T.C.
DOKUZ EYLÜL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION (ENGLISH)
ACCOUNTING AND FINANCE (ENGLISH) PROGRAMME
MASTER'S THESIS

THE IMPACT OF INCLUSION IN BIST SUSTAINABILITY INDEX ON STOCK RETURNS

Ayşe Nimet TAYFUR

Supervisor
Prof.Dr.Pınar EVRİM MANDACI

2025

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Müdür

DECLARATION

I hereby declare that this master's thesis titled "The Impact of Inclusion in BIST Sustainability Index on Stock Returns" has been written by myself by the academic rules and ethical conduct. I also declare that all materials in this thesis benefited from the mentioned resources in the reference list. I verify all these with my honour.

22.10.2025

Ayşe Nimet TAYFUR

ABSTRACT
Master's Thesis
The Impact of Inclusion in BIST Sustainability Index on Stock Returns
Ayşe Nimet TAYFUR

Dokuz Eylül University
Graduate School of SocialSciences
Department of Business Administration (English)
English Accounting Finance Master'sProgram

This thesis investigates the short-term stock price reactions of firms included in the BIST Sustainability Index (XUSRD) to assess whether the index membership triggers statistically significant abnormal returns. Sustainability has become a central theme in financial decision-making, particularly in emerging markets like Türkiye, where capital markets increasingly reward ESG-compliant behavior. By applying an event study methodology, the research evaluates the market's reaction within a 21-day event window (t-10 to t+10) surrounding the inclusion dates of companies between 2014 and 2024. The study uses the market-adjusted return model to calculate abnormal returns and employs t-tests to determine their statistical significance. The findings offer empirical insights into the semi-strong form of the Efficient Market Hypothesis and the value relevance of sustainability in the Turkish equity market. While some positive abnormal returns are observed around the event date, these effects tend to be short-lived, indicating a limited yet noticeable investor response to sustainability-driven events. The results contribute to the expanding body of literature on sustainable finance, providing evidence from an emerging market context.

Keywords:BIST Sustainability Index, abnormal returns, event study, ESG, Turkish stock market, market efficiency, t-test.

ÖZET

Yüksek Lisans Tezi

BİST Sürdürülebilirlik Endeksi'ne Dahil Olmanın Pay Senedi Getirilerine Etkisi

Ayşe Nimet TAYFUR

Dokuz Eylül Üniversitesi

Sosyal Bilimler Enstitüsü

İngilizce İşletme Anabilim Dalı

İngilizce Muhasebe Finansman Tezli Yüksek LisansProgramı

Bu tez, BIST Sürdürülebilirlik Endeksi'ne (XUSRD) dahil edilen firmaların kısa vadeli hisse senedi fiyat tepkilerini inceleyerek, endeks üyeliğinin istatistiksel olarak anlamlı anormal getiriler yaratıp yaratmadığını değerlendirmektedir. Sürdürülebilirlik, özellikle Türkiye gibi gelişmekte olan piyasalarda, finansal karar alma süreçlerinde merkezi bir tema haline gelmiştir; çünkü sermaye piyasaları giderek daha fazla ESG uyumlu davranışları ödüllendirmektedir. Bu çalışma, olay çalışması (event study) metodolojisi kullanarak, 2014 ile 2024 yılları arasında endekse dahil edilen firmaların dahil edilme tarihlerini çevreleyen 21 işlem gününden (t-10 ila t+10) oluşan bir zaman diliminde piyasa tepkisini değerlendirmektedir. Anormal getirileri hesaplamak için piyasa düzeltilmiş getiri modeli kullanılmış ve bunların istatistiksel anlamlılığını belirlemek amacıyla t-testleri uygulanmıştır. Bulgular, Etkin Piyasa Hipotezi'nin yarı güçlü formuna ve sürdürülebilirliğin Türk hisse senedi piyasasındaki değer ile ilişkisine dair ampirik içgörüler sunmaktadır. Olay tarihine yakın dönemlerde bazı pozitif anormal getiriler gözlemlense de, bu etkilerin kısa ömürlü olduğu görülmekte, bu da sürdürülebilirlik odaklı gelişmelere karşı yatırımcı tepkisinin sınırlı ancak fark edilir düzeyde olduğunu göstermektedir. Elde edilen sonuçlar, gelişmekte olan piyasa bağlamında sürdürülebilir finans literatürüne katkı sağlamaktadır.

