kemira Oyj	2020	11,44	75,12	75,75	54,05	95,48
Kemira Oyj	2021	13,51	78,29	78,95	60,37	95,48
Kemira Oyj	2022	12,58	78,57	79,79	60,37	95,48
Kesko Corporation A	2017	10,91	51,70	44,16	30,35	80,46
Kesko Corporation A	2018	11,76	55,38	44,16	41,41	80,46
Kesko Corporation A	2019	12,57	60,11	46,12	52,99	81,16
Kesko Corporation A	2020	16,89	61,98	46,12	52,99	86,72
Kesko Corporation A	2021	25,95	61,40	44,40	52,99	86,72
Kesko Corporation A	2022	21,54	64,17	52,70	52,99	86,72
Kinnevik AB ser. A	2017	26,98	34,65	4,92	18,41	80,46
Kinnevik AB ser. A	2018	27,04	34,31	4,92	17,38	80,46
Kinnevik AB ser. A	2019	23,81	35,43	4,92	20,74	80,46
Kinnevik AB ser. A	2020	27,79	35,43	4,92	20,74	80,46
Kinnevik AB ser. A	2021	40,36	38,83	12,93	22,94	80,46
Kinnevik AB ser. A	2022	18,25	38,03	12,93	22,94	78,09
Kojamo Plc	2017		30,08	7,58	8,28	74,20
Kojamo Plc	2018		35,16	22,83	8,28	74,20
Kojamo Plc	2019	12,73	39,52	26,70	17,53	74,20
Kojamo Plc	2020	18,11	49,72	45,39	29,47	74,20
Kojamo Plc	2021	18,86	51,27	43,76	29,47	80,46
Kojamo Plc	2022	17,10	51,46	44,34	29,47	80,46
Konecranes Plc	2017	36,95	49,31	37,24	21,25	89,28

Konecranes Plc	2018	33,82	54,39	38,66	28,81	95,54
Konecranes Plc	2019	30,10	54,29	39,32	36,58	86,85
Konecranes Plc	2020	23,97	53,42	39,32	33,95	86,85
Konecranes Plc	2021	35,88	54,34	44,19	38,15	80,58
Konecranes Plc	2022	27,07	55,20	46,75	38,15	80,58
Københavns Lufthavne AS	2017	101,01	40,66	37,84	23,61	60,45
Københavns Lufthavne AS	2018	100,18	43,01	36,12	23,61	69,21
Københavns Lufthavne AS	2019	103,03	41,61	32,68	22,82	69,21
Københavns Lufthavne AS	2020	86,60	41,61	32,68	22,82	69,21
Københavns Lufthavne AS	2021	114,07	41,61	32,68	22,82	69,21
Københavns Lufthavne AS	2022	113,43	43,45	35,25	22,82	72,16
Lagercrantz Group AB ser B	2017	2,99	29,56	15,13	15,05	58,40
Lagercrantz Group AB ser B	2018	2,88	29,56	15,13	15,05	58,40
Lagercrantz Group AB ser B	2019	3,83	30,28	15,46	16,87	58,40
Lagercrantz Group AB ser B	2020	5,20	31,70	19,72	16,87	58,40
Lagercrantz Group AB ser B	2021	9,94	31,70	19,72	16,87	58,40
Lagercrantz Group AB ser B	2022	9,42	31,09	19,72	15,05	58,40
Lifco AB ser.B	2017	5,52				
Lifco AB ser.B	2018	6,77				
Lifco AB ser.B	2019	8,76	29,38	22,44	16,60	49,04
Lifco AB ser.B	2020	11,54	29,73	22,44	17,62	49,04
Lifco AB ser.B	2021	20,97	30,30	24,16	17,62	49,04
Lifco AB ser.B	2022	17,88	32,11	26,22	21,01	49,04
Loomis AB	2017	32,08	27,35	0,00	10,19	71,70
Loomis AB	2018	29,38	33,33	0,33	25,30	74,20
Loomis AB	2019	32,50	36,95	9,63	26,87	74,20
Loomis AB	2020	23,23	37,80	9,63	29,44	74,20
Loomis AB	2021	24,70	44,62	23,17	36,40	74,20
Loomis AB	2022	25,55	52,55	44,22	39,15	74,20
Lundbergföretagen AB, L E ser. B	2017	32,55	36,30	23,32	23,82	61,68
Lundbergföretagen AB, L E ser. B	2018	28,39	30,65	8,94	21,22	61,68
Lundbergföretagen AB, L E ser. B	2019	32,21	26,63	1,24	16,84	61,68
Lundbergföretagen AB, L E ser. B	2020	40,17	26,63	1,24	16,84	61,68
Lundbergföretagen AB, L E ser. B	2021	49,61	28,18	5,50	17,23	61,68
Lundbergföretagen AB, L E ser. B	2022	42,63				
Marel hf.	2017	2,75				
Marel hf.	2018	2,97				
Marel hf.	2019	4,07				
Marel hf.	2020	4,32				
Marel hf.	2021	5,93	41,96	24,74	22,40	78,60
Marel hf.	2022	4,26	55,24	43,49	32,22	89,86
Medicover AB ser. B	2017	0,00				
Medicover AB ser. B	2018	7,28	31,89	0,00	18,17	77,33
Medicover AB ser. B	2019	8,06	35,66	4,56	21,80	80,46

Medicover AB ser. B	2020	10,97	37,14	7,43	23,37	80,46
Medicover AB ser. B	2021	23,94	42,42	22,26	24,40	80,46
Medicover AB ser. B	2022	15,83	42,70	23,10	24,40	80,46
Metso Oyj	2017	6,13	73,76	61,28	66,93	92,99
Metso Oyj	2018	6,14	73,76	61,28	66,93	92,99
Metso Oyj	2019	4,71	74,23	62,70	66,93	92,99