Anahtar Kelimeler:BIST Sürdürülebilirlik Endeksi, anormal getiri, olay çalışması, ESG, Türk hisse senedi piyasası, piyasa etkinliği, t-testi.

THE IMPACT OF INCLUSION IN BIST SUSTAINABILITY INDEX ON STOCK RETURNS

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ABBREVIATIONS

AAR	Average Abnormal Return
APS	Accountability Principles Standard
AR	Abnormal Return
BHAR	Buy-and-Hold Abnormal Return
BIST	Borsa İstanbul (Istanbul Stock Exchange)
CAAR	Cumulative Average Abnormal Return
CAPM	Capital Asset Pricing Model
CAR	Cumulative Abnormal Return
CBD	Convention on Biological Diversity
CMB	Capital Markets Board
CDM	Clean Development Mechanism
CERES	Coalition for Environmentally Responsible Economies
CCPI	Climate Change Performance Index
CO2	Carbon Dioxide
CSA	Corporate Sustainability Assessment
CSR	Corporate Social Responsibility
CSI	City Sustainability Index
DJSI	Dow Jones Sustainability Indices
DEA	Data Envelope Analysis
EIRIS	Ethical Investment Research Services
EMH	Efficient Market Hypothesis
EPI	Environmental Performance Index
ESG	Environmental, Social, and Governance
EU	European Union
FDI	Foreign Direct Investment
GDS	Global Destination Sustainability Index
GHG	Greenhouse Gas
GICS	Global Industry Classification Standard

GDP	Gross Domestic Product
GRESB	Global Real Estate Sustainability Benchmark
GRI	Global Reporting Initiative
ILO	International Labour Organization
IFRS	International Financial Reporting Standards
JI	Joint Implementation
LDCs	Least Developed Countries
MSCI	Morgan Stanley Capital International
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PRI	Principles for Responsible Investment
ROA	Return on Assets
ROE	Return on Equity
S&P	Standard & Poor's
SASB	Sustainability Accounting Standards Board
SBti	Science Based Targets initiative
SDGs	Sustainable Development Goals
SDI	Sustainable Development Index
SPSS	Statistical Package for the Social Sciences
SRI	Socially Responsible Investment
t-test	Student's t-test
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNFCC	UN Framework Convention on Climate Change

UNGC	United Nations Global Compact
US	United States
WACC	Weighted Average Cost of Capital
WCED	World Commission on Environment and Development
WFE	World Federation of Exchanges
WSSD	World Summit on Sustainable Development
USD	United States Dollar

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INTRODUCTION

The classic aim of profit maximization is no longer enough for businesses to survive and thrive in the modern economy. Contemporary organisations are playing a key role within a wider social context, where they are emphasising their responsibilities toward diverse stakeholder constituencies. Business is now developing as an entity aims to create value for customers, and the environment, society. This change reflects an increased focus on sustainability and corporate social responsibility as an important part of long-term business success and competitive advantage (Gündüz, 2018: 1). Business sustainability is broadly understood in terms of three core dimensions: environmental, social, and governance. There is an expectation that business creates economic value while reducing their environmental impacts, behaving responsibly towards society and employees, and demonstrating good governance. These three dimensions are considered to be the framework for long-term business success and competitiveness (La Torre et al. 2020: 6–7). Organizations and their constituents are increasingly recognizing the importance of sustainability and incorporating it into their corporate agendas as they seek to enhance long-term societal and environmental health and well-being, while pursuing economic growth.

The evolution of the sustainability idea has gone through several stages to reach its current meaning. Especially after the mid-20th century, increasing environmental pollution and the depletion of natural resources made the necessity of a new development model clear. The most widely accepted definition was later articulated in the Brundtland Report, which defined sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (World Commission on Environment and Development, 1987: 41). The United Nations (UN) Conference on the Human Environment in 1972 in Switzerland iniciated international environmental awareness. The idea became more prominent, particularly in the economic sector, after the World Commission on Environment and Development’s publication of the report “Our Common Future” in 1987 which promoted sustainability as an issue of worldwide importance (Dağıstanlı, 2023: 2). Many worldwide efforts have helped

raise awareness of sustainability since the publication of the report. Milestones include the Coalition for Environmentally Responsible Economies (CERES) Principles in 1989, the Earth Summit in 1992, and the UN Climate Change Kyoto Protocol in 1997. On the other hand, the OECD Declaration on International Investment (2000), the World Business Council for Sustainable Development (2001), the OECD Parliamentary Commission on Environment (2002), and the UN Conference on Sustainable Development (2012) were also important for policies at an international level regarding sustainability. (Tokgöz and Önce, 2009: 259).

Sustainable development in businesses is defined in terms of economic, environmental, and social dimensions. According to John Elkington that first coined in 1997 the concept of the "Triple Bottom Line", companies are required not only to focus on their financial performances, but also have to focus on social and environmental performances (Yıldırım et al., 2018: 91). Those, organisations, which manage and combine all three dimensions in an integrated and interactive manner are able to achieve sustainable goals in the long term by balancing between corporate responsibility and value added (Dağıstanlı, 2023: 2). Previously, organizations have been reporting their sustainability activities in the 1980s and had previously reported their sustainability activities in corporate social responsibility (CSR) reports and then in environmental reports, not, in sustainable reports (Yıldırım et al.,2018: 91). Borsa İstanbul (BIST) is one of the stock exchanges that also offer sustainability index potentiality to investors. The BIST has established a sustainability index to assess how companies incorporate sustainable practices in comparition to their peers. This initiative highlights the importance of sustainability in the market, regardless of whether it is mandated by regulations (Gündüz, 2018, p. 4).

Sustainability activities of firms have become a determining factor in the capital markets, as reflected in the BIST Sustainability Index that was launched in Türkiye on November 4, 2014 (Yıldırım et al., 2018: 91). The purpose of this index is to raise awareness on corporate sustainability and to accelerate its adoption within public companies. It also allows investors to invest in companies that support sustainability and CSR principles. With the introduction of this platform, BIST extends its backing to sustainable investment decisions and encourages firms that show good corporate sustainability performance (Gündüz, 2018: 4).

The main aim of this thesis is to investigate whether the additions of companies into the BIST Sustainability Index cause short-term statistical abnormal stock returns. More precisely, the study focuses on any abnormal return within a ten-day window before and after the inclusion announcement and hence examines the informational efficiency of the Turkish stock market. Using event study methodology and using t-tests to assess the statistical significance of abnormal returns, the study seeks to present empirical findings on how quickly and how effecively markets react to sustainability disclosure information. This study contributes to the literature on sustainable finance and market efficiency by bringing into focus the financial consequences of the inclusion of sustainability indices in an emerging market setting.

The research evaluates market reactions to sustainability disclosure through the Efficient Market Hypothesis (EMH) framework, which Eugene Fama first presented in 1970 (Fama, 1970: 383). EMH posits that asset prices reflect all available information. The theory exists in three distinct forms according to Fama, who established that stock prices reflect all past market data in the weak form (Fama, 1970: 388) and all publicly available information, including corporate disclosures in the semi-strong form (Fama, 1970: 389) and all private insider information in the strong form (Fama, 1970: 409). This research specifically evaluates the semi-strong form of market efficiency by investigating the speed and magnitude of stock price reactions to the public announcement of inclusion in a sustainability index. The research employs event study analysis to evaluate how the Turkish stock market processes non-financial information through statistical tests of abnormal returns during the event period.

CHAPTER ONE
CONCEPTS IN SUSTAINABILITY AND CORPORATE PERFORMANCE

1.1. History of the Concept of Sustainability

As we know it, sustainability has been an extensively used term in environmental economics. Despite making an effort to define sustainability in an urban context, Kuhlman and Farrington's (2010) definition is somewhat vague and lacks conceptual clarity. Urban sustainability is, by nature, a multi-dimensional and site-specific phenomenon, and is highly influenced by economic trends, social processes, and environmental considerations. Although the literature provides a variety of definitions for sustainability, these definitions share common values and long-term aspirations overall (Mori and Christodoulou, 2012, p. 95). Since the 1960s, sustainability has emerged as a well-recognized global concept that is often contested and debated in academic and policy circles. The word "sustainability" comes from the Latin term "subtenir," which means to maintain or support from underneath (Muscoe, 1995: 30). Although sustainability has been defined in different ways, sustainability in its most basic form can be described as the capacity to support long-term availability of resources such as natural resources (Gladwin et al. 1995: 875).