Metso Oyj	2020	5,50	66,71	49,83	57,22	92,99
Metso Oyj	2021	9,12	69,23	55,57	59,04	92,99
Metso Oyj	2022	8,14	71,13	58,71	61,61	92,99
Metsä Board Oyj A	2017	6,26	58,33	56,75	28,84	89,28
Metsä Board Oyj A	2018	8,15	62,16	63,97	33,10	89,28
Metsä Board Oyj A	2019	6,64	63,61	62,58	38,85	89,28
Metsä Board Oyj A	2020	6,72	64,93	64,00	41,41	89,28
Metsä Board Oyj A	2021	9,43	63,71	60,31	41,41	89,28
Metsä Board Oyj A	2022	9,69	66,55	68,86	41,41	89,28
Mips AB	2017	0,00				
Mips AB	2018	8,01				
Mips AB	2019	15,44	31,69	14,38	11,34	69,21
Mips AB	2020	31,66	35,91	14,38	24,03	69,21
Mips AB	2021	82,59	40,84	27,12	26,09	69,21
Mips AB	2022	53,99				
Modern Times Group MTG AB ser. A	2017	10,95	47,04	24,22	36,31	80,46
Modern Times Group MTG AB ser. A	2018	11,52	47,04	24,22	36,31	80,46
Modern Times Group MTG AB ser. A	2019	9,61	45,65	24,22	32,13	80,46
Modern Times Group MTG AB ser. A	2020	9,37	45,55	23,92	32,13	80,46
Modern Times Group MTG AB ser. A	2021	11,27	45,82	24,74	32,13	80,46
Modern Times Group MTG AB ser. A	2022	9,51	44,80	21,29	32,53	80,46
Munters Group AB	2017	0,00				
Munters Group AB	2018	4,24				
Munters Group AB	2019	4,12	33,22	5,80	19,98	73,72
Munters Group AB	2020	5,43	41,79	26,52	19,98	78,72
Munters Group AB	2021	7,37	47,60	36,67	21,01	84,98
Munters Group AB	2022	6,92	50,59	45,82	18,44	87,36
Mycronic AB	2017	9,40				
Mycronic AB	2018	9,93	37,76	26,76	14,57	71,82
Mycronic AB	2019	12,90	42,40	34,40	14,57	78,09
Mycronic AB	2020	17,36	45,35	34,73	23,10	78,09
Mycronic AB	2021	22,77	49,44	38,12	32,01	78,09
Mycronic AB	2022	15,81	48,61	39,53	28,08	78,09
NCAB Group AB	2017	0,00				
NCAB Group AB	2018	0,00	38,79	15,52	20,22	80,46
NCAB Group AB	2019	1,13	39,64	15,52	22,79	80,46
NCAB Group AB	2020	1,85	39,64	15,52	22,79	80,46
NCAB Group AB	2021	5,35	43,93	28,39	22,79	80,46

NCAB Group AB	2022	5,58	46,79	36,97	22,79	80,46
NCC AB ser. A	2017	21,55	44,71	33,62	28,26	72,16
NCC AB ser. A	2018	14,82	45,47	35,88	28,26	72,16
NCC AB ser. A	2019	14,26	46,07	35,88	30,08	72,16
NCC AB ser. A	2020	14,60	46,07	35,88	30,08	72,16
NCC AB ser. A	2021	14,91	50,06	41,56	30,08	78,42
NCC AB ser. A	2022	11,63	50,63	43,28	30,08	78,42
NIBE Industrier AB ser. B	2017	2,01	54,90	60,53	50,54	53,64
NIBE Industrier AB ser. B	2018	2,24	59,69	70,13	50,54	58,40
NIBE Industrier AB ser. B	2019	3,04	62,39	70,13	52,36	64,66
NIBE Industrier AB ser. B	2020	4,92	62,06	70,13	51,36	64,66
NIBE Industrier AB ser. B	2021	9,76	62,28	70,79	51,36	64,66
NIBE Industrier AB ser. B	2022	8,80	62,85	72,52	51,36	64,66
NKT AS	2017	35,81	36,12	16,31	15,21	76,70
NKT AS	2018	22,69	44,06	33,59	21,77	76,70
NKT AS	2019	15,89	44,87	35,00	22,79	76,70
NKT AS	2020	21,72	49,52	43,73	25,63	79,08
NKT AS	2021	37,87	56,07	43,73	28,20	96,12
NKT AS	2022	45,91	57,63	48,41	28,20	96,12
NTG Nordic Transport Group AS	2017	9,70	19,38	0,00	2,57	55,45
NTG Nordic Transport Group AS	2018	11,97	20,03	0,91	3,60	55,45
NTG Nordic Transport Group AS	2019	11,89	21,67	1,24	10,58	53,07
NTG Nordic Transport Group AS	2020	17,89	29,19	5,50	18,11	63,85
NTG Nordic Transport Group AS	2021	53,27	40,26	8,88	22,43	89,28
NTG Nordic Transport Group AS	2022	41,97	40,45	8,88	22,43	89,86
Neste Corporation	2017	13,14	65,90	58,32	45,59	93,68
Neste Corporation	2018	22,36	69,52	63,49	51,30	93,68
Neste Corporation	2019	29,93	73,43	66,63	59,92	93,68
Neste Corporation	2020	41,21	77,16	66,63	71,10	93,68
Neste Corporation	2021	49,97	77,16	66,63	71,10	93,68
Neste Corporation	2022	43,62	75,11	59,86	71,74	93,68
Netcompany Group AS	2017	0,00				
Netcompany Group AS	2018	0,00	25,99	0,48	10,55	66,80
Netcompany Group AS	2019	35,23	32,74	2,42	12,03	83,59
Netcompany Group AS	2020	60,21	33,94	2,42	15,63	83,59