With the passage of time, humanity has become increasingly in touch with nature. People make decisions that threaten the environment despite the insatiable and infinite desires or wants of its population, simply because the environment has its limitations. Due to a rapidly growing population, industrialization, insatiable demands, and the non-availability of every resource across the globe, the concepts of sustainability and sustainable development have evolved. The Brundtland Report, Our Common Future, was published in 1987 by the World Commission on Environment and Development (WCED). It is considered a key document in the development of sustainable development. The report launched what proved to be the most oft-cited definition of sustainability: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition has been widely accepted for the analysis and evaluation of sustainability (Mori and Christodoulou, 2012: 95).But considering the notion, one

realizes that there is no agreement upon how environmentally sustainable development could really be materialized. Given its broad nature, sustainable development has been open to varying interpretations with respect to its definition, with proponents disagreeing as to what to conserve, enhance, and how to balance environmental and economic goals along which time-frames (Mori and Christodoulou, 2012: 96).

As its popularity has grown in recent years, sustainable is being used in many areas like sustainable cities, production, industries, and businesses. In addition, sustainability or sustainable development cannot be seen only in the light of the environment, but must be seen in that of the social and economic aspects as well, since all dimensions can relate to each other and must be understood as a system. The reason of this is that, when they work together as a whole they become much more important; they are not much powerful when they work together (Turhan, 2023: 4). "Sustaining development" refers to the generation—and use—of social, economic, and environmental transformations that lead toward such a desired world. Sustainable development is not something fixed, but is a driving process. It is a reorientation in both production and development, both in the nature of products and in the types of investments, means, and priorities (Gladwin et al., 1995: 876).

Sustainable development is a polysemic term that can be broken down into social, economic, and environmental dimensions. The social part is about applying the basic needs of every human being, especially in underdeveloped countries, where it is difficult to get basic needs like food, shelter, clothing, and labour jobs. This component seeks to optimize social welfare by providing equitable access to basic needs (Özmehmet, 2008: 1855). On the one hand, the economic agenda aims to improve productive capacity and encourage growth with equality and equal opportunities, which in turn paves the way for sustainable economic stability in the long term. The environmental level emphasizes the protection of the environment, since with the help of the environment man avoids the damage to his own species (consuming air, water and other natural resources) on which his life depends so deeply; ie, the existence of human beings (UN, 1987, p: 50).

The Stockholm Conference on the Human Environment, held on June 5, 1972, in Sweden's capital, was a pivotal event that brought together representatives

from 113 nations. This conference is recognized as the first global initiative aimed at tackling ecological issues. The UN commemorated this occasion by declaring June 5 as World Environment Day (Traş, 2012: 62). The primary goal of the conference was to enhance awareness regarding the impact of human activities on the environment and to lay down a framework for improving environmental conditions. The discussions underscored that the processes of industrialization, technological progress, and urban expansion in developed countries were major contributors to environmental problems (Selin and Linner, 2005: 25). In contrast, underdevelopment was recognized as a critical issue impacting least developed countries (LDCs) and developing nations. Delegates from developed nations acknowledged the existence of universal environmental challenges and stressed the importance of addressing transboundary environmental issues (Selin and Linner, 2005: 25).

The word we brought into official use in this publication was sustainability. The World Conservation Strategy Report, issued in 1980, was developed in cooperation with the United Nations Environment Programme, the World Wildlife Fund and the International Union for Conservation of Nature. This report is the first report that actually referred to the term sustainability officially for the first time (Bozlağan, 2005: 1018).

The Brundtland Report — whose official title was Our Common Future — was the colloquial name for the report, which happened to be issued by a special General Assembly on Environmental Protection and Development in 1987 and named after its chair, Gro Harlem Brundtland, the Prime Minister of Norway. It followed a three-year, globe-trotting push by the UN World Commission on Environment and Development (WCED), established in 1984 and comprising delegates from 24 countries. This was reported to the UN General Assembly in 1987 (Bozlagan, 2005: 1019). Hence, the Brundtland Report also includes the "needs of the future" in the definition of sustainable development. Two elements are stressed by the definition (UN, 1987: 15). The first is that essential needs are satisfied, particularly for the downtrodden. The latter emphasises the necessity to achieve a fair trade-off between present and future generations in the light of the environment's regenerative capacity (UN, 1987: 15).

At the beginning of June 1992 in Rio De Janeiro, a historic international symposium was held and sponsored by the UN that highlighted the intensification of the conflict between environmental destruction and traditional forms of development. It was called the Earth Summit, and it challenged the then-prevailing economic concepts and highlighted that dependency on finite resources was not a long-term economic option. It did not privilege short-term economic gains, but rather favored a long-term, holistic approach that gave equal weight to ecological integrity, social inclusion, and economic sustainability, thus sowing the seeds of what we today call sustainable development. (Erdem et al., 2004: 2). In addition to its consideration of environmental topics, the conference dealt with a number of interrelated economic and social concerns. The talks focused on poverty cuts, improving health systems, ensuring higher levels of living standards, global economic disorder, and equity growth. A defining factor was the recognition that sustainable development is both essential and achievable for all human societies. The conference emphasized that environmental stewardship, economic advancement, and social integration are all intimately related to one another and complement one another (Turhan, 2023: 9). It was believed that this all-encompassing perspective was essential to protect the future of the planet. So the summit had five documents called upon to be ratified and implemented by:

- The Rio Declaration on Environment and Development
- Agenda 21: A Program Of Action
- UN Framework Convention on Climate Change (UNFCCC)
- Convention on Biological Diversity (CBD)
- The Declaration of Forest Principles

Five years after the first-ever 1992 Earth Summit, a Rio +5 Conference took place in New York in June 1997 (UN, 1997) to critically review the Rio commitments and to determine the direction of sustainable development progress since then. Instead of just looking back at what has been achieved, the summit intended to provide a deeper insight into why certain targets were not achieved and discern any institutional or political obstacles towards implementation. There was also a desire to present ‘good’ practices that proved that sustainability is attainable in practice in order to strengthen it as a notion that is both possible and needed

(Turhan, 2023: 14). It also underscored a number of cross-cutting issues that continued to be mainstay of the discourse on sustainability, such as the use of energy, sustainable patterns for production and consumption, resource mobilization for development, and equitable transfer of clean technologies. Thereby, it encouraged intensified involvement from national governments, international organizations, and civil society members, underlining the necessity and the question of how to pursue the inclusive and ambitious means and goals for achieving long-term sustainability targets (Kılıç, 2023: 7-8).

In December 1997, the world came together in Kyoto, Japan, to negotiate a groundbreaking Protocol that would set a precedent for the market-based mechanisms to reduce global warming pollution under the UN Framework Convention on Climate Change (UNFCCC). This binding agreement sought to solidify global commitment to tackling climate change by ensuring a reduction in greenhouse gas emissions, which fuels global warming and the rise of the greenhouse effect (Turhan, 2023: 15). Under the Kyoto Protocol, three major flexible mechanisms – Joint Implementation (JI), the Clean Development Mechanism (CDM), and Emissions trading – were developed as strategic instruments to help industrialized countries achieve their emission reduction targets. Chapter 19 and Article 20 of the Kyoto Protocol defined a set of options known as "flexibility mechanisms." They were intended to create cost-effective compliance opportunities by encouraging international collaboration, technology transfer, and investment in low-carbon developments (Kılıç, 2023: 8).

The UN held a high-level summit in New York in September 2000 with the attendance of world leaders, a summit in which a common vision of global development was to be outlined. The result of this convention was the Adoption of the Millennium Declaration, a list of principles and responsibilities of nations to ensure human development, an interim to assist humankind in inching closer to these goals by setting 2015 as the target date for each, among the list of long-term progress being made. The declaration outlined an extensive development agenda that identified eight priority areas, ranging from eradicating extreme poverty and hunger to improving global health and expanding access to education (UN, 2000: 2–9). It was also characterized by gender equality, a reduction in child and maternal death,

and the coverage of HIV/AIDS, malaria, environmental sustainability through social and developmental measures, and the creation of partnerships for development with solidarity and mutual responsibility (UN, 2000: 2-9).

The 2002 World Summit on Sustainable Development (WSSD) was introduced by the South African President. This conference was held in Johannesburg, South Africa and was established as 'Rio+10', the ten-year follow-up to the 1992 United Nations Conference onEnvironment and Development (UNCED) held in Rio de Janeiro. The core purpose behind the summit was to review the global efforts made towards attaining sustainable goals and recommit to international development by attaining Sustainable Development Goals. Discussions were held on the issues of clean water, renewable energy, health, nutrition and food practices, and biodiversity occurring in various parts of the world. The summit highlighted the need to include a broad range of stakeholders, from civil society, labor, and youth to others. The meeting concluded with the endorsement of two principal documents, namely a Political Declaration calling for "concerted, continuous and vigorous action without delay" on the global sustainability and a Plan of Implementation that provided policy prescriptions for governments and organizations (UN, 2002: 7).