Netcompany Group AS	2021	92,49	42,42	27,88	15,63	83,59
Netcompany Group AS	2022	49,47	41,07	27,88	16,87	78,33
New Wave Group AB ser. B	2017	3,01				
New Wave Group AB ser. B	2018	2,71	39,16	18,18	20,74	78,42
New Wave Group AB ser. B	2019	2,86	39,16	18,18	20,74	78,42
New Wave Group AB ser. B	2020	2,00	37,07	18,18	20,74	72,16
New Wave Group AB ser. B	2021	5,69	37,67	18,18	22,55	72,16
New Wave Group AB ser. B	2022	7,65	37,67	18,18	22,55	72,16
Nokia Corporation	2017	4,85	66,06	63,73	43,11	91,24

Nokia Corporation	2018	4,76	66,53	65,15	43,11	91,24
Nokia Corporation	2019	4,44	66,53	65,15	43,11	91,24
Nokia Corporation	2020	3,46	66,64	65,48	43,11	91,24
Nokia Corporation	2021	4,49	63,82	59,56	40,54	91,24
Nokia Corporation	2022	4,76			—	—
Nokian Tyres Plc	2017	37,05	56,89	56,81	23,85	89,86
Nokian Tyres Plc	2018	33,90	57,97	54,33	29,59	89,86
Nokian Tyres Plc	2019	27,11	58,53	55,00	30,59	89,86
Nokian Tyres Plc	2020	23,54	62,25	55,00	41,78	89,86
Nokian Tyres Plc	2021	32,10	65,74	63,67	43,59	89,86
Nokian Tyres Plc	2022	13,41	67,98	69,71	43,59	90,55
Nolato AB ser. B	2017	3,76	44,58	41,11	22,61	69,93
Nolato AB ser. B	2018	5,72	48,65	53,31	22,61	69,93
Nolato AB ser. B	2019	4,64	46,87	47,96	22,61	69,93
Nolato AB ser. B	2020	6,42	52,87	56,39	24,43	77,69
Nolato AB ser. B	2021	9,13	60,94	70,70	28,05	83,96
Nolato AB ser. B	2022	5,99				
Nordnet AB	2017	0,00	35,11	4,20	20,50	80,46
Nordnet AB	2018	0,00	35,01	10,18	20,50	74,20
Nordnet AB	2019	0,00	35,01	10,18	20,50	74,20
Nordnet AB	2020	0,00	35,01	10,18	20,50	74,20
Nordnet AB	2021	15,15	33,38	10,18	20,50	69,33
Nordnet AB	2022	13,84	34,05	15,52	19,95	66,56
Novo Nordisk B AS	2017	19,07	54,55	32,89	37,58	93,05
Novo Nordisk B AS	2018	20,47	54,55	32,89	37,58	93,05
Novo Nordisk B AS	2019	22,93	55,50	35,73	37,58	93,05
Novo Nordisk B AS	2020	28,19	55,50	35,73	37,58	93,05
Novo Nordisk B AS	2021	37,68	59,16	48,29	36,00	93,05
Novo Nordisk B AS	2022	53,22	60,39	50,02	37,97	93,05
Novozymes B AS	2017	41,12	54,96	46,54	26,42	91,78
Novozymes B AS	2018	43,18	55,16	46,54	26,42	92,35
Novozymes B AS	2019	40,87	55,16	46,54	26,42	92,35
Novozymes B AS	2020	48,34	55,94	46,54	28,78	92,35
Novozymes B AS	2021	61,20	55,65	48,26	26,18	92,35
Novozymes B AS	2022	57,59	56,02	49,38	26,18	92,35
Nyfosa AB	2017	0,00				
Nyfosa AB	2018	0,00				
Nyfosa AB	2019	5,85	38,40	16,64	17,93	80,46
Nyfosa AB	2020	6,80	42,27	28,27	17,93	80,46
Nyfosa AB	2021	11,82	43,12	28,27	20,50	80,46
Nyfosa AB	2022	9,28	41,86	31,11	21,52	72,82
OX2 AB	2017	0,00				
OX2 AB	2018	0,00				
OX2 AB	2019	0,00	15,48	0,66	7,77	37,93

OX2 AB	2020	0,00	19,73	5,41	15,78	37,93
OX2 AB	2021	0,00	43,79	22,77	27,99	80,46
OX2 AB	2022	7,34	44,83	22,77	27,99	83,59
Orion Corporation A	2017	43,79	65,59	66,14	41,29	89,22
Orion Corporation A	2018	29,72	65,59	66,14	41,29	89,22
Orion Corporation A	2019	33,67	64,61	63,76	40,75	89,22
Orion Corporation A	2020	39,97	68,32	68,62	40,75	95,48
Orion Corporation A	2021	36,02	67,85	67,20	40,75	95,48
Orion Corporation A	2022	43,33	73,18	69,77	54,20	95,48
Orrön Energy AB	2017	18,52	56,87	41,83	41,23	87,42
Orrön Energy AB	2018	25,16	67,57	69,80	45,41	87,42
Orrön Energy AB	2019	28,30	70,15	74,99	47,97	87,42
Orrön Energy AB	2020	21,05	71,72	74,99	46,40	93,68
Orrön Energy AB	2021	28,55	71,53	73,27	53,84	87,42
Orrön Energy AB	2022	16,76				
Outokumpu Oyj	2017	8,11	65,17	71,28	44,29	79,89
Outokumpu Oyj	2018	5,14	65,17	71,28	44,29	79,89
Outokumpu Oyj	2019	2,93	65,83	73,24	44,29	79,89
Outokumpu Oyj	2020	2,60	68,98	73,24	47,46	86,15
Outokumpu Oyj	2021	5,09	69,87	75,54	47,85	86,15
Outokumpu Oyj	2022	4,61				
Pandora AS	2017	93,65	45,14	28,87	22,79	83,59
Pandora AS	2018	64,43	48,09	37,36	23,19	83,59
Pandora AS	2019	38,10	51,26	47,03	23,04	83,59
Pandora AS	2020	55,16	60,06	54,70	35,52	89,86
Pandora AS	2021	102,13	55,64	50,32	26,60	89,86
Pandora AS	2022	72,12	56,19	51,98	26,60	89,86
Peab AB ser. B	2017	9,06	37,36	17,52	20,22	74,20
Peab AB ser. B	2018	7,29	34,92	10,93	19,47	74,20
Peab AB ser. B	2019	7,75	34,47	13,23	15,84	74,20
Peab AB ser. B	2020	7,59	35,26	13,02	18,41	74,20
Peab AB ser. B	2021	10,38	37,92	18,63	20,80	74,20
Peab AB ser. B	2022	6,93	40,22	25,52	20,80	74,20
Qt Group Oyj	2017	6,45				
Qt Group Oyj	2018	7,02	28,79	0,00	2,57	83,59
Qt Group Oyj	2019	13,37	30,19	0,00	6,77	83,59
Qt Group Oyj	2020	32,12	34,05	0,48	17,90	83,59
Qt Group Oyj	2021	113,82	36,14	10,39	14,27	83,59
Qt Group Oyj	2022	72,90				
Ratos AB ser. A	2017	5,26	31,42	3,50	13,24	77,33
Ratos AB ser. A	2018	3,51	31,13	2,66	13,24	77,33
Ratos AB ser. A	2019	2,59	33,23	2,66	13,24	83,59
Ratos AB ser. A	2020	2,93	33,23	2,66	13,24	83,59
Ratos AB ser. A	2021	5,86	34,61	2,66	17,41	83,59

Ratos AB ser. A	2022	4,87	36,61	2,66	23,40	83,59
Ringkjøbing Landbobank AS	2017	42,87				
Ringkjøbing Landbobank AS	2018	46,56	18,14	0,00	4,78	49,52
Ringkjøbing Landbobank AS	2019	58,11	24,07	8,85	13,75	49,52
Ringkjøbing Landbobank AS	2020	63,66	24,71	9,18	15,33	49,52
Ringkjøbing Landbobank AS	2021	94,19	25,05	9,18	16,35	49,52
Ringkjøbing Landbobank AS	2022	113,31	30,28	12,32	16,35	62,04
Rockwool AS ser. A	2017	185,02	41,76	47,84	23,73	53,64
Rockwool AS ser. A	2018	251,93	37,91	41,32	23,73	48,65
Rockwool AS ser. A	2019	191,74	40,75	49,83	23,73	48,65
Rockwool AS ser. A	2020	238,57	47,32	49,83	26,87	65,17
Rockwool AS ser. A	2021	334,02	49,27	50,17	26,87	70,68
Rockwool AS ser. A	2022	237,64	48,89	56,18	19,71	70,68
Royal UNIBREW AS	2017	43,02	39,92	28,06	23,88	67,70
Royal UNIBREW AS	2018	61,73	43,28	28,06	26,45	75,20
Royal UNIBREW AS	2019	70,55	48,52	42,77	27,48	75,20
Royal UNIBREW AS	2020	81,14	51,32	42,77	27,48	83,59
Royal UNIBREW AS	2021	99,94	48,67	47,36	27,48	71,07
Royal UNIBREW AS	2022	78,74	49,57	51,65	25,91	71,07
SAAB AB ser. B	2017	38,25	41,28	22,23	21,01	80,46
SAAB AB ser. B	2018	34,47	50,66	41,08	26,42	84,35
SAAB AB ser. B	2019	28,35	49,62	37,96	26,42	84,35
SAAB AB ser. B	2020	23,26	54,70	57,69	28,23	78,09
SAAB AB ser. B	2021	23,71	55,44	59,89	28,23	78,09
SAAB AB ser. B	2022	34,23	57,09	62,46	28,23	80,46
SECTRA AB ser B	2017	3,32				
SECTRA AB ser B	2018	4,28	29,68	0,42	14,81	73,63
SECTRA AB ser B	2019	6,10	24,76	0,42	14,81	58,91
SECTRA AB ser B	2020	10,17	25,70	3,26	14,81	58,91
SECTRA AB ser B	2021	15,40	29,74	3,26	16,87	68,93
SECTRA AB ser B	2022	14,03	29,85	3,59	16,87	68,93
SKF, AB ser. A	2017	18,43	55,42	55,15	30,53	80,46
SKF, AB ser. A	2018	16,36	60,59	61,34	39,87	80,46
SKF, AB ser. A	2019	15,61	60,59	61,34	39,87	80,46
SKF, AB ser. A	2020	16,77	59,54	61,34	39,87	77,33
SKF, AB ser. A	2021	21,72	60,93	61,34	44,04	77,33
SKF, AB ser. A	2022	15,62	61,40	62,76	44,04	77,33
SSAB AB ser. A	2017	4,03	56,34	55,75	35,85	77,33
SSAB AB ser. A	2018	4,17	61,62	62,16	39,03	83,59
SSAB AB ser. A	2019	2,95	60,75	59,53	39,03	83,59
SSAB AB ser. A	2020	2,55	60,64	59,53	41,08	81,22
SSAB AB ser. A	2021	4,39	60,59	56,99	41,08	83,59
SSAB AB ser. A	2022	5,24	64,06	63,85	44,65	83,59
SWECO AB ser. A	2017	6,98	32,89	1,75	19,44	77,33

SWECO AB ser. A	2018	6,46	33,81	3,47	20,47	77,33
SWECO AB ser. A	2019	8,36	32,85	2,42	18,65	77,33
SWECO AB ser. A	2020	13,14	36,52	11,84	20,22	77,33
SWECO AB ser. A	2021	14,39	44,32	28,60	20,62	83,59
SWECO AB ser. A	2022	10,72	44,50	29,15	20,62	83,59
Sagax AB A	2017	5,14	36,20	14,80	13,18	80,46
Sagax AB A	2018	5,83	40,92	21,41	20,74	80,46
Sagax AB A	2019	9,99	40,15	22,23	17,59	80,46