1.2. Sustainability and Corporate Performance

Sustainability needs to be defined first for a correct understanding of corporate sustainability. We have been hearing a lot about the concept of “sustainable” recently, and occasionally, we see that “sustainable” is an empty concept in practice. This adjective comes to us from ancient times with a sense of “the power of continuing its being without variation or without being impaired. (Şeker and Şengür, 2022: 361). In 1987, the term "sustainability" became more commonly associated with the environment following the publication the Report on Our Common Future by the World Environment and Development Commission (Kardeş Selimoğlu and Yazıcı, 2021: 117).

The fundamental concept of sustainable development is embedded in the notion of sustainability. Because of the many environmental, economic and social problems brought about by the climate crisis that became more and more visible due

to the COVID-19 disaster, which became an unsustainable reality, sustainability element in every walk of life has become one of the most important points that everyone should learn and adopt at both individual level and institutional level (Pinney et al, 2019: 3). Since the beginning, human beings have seen nature as its main production force, and have always been quick to use it up while forgetting to let it recover. This has also generated a system that is hardly possible to offset the waste that is dumped into the environment at each production stage. Accordingly, sustainability began to be framed more as an economic concept, particularly after the notions of demand, production, and consumption were incorporated into the field of economic activity (Akyıldırım et al., 2022: 599). Consequently, it is now synonymous with sustainable development. As one can realize, the essence of this stage is the negative consequences of economic activities as such. Consequently, the performance of the companies that are the key agents in the economy should be realized in a sustainable manner without inflicting negative effects. Thus, the word 'development' came to be used as 'sustainable development', which encompasses more of a physical, quantitative, and qualitative nature. To put it in a few words, sustainable development means that all of the constituent stages from production to consumption will be in accordance with the environment (Köse, 2021: 466).

When reasonable demands of present needs are not satisfied by sustainable development activities, they do not encroach on the ability of future generations to meet their own needs. Corporate sustainability, however, focuses on the country-based and operation-based risks of a company and decisions between social, environmental, economic, and corporate governance in order to encourage the creation of value in the future (Kardeş Selimoğlu and Yazıcı, 2021: 118). These justifications should make it clear that the goal of sustainability cannot help but be to create wealth for all of its stakeholders and society over time. For an enterprise to successfully address the sustainability challenges of the environment, economy, and society, corporate governance practices should also engage all relevant parties in the enterprise. That is, profitability number and similar numbers in terms of return, investment, growth and etc., they are all important as business influence indicators, and consensus from all stakeholders is to interpret together that this number in itself alone is not enough to be sustainable in the long run (Kardeş Selimoğlu and Yazıcı,

2021: 119). Especially post the world crisis and COVID-19 pandemic, companies understand that they've got to convince all sides that their past success can no longer stick. This responsibility prompts all profit-oriented and not-for-profit organizations to structure architecture, handling the processes in an integrated manner, sacrificing the sustainability metrics. (Akyıldırım et al., 2022: 601). As corporate governance is nurtured at all levels, it is expected to have a positive influence on sustainability. So, sustainability requires as much business innovation. Sustainability also reflects a commitment to rigorous, business case–based analyses of systematic CSR programs implemented at both the enterprise and supra-enterprise levels. These initiatives aim to create shared value for all stakeholders, contribute to societal well-being, and support the conservation of nature and the environment (Özman, 2022: 3).

There are three basic dimensions of sustainability: economic, environmental, and social sustainability. The financial aspect occurs when the company is in a good financial position and makes money. The social factor relates to the improvement of the companies' employees' work conditions, such as health, safety, wages, and working hours, as well as the quality of life for the general public, society, and future generations. "Environmental dimension" describes a company's initiative to protect natural resources, reduce environmental damage, or do business without the initiation of environmentally unsafe conditions (Pinney et al., 2019: 10). Ever since business consultant John Elkington coined the term triple line reporting back in 1994, the views of traditional accounting have been stretched, to accommodate social and environmental returns alongside profit. Besides, the neglect of one of the economic, environmental, or social dimensions would jeopardize all businesses and the future itself (Aras and Sarıoğlu, 2015: 24).