Sagax AB A	2020	13,21	41,30	22,56	17,59	83,59
Sagax AB A	2021	26,03	41,78	23,98	17,59	83,59
Sagax AB A	2022	22,67	42,12	23,98	18,62	83,59
Samhällsbyggnadsbo. i Norden AB ser. B	2017	0,70	29,47	7,04	12,61	68,63
Samhällsbyggnadsbo. i Norden AB ser. B	2018	0,90	29,87	3,50	14,18	71,76
Samhällsbyggnadsbo. i Norden AB ser. B	2019	1,56	32,49	7,01	18,56	71,76
Samhällsbyggnadsbo. i Norden AB ser. B	2020	2,29	46,93	37,24	25,39	78,03
Samhällsbyggnadsbo. i Norden AB ser. B	2021	4,24	53,92	44,91	38,15	78,60
Samhällsbyggnadsbo. i Norden AB ser. B	2022	2,49	59,82	51,74	49,06	78,60
Sampo Plc A	2017	43,92	32,34	1,57	11,67	83,59
Sampo Plc A	2018	42,52	33,67	2,42	14,81	83,59
Sampo Plc A	2019	38,52	53,24	33,37	36,37	89,86
Sampo Plc A	2020	33,23	54,95	33,37	41,51	89,86
Sampo Plc A	2021	40,59	57,99	36,21	41,51	96,12
Sampo Plc A	2022	44,60	60,32	36,21	48,49	96,12
Sandvik AB	2017	14,05	56,96	53,22	37,09	80,46
Sandvik AB	2018	14,69	62,93	54,94	47,04	86,72
Sandvik AB	2019	15,04	63,40	56,36	47,04	86,72
Sandvik AB	2020	16,03	60,64	54,39	40,69	86,72
Sandvik AB	2021	21,85	60,64	54,39	40,69	86,72
Sandvik AB	2022	17,74	59,95	49,17	43,86	86,72
Sanoma Corporation	2017	8,81	34,77	19,09	11,43	73,63
Sanoma Corporation	2018	9,17	34,91	17,94	13,00	73,63
Sanoma Corporation	2019	9,03	41,17	30,99	18,20	74,20
Sanoma Corporation	2020	10,45	48,92	36,06	30,11	80,46
Sanoma Corporation	2021	14,28	50,06	36,73	32,16	81,16
Sanoma Corporation	2022	12,48	50,34	37,57	32,16	81,16
Scandinavian Tobacco Group AS	2017	15,21	33,96	9,15	17,26	75,32
Scandinavian Tobacco Group AS	2018	13,58	37,56	9,15	17,26	86,09
Scandinavian Tobacco Group AS	2019	10,70	37,56	9,15	17,26	86,09
Scandinavian Tobacco Group AS	2020	12,27	41,37	20,60	17,26	86,09
Scandinavian Tobacco Group AS	2021	16,83	41,37	20,60	17,26	86,09

Scandinavian Tobacco Group AS	2022	18,00	47,19	37,27	18,05	86,09
Schouw & Co. AS	2017	85,97				
Schouw & Co. AS	2018	75,86	25,17	2,42	14,57	58,40
Schouw & Co. AS	2019	67,14	26,95	2,42	14,57	63,73
Schouw & Co. AS	2020	73,67	31,77	12,08	19,38	63,73
Schouw & Co. AS	2021	85,49	36,61	18,60	27,39	63,73
Schouw & Co. AS	2022	70,80	36,15	18,60	28,42	61,35
Sdiptech AB Pref	2017	10,68				
Sdiptech AB Pref	2018	10,55	23,09	1,33	10,97	56,83
Sdiptech AB Pref	2019	10,60	26,52	5,59	12,55	61,29
Sdiptech AB Pref	2020	10,96	31,14	6,34	15,24	71,70
Sdiptech AB Pref	2021	12,07	34,91	10,45	22,43	71,70
Sdiptech AB Pref	2022	11,01	36,81	17,03	19,04	74,20
Securitas AB ser. B	2017	14,55	39,04	6,77	28,99	81,22
Securitas AB ser. B	2018	14,54	39,68	7,25	30,56	81,10
Securitas AB ser. B	2019	14,55	40,52	7,25	30,56	83,59
Securitas AB ser. B	2020	12,29	40,08	7,25	29,23	83,59
Securitas AB ser. B	2021	13,56	43,54	20,42	29,23	80,82
Securitas AB ser. B	2022	9,25	48,33	34,79	29,23	80,82
Sinch AB	2017	1,10	28,97	0,33	12,21	74,20
Sinch AB	2018	0,82	29,34	0,66	13,00	74,20
Sinch AB	2019	1,48	33,24	9,79	15,57	74,20
Sinch AB	2020	6,87	33,76	9,79	17,14	74,20
Sinch AB	2021	14,81	34,10	9,79	18,17	74,20
Sinch AB	2022	4,10	42,73	28,39	19,20	80,46
Skandinaviska Enskilda Banken ser. A	2017	10,57	55,05	46,06	43,83	75,20
Skandinaviska Enskilda Banken ser. A	2018	8,92	55,34	46,90	43,83	75,20
Skandinaviska Enskilda Banken ser. A	2019	8,33	56,87	48,32	47,01	75,20
Skandinaviska Enskilda Banken ser. A	2020	7,93	60,37	51,16	47,01	82,84
Skandinaviska Enskilda Banken ser. A	2021	11,24	61,76	52,58	47,01	85,61
Skandinaviska Enskilda Banken ser. A	2022	10,44	57,72	34,79	47,01	91,24
Skanska AB ser. B	2017	20,31	47,82	31,71	27,27	84,35
Skanska AB ser. B	2018	15,70	45,69	26,55	23,64	86,72
Skanska AB ser. B	2019	17,12	47,50	26,55	29,08	86,72
Skanska AB ser. B	2020	18,05	50,07	34,25	29,08	86,72
Skanska AB ser. B	2021	22,20	50,32	35,97	30,89	83,96
Skanska AB ser. B	2022	16,81	52,63	35,97	31,92	89,86
Spar Nord Bank AS	2017	10,64				
Spar Nord Bank AS	2018	8,66	43,44	25,25	21,31	83,59
Spar Nord Bank AS	2019	7,89	45,63	30,75	22,40	83,59
Spar Nord Bank AS	2020	7,18	43,68	30,75	24,97	75,20
Spar Nord Bank AS	2021	9,73	48,40	35,85	27,75	81,46
Spar Nord Bank AS	2022	11,99	45,50	28,96	25,94	81,46
Stillfront Group AB	2017	1,06				

Stillfront Group AB	2018	1,82	25,32	0,00	12,15	63,67
Stillfront Group AB	2019	2,34	30,47	4,26	12,79	74,20
Stillfront Group AB	2020	7,45	32,55	5,92	17,38	74,20
Stillfront Group AB	2021	6,86	32,09	7,10	14,81	74,20
Stillfront Group AB	2022	2,34	34,60	8,37	14,81	80,46
Stora Enso Oyj A	2017	11,90	69,14	67,65	49,82	89,86
Stora Enso Oyj A	2018	15,12	71,91	67,65	58,16	89,86
Stora Enso Oyj A	2019	12,92	73,22	74,75	54,99	89,86
Stora Enso Oyj A	2020	12,84	74,40	76,71	56,56	89,86
Stora Enso Oyj A	2021	16,63	75,54	80,13	56,56	89,86
Stora Enso Oyj A	2022	16,12				
Storskogen Group AB ser. B	2017	0,00				
Storskogen Group AB ser. B	2018	0,00				
Storskogen Group AB ser. B	2019	0,00				
Storskogen Group AB ser. B	2020	0,00	34,84	22,98	14,96	66,44
Storskogen Group AB ser. B	2021	0,00	43,06	23,47	39,21	66,44
Storskogen Group AB ser. B	2022	1,58	51,37	37,51	36,03	80,46
Svenska Cellulosa AB SCA ser. A	2017	7,52	54,29	51,50	30,05	81,22
Svenska Cellulosa AB SCA ser. A	2018	8,94	56,31	55,75	31,86	81,22
Svenska Cellulosa AB SCA ser. A	2019	8,77	56,31	55,75	31,86	81,22
Svenska Cellulosa AB SCA ser. A	2020	11,05	58,81	57,72	31,86	86,72
Svenska Cellulosa AB SCA ser. A	2021	14,62	60,88	63,94	31,86	86,72
Svenska Cellulosa AB SCA ser. A	2022	14,77	65,36	74,21	35,04	86,72
Svenska Handelsbanken ser. A	2017	12,59	51,43	28,75	38,69	86,72
Svenska Handelsbanken ser. A	2018	10,21	52,02	30,50	38,69	86,72
Svenska Handelsbanken ser. A	2019	9,04	51,22	30,50	38,69	84,35
Svenska Handelsbanken ser. A	2020	8,18	51,54	29,08	38,69	86,72
Svenska Handelsbanken ser. A	2021	9,36	52,49	31,92	38,69	86,72
Svenska Handelsbanken ser. A	2022	8,97	52,88	33,10	38,69	86,72
Swedbank AB ser A	2017	21,90	51,33	37,48	32,04	84,35
Swedbank AB ser A	2018	19,66	51,86	37,48	33,62	84,35
Swedbank AB ser A	2019	13,65	53,03	39,44	35,19	84,35
Swedbank AB ser A	2020	12,91	52,42	41,53	28,87	86,72
Swedbank AB ser A	2021	16,25	52,42	41,53	28,87	86,72
Swedbank AB ser A	2022	14,48	53,22	42,37	30,44	86,72
Swedish Orphan Biovitrum AB	2017	12,84	42,15	30,99	24,85	70,50
Swedish Orphan Biovitrum AB	2018	19,12	43,34	32,41	26,42	71,07
Swedish Orphan Biovitrum AB	2019	16,70	41,96	32,41	22,28	71,07
Swedish Orphan Biovitrum AB	2020	17,39	47,15	34,85	38,21	68,30
Swedish Orphan Biovitrum AB	2021	17,30	47,07	36,82	33,22	71,07
Swedish Orphan Biovitrum AB	2022	20,03	46,59	35,40	33,22	71,07
Sydbank AS	2017	33,10	36,64	11,27	23,31	75,20
Sydbank AS	2018	27,43	40,64	14,41	23,76	83,59
Sydbank AS	2019	17,53	40,64	14,41	23,76	83,59

Sydbank AS	2020	15,85	45,28	14,74	24,79	96,12
Sydbank AS	2021	24,89	51,56	29,69	28,72	96,12
Sydbank AS	2022	31,57	49,65	29,69	22,97	96,12
Systemair AB	2017	3,55				
Systemair AB	2018	2,55				
Systemair AB	2019	2,95	43,40	24,01	26,15	79,89
Systemair AB	2020	4,48	46,59	33,62	26,15	79,89
Systemair AB	2021	7,56	47,13	33,62	27,18	80,46
Systemair AB	2022	6,12	47,13	33,62	27,18	80,46
Tele2 AB ser. A	2017	10,04	49,07	34,16	29,32	83,59
Tele2 AB ser. A	2018	10,39	49,07	34,16	29,32	83,59
Tele2 AB ser. A	2019	12,55	49,54	35,58	29,32	83,59
Tele2 AB ser. A	2020	11,87	47,95	37,33	25,94	80,46
Tele2 AB ser. A	2021	12,15	56,48	56,84	32,04	80,46
Tele2 AB ser. A	2022	10,94	52,53	44,19	32,83	80,46
Telia Company AB	2017	3,89	46,95	28,51	25,45	86,72