It is essentially a complete overhaul of many parts of the business itself in order to think in sustainable ways. For it is companies that will have to offer the elements of sustainable development in the most efficient way to maximize their long-term value. One of the features of sustainability reports that differs them from financial reports is that they serve all stakeholders, not only the company's investor base (Buallay and Al-Ajmi, 2019: 205). "Sustainability Reporting Guide" was first published in 1997 by the non-governmental organisation the Global Reporting Initiative (GRI). The GRI Standards, the latest version of the GRI sustainability

reporting reference application, was published in 2018 and replaced the previous GRI G1, G2, G3, and G4 versions of the guideline. GRI standards are used by businesses around the world to report on their sustainability. Three sets of GRI standards exist: economic, social, and environmental. Moreover, GRI's Guidelines are referenced by the majority of stock-exchange-listed companies (Pinney et al. 2019: 89).

The world's first sector-specific standards for sustainability accounting were set in 2011 and published in late 2018 by the independent non-profit organization, the Sustainability Accounting Standards Board (SASB). Published standards were prepared for 77 branches in six years (Kardeş Selimoğlu and Yazıcı, 2021: 121). The SASB standards are intended to delineate the core sustainability topics that are material to a company's ability to operate and to create value within its industry, regardless of where the company is based. Sustainable development is working in a way that enables the company to continue to create value over time. Sustainable accounting is the ability of companies to manage their environmental and social impacts, which stem from the production of goods and services, including the environmental and social capital required throughout the value chains, in a manner that provides for ongoing long-term value. Further, the ESG component of Sustainability is taken as sustainability by SASB (SASB, Oil Gas Exploration & Production Standard,2018: 4).

1.3. Corporate Social Responsibility

CSR statements have grown increasingly significant in the modern business environment in recent years (Mohan Bursalı, 2018: 513). CSR is the total of a company's economic, legal, ethical, and volunteer obligations to the entire society during a specific time period (Carroll, 1979: 499). By behaving logically, economic responsibility seeks to control a company's operations in a way that will boost production and efficiency. Legal responsibility entails using laws to safeguard and balance the interests of businesses and society. Ethical responsibility comprises conducting business affairs honestly and ethically, adjusting to societal standards, and possessing and internalizing the moral principles necessary to be a decent

citizen. On the other side, voluntary responsibility involves meeting expectations and improving the quality of life while also directly or indirectly helping society (Mohan Bursalı, 2018:514).

Being socially accountable to stakeholders is among the best strategies for businesses to accomplish their economic success (Özman, 2022: 3). As a result of globalization, socially conscious employees, stakeholders, and legislative changes have evolved, and CSR has grown in importance. Companies place a high value on CSR in order to gain acceptance in the market they operate in, connect with their present and future workforces, and project a favorable image to the public, financial institutions, and government agencies (Özman, 2022: 3). Three major categories of distinguishing characteristics of CSR may be investigated. The first focuses on the internal operations of the corporation, where concerns like organizational learning, workplace health and safety, corporate ethics, and keeping up with change become more crucial. The second is in terms of its exterior aspect, and on the basis of partners, local governments, and non-governmental organizations, the local corporate citizenship phenomena come to the fore. Thirdly, because of its worldwide scope, concerns about human rights, the environment, workplace health and safety in supplier enterprises, and global citizenship sensibilities are brought to the forefront (Çağlar, 2013: 125).

CSR benefits businesses in a variety of ways. These include things like brand value, reputation, corporate image, attracting and keeping qualified employees, rising stock prices, risk management, locating investors and funding sources, corporate learning, customer loyalty, productivity, competitive advantage, rise in profitability, and social standing (Mohan Bursalı, 2018: 516). The importance of financial reporting ethics is increasing globally as awareness of CSR grows. In addition, social responsibility is one of the foundational ideas in accounting. Therefore, there is a logical link between accounting and CSR. Because measuring, disclosing, and protecting information, including disclosures on CSR, is a general responsibility of the accounting profession (Mohan Bursalı,2018: 517).

1.4. Corporate Governance

The only real way for companies to prosper and remain alive is institutionalization. When the large enterprises are finished with institutionalisation, small businesses must learn how to incorporate institutionalisation into their business life. Many academics argue that institutionalization is the critical step for a company to survive. Today, there are so many legally regulated ways to begin a business. These are the initial steps of institutionalization, in fact. In addition to this physical paperized step of institutionalizing the company, the first step is to trust a professional manager (Kardeş Selimoğlu and Yazıcı, 2021: 119-120).