Telia Company AB	2018	4,00	47,60	30,47	25,45	86,72
Telia Company AB	2019	3,91	48,31	30,47	27,57	86,72
Telia Company AB	2020	3,37	48,86	28,51	31,20	86,72
Telia Company AB	2021	3,56	51,43	37,39	30,05	86,72
Telia Company AB	2022	3,30				
Terveystalo Plc	2017					
Terveystalo Plc	2018	9,33				
Terveystalo Plc	2019	9,30	41,25	25,13	17,90	80,58
Terveystalo Plc	2020	9,79	41,44	25,13	17,90	81,16
Terveystalo Plc	2021	11,49	46,34	28,99	28,75	81,16
Terveystalo Plc	2022	9,20	49,19	37,30	28,99	81,16
Thule Group AB	2017	16,88	44,98	32,29	22,61	79,89
Thule Group AB	2018	18,98	50,14	47,78	22,61	79,89
Thule Group AB	2019	19,52	53,98	57,51	24,43	79,89
Thule Group AB	2020	23,53	53,98	57,51	24,43	79,89
Thule Group AB	2021	41,88	53,99	52,79	29,17	79,89
Thule Group AB	2022	28,07				
TietoEVRY Corporation	2017	26,68	47,35	26,79	33,98	81,16
TietoEVRY Corporation	2018	27,52	50,49	26,79	37,12	87,42
TietoEVRY Corporation	2019	25,25	48,40	26,79	33,98	84,29
TietoEVRY Corporation	2020	24,47	49,45	26,79	37,15	84,29
TietoEVRY Corporation	2021	27,11	51,06	31,65	33,98	87,42
TietoEVRY Corporation	2022	24,86	51,88	34,79	33,98	86,72
Topdanmark AS	2017	29,53	39,66	24,01	30,93	63,97
Topdanmark AS	2018	38,99	39,86	24,01	30,93	64,54
Topdanmark AS	2019	44,75	41,35	25,73	33,71	64,54
Topdanmark AS	2020	37,31	45,62	40,11	32,13	64,54
Topdanmark AS	2021	43,08	45,95	40,11	33,13	64,54

Topdanmark AS	2022	49,92				
Trelleborg AB ser. B	2017	20,28	51,83	47,96	23,79	83,59
Trelleborg AB ser. B	2018	18,08	53,31	51,40	24,82	83,59
Trelleborg AB ser. B	2019	13,78	58,06	66,05	24,43	83,59
Trelleborg AB ser. B	2020	13,95	58,01	64,33	26,00	83,59
Trelleborg AB ser. B	2021	20,60	58,59	66,05	26,00	83,59
Trelleborg AB ser. B	2022	21,28	56,96	64,33	22,82	83,59
Troax Group AB	2017	8,73				
Troax Group AB	2018	8,96	25,68	1,75	13,48	61,68
Troax Group AB	2019	9,69	31,10	16,46	15,05	61,68
Troax Group AB	2020	13,92	31,69	18,21	15,05	61,68
Troax Group AB	2021	31,43	31,69	18,21	15,05	61,68
Troax Group AB	2022	19,83	31,69	18,21	15,05	61,68
Truecaller AB ser. B	2017	0,00				
Truecaller AB ser. B	2018	0,00				
Truecaller AB ser. B	2019	0,00				
Truecaller AB ser. B	2020	0,00				
Truecaller AB ser. B	2021	0,00	31,00	0,33	18,32	74,20
Truecaller AB ser. B	2022	5,16	32,32	1,09	21,52	74,20
Tryg AS	2017	18,92	36,03	24,83	21,13	62,04
Tryg AS	2018	20,51	46,08	30,81	23,70	83,59
Tryg AS	2019	26,09	46,90	32,23	24,73	83,59
Tryg AS	2020	21,38	47,01	32,56	24,73	83,59
Tryg AS	2021	20,37	45,16	25,43	26,30	83,59
Tryg AS	2022	21,79	45,73	29,72	23,73	83,59
UPM-Kymmene Corporation	2017	23,71	73,22	71,73	58,01	89,86
UPM-Kymmene Corporation	2018	29,05	73,22	71,73	58,01	89,86
UPM-Kymmene Corporation	2019	26,26	77,71	73,69	69,53	89,86
UPM-Kymmene Corporation	2020	26,22	73,86	68,89	62,76	89,86
UPM-Kymmene Corporation	2021	31,91	75,06	68,89	66,38	89,86
UPM-Kymmene Corporation	2022	32,42	75,27	73,69	62,21	89,86
Vaisala Corporation A	2017	20,56				
Vaisala Corporation A	2018	19,89	52,73	42,56	35,07	80,46
Vaisala Corporation A	2019	22,42	56,56	42,89	46,25	80,46
Vaisala Corporation A	2020	33,80	60,73	39,50	52,72	89,86
Vaisala Corporation A	2021	39,66	59,81	40,92	48,55	89,86
Vaisala Corporation A	2022	42,28				
Valmet Corporation	2017	15,94	62,79	52,31	48,55	87,42
Valmet Corporation	2018	17,74	63,13	52,31	49,58	87,42
Valmet Corporation	2019	20,40	63,13	52,31	49,58	87,42
Valmet Corporation	2020	21,59	62,01	48,93	49,58	87,42
Valmet Corporation	2021	33,46	62,53	48,93	51,15	87,42
Valmet Corporation	2022	26,18	64,78	55,69	51,15	87,42
Vestas Wind Systems AS	2017	14,53	59,12	50,86	34,01	92,35

Vestas Wind Systems AS	2018	11,59	53,58	50,86	36,61	73,18