The conceptual definition of corporate governance, for the first time, appeared in the report of the Committee on the Financial Aspects of Corporate Governance that was constituted in 1992, and later led by Adrian Cadbury. Corporate governance is often understood as a system of business management or control. This study views it as the mechanism through which managers and boards oversee business operations. Within this structure, partners are responsible for selecting managers and monitoring organizational performance through the company's governance framework (Cadbury, 1992: 15). Corporate governance is a rule of law relationship among top management, those who control them, and the many stakeholders in the corporation. Corporate governance also dictates a framework for establishing corporate objectives, reaching them, and monitoring performance. Effective corporate governance systems at the individual firm level and the economy as a whole contribute to developing the confidence required for a market economy to survive properly. Moreover, corporate governance leads to a lower cost of capital and helps firms to better utilize resources to expand (OECD, 2004: 11).

Leaders (or corporate governance) specify the criteria that business leaders should consider when making decisions about business activities - what activities they should make these decisions about, how they should go about making them, and when and to whom they should be made. The following describes the four commonly accepted basic principles of corporate governance (Dinç and Abdioğlu, 2009: 160).

• Transparency: Transparency is complete and accurate disclosure of all financial and non-financial information of a company on a real-time basis. Moreover, transparency is one of the corporate governance principles, and it is to be adopted in order to increase shareholder confidence in the company and the quality of financial reporting (Dinç and Abdioğlu, 2009: 161).

• Accordingly, they note that the accountability principle stipulates that those who are vested with the authority to make and implement decisions have an obligation to justify their decisions and become liable for their consequences (Dinç and Abdioğlu, 2009: 161).

• The principle of responsibility states that managers should act in the way society, the law, and the company require them to. From this perspective, the principle of responsibility is a control mechanism that serves to maintain honesty (Dinç and Abdioğlu, 2009: 161).

•Fairness is the premise that management, having regard for all of the company's stakeholders, including its partners, should ensure all decisions are made with honesty and integrity in mind (Dinç and Abdioğlu, 2009: 162).

In the sense of the corporate governance process, the company should operate to meet all the needs, interests, and social expectations of its stakeholders. One of the important reasons for the current global financial crisis and corporate scandals is the perception that corporate governance policies both in the public and private sectors are insufficient. The primary source of outside-verified information as to the success of fund managers is financial records. Then you can see clearly that there is an interdependence between corporate governance and accounting. Many of the basic concepts of financial accounting, such as the historical cost application, the reliability principle, the realization principle, and the prudence principle, are in fact difficult to understand without the corporate governance perspective (Kardeş Selimoğlu and Yazıcı, 2021: 117).

1.5. ESG Dimensions

The ESG has three dimensions, including environmental, social, and governance.

1.5.1. Environmental Dimension

The environmental component takes into account how a company will affect both living and non-living natural systems, such as the air, soil, water, and the entire ecosystem. The company's emphasis on the environment is a sign that it cares about sustainability and has a beneficial impact on the stakeholders and investors who base their decisions on this information. Resource consumption, emissions, and innovation are the three key categories under which the environmental dimension is covered (Akyıldırım et al., 2022: 604).

Table 1 gives the descriptions of the environmental dimension in three sub-headings: resource usage, emissions, and innovation.

Tablo 1: Description of the environmental dimension in three sub-headings

Resource usage	Emissions	Innovation
It mainly entails practicing environmental responsibility and caution when using natural resources. Policies on efficient resource use, the availability of renewable energy sources, environmentally friendly buildings, environmentally friendly practices in product packaging, an environmental management team, and environmental training show how much importance businesses	These activities include indications like the firm's emission policies and emission reduction goals, understanding of climate change and related goals, ISO 14000 group certificates for the environmental management system, and environmental spending on these topics.	It has to do with whether there are instances in which businesses' operations, goods, and services have lessened their negative environmental effects or may even benefit the environment. Recycling-friendly items, products with lower noise levels, the use of low-emission vehicles, the creation of hybrid vehicles, and the usage of natural products are a few instances of how businesses innovate and demonstrate how much

place on resource use.		value they place on the environment.

Sources: Nasdaq (2019). ESG reporting guide 2.0.

1.5.2. Social Dimension

The social component essentially refers to how well a company upholds its obligations to society, its consumers, and its staff. The social factor is crucial for the reputation and continuation of the business, contributing significantly over time and making it simpler to attract long-term investors. Because people in the workforce, consumers, and society generally have more faith in businesses that consider social factors. Workforce, human rights, society, and product responsibility are the four primary categories under which the social component is considered (Akyıldırım et al., 2022: 605).

Table 2 depicts the description of the social dimension in four sub-headings: labor, human rights, community, and product responsibility.

Tablo 2: Description of the social dimension in four sub-headings