Vestas Wind Systems AS	2019	15,20	60,18	49,47	38,57	92,35
Vestas Wind Systems AS	2020	23,28	59,07	49,47	33,86	93,74
Vestas Wind Systems AS	2021	32,93	60,50	53,76	33,86	93,74
Vestas Wind Systems AS	2022	24,10	62,87	52,28	42,47	93,74
Viaplay Group AB ser. A	2017	0,00				
Viaplay Group AB ser. A	2018	0,00				
Viaplay Group AB ser. A	2019	0,00	48,04	26,79	36,06	81,16
Viaplay Group AB ser. A	2020	31,19	48,61	25,31	39,24	81,16
Viaplay Group AB ser. A	2021	43,70	53,89	34,40	42,87	84,29
Viaplay Group AB ser. A	2022	25,66	56,08	31,62	52,24	84,29
Vitec Software Group AB ser. B	2017	8,11				
Vitec Software Group AB ser. B	2018	8,01				
Vitec Software Group AB ser. B	2019	11,39	25,65	8,61	16,75	51,51
Vitec Software Group AB ser. B	2020	23,56	25,65	8,61	16,75	51,51
Vitec Software Group AB ser. B	2021	42,73	25,87	9,27	16,75	51,51
Vitec Software Group AB ser. B	2022	40,53	24,73	5,83	16,75	51,51
Vitrolife AB	2017	11,69	38,82	16,85	18,29	81,16
Vitrolife AB	2018	12,80	38,82	16,85	18,29	81,16
Vitrolife AB	2019	17,28	40,61	22,23	18,29	81,16
Vitrolife AB	2020	19,23	40,61	22,23	18,29	81,16
Vitrolife AB	2021	40,40	42,91	29,84	18,29	80,46
Vitrolife AB	2022	24,18	41,09	28,15	20,10	74,89
Volati AB	2017	7,10				
Volati AB	2018	4,16	34,75	29,51	15,60	59,03
Volati AB	2019	4,00	36,91	29,51	14,57	66,53
Volati AB	2020	5,03	37,86	30,32	16,63	66,53
Volati AB	2021	13,65	38,81	33,16	16,63	66,53
Volati AB	2022	12,21	39,87	33,83	16,63	69,02
Volvo Car AB ser. B	2017	0,00	50,07	50,92	27,48	71,70
Volvo Car AB ser. B	2018	0,00	54,41	54,85	39,00	69,33
Volvo Car AB ser. B	2019	0,00	54,90	50,92	33,22	80,46
Volvo Car AB ser. B	2020	0,00	54,73	51,59	32,04	80,46
Volvo Car AB ser. B	2021	0,00	54,73	51,59	32,04	80,46
Volvo Car AB ser. B	2022	5,97	53,29	52,43	32,04	75,32
Volvo, AB ser. A	2017	14,70				
Volvo, AB ser. A	2018	14,34	49,25	49,98	35,04	62,67
Volvo, AB ser. A	2019	13,46	47,24	43,94	35,04	62,67
Volvo, AB ser. A	2020	15,02	46,34	42,83	33,46	62,67
Volvo, AB ser. A	2021	20,31	52,27	52,28	41,81	62,67
Volvo, AB ser. A	2022	16,68	52,57	54,00	43,38	60,30
Wallenstam AB ser. B	2017	4,03	45,86	40,41	19,71	77,33
Wallenstam AB ser. B	2018	3,95	44,15	33,71	21,28	77,33
Wallenstam AB ser. B	2019	4,75	44,62	35,13	21,28	77,33

Wallenstam AB ser. B	2020	5,61	45,67	36,30	23,25	77,33
Wallenstam AB ser. B	2021	6,88	48,20	43,91	23,25	77,33
Wallenstam AB ser. B	2022	4,93	47,63	42,19	23,25	77,33
Wihlborgs Fastigheter AB	2017	4,81	39,79	30,56	27,21	61,53
Wihlborgs Fastigheter AB	2018	4,96	39,79	30,56	27,21	61,53
Wihlborgs Fastigheter AB	2019	6,71	42,80	39,60	27,21	61,53
Wihlborgs Fastigheter AB	2020	7,74	45,73	44,00	31,59	61,53
Wihlborgs Fastigheter AB	2021	9,25	47,15	45,76	31,59	64,03
Wihlborgs Fastigheter AB	2022	7,77	48,71	50,05	31,98	64,03
Wärtsilä Corporation	2017	17,86	68,02	56,33	57,10	90,55
Wärtsilä Corporation	2018	17,08	72,30	64,51	61,76	90,55
Wärtsilä Corporation	2019	12,02	72,45	65,36	61,37	90,55
Wärtsilä Corporation	2020	7,67	72,45	65,36	61,37	90,55
Wärtsilä Corporation	2021	11,04	70,12	68,20	52,24	89,86
Wärtsilä Corporation	2022	8,22	68,52	63,39	52,24	89,86
Zealand Pharma AS	2017	15,38	30,65	0,42	19,20	72,19
Zealand Pharma AS	2018	12,34	35,30	0,42	19,20	86,09
Zealand Pharma AS	2019	20,38	35,30	0,42	19,20	86,09
Zealand Pharma AS	2020	31,49	34,78	0,42	17,62	86,09
Zealand Pharma AS	2021	24,90	34,78	0,42	17,62	86,09
Zealand Pharma AS	2022	18,37	34,31	0,76	18,41	83,59
Ørsted AS	2017	41,33	61,64	60,31	37,09	87,42
Ørsted AS	2018	53,99	62,93	60,65	37,48	90,55
Ørsted AS	2019	76,56	61,05	55,00	37,48	90,55
Ørsted AS	2020	116,01	62,75	60,10	37,48	90,55
Ørsted AS	2021	126,21	62,70	58,38	39,06	90,55
Ørsted AS	2022	98,35	63,27	60,10	39,06	90,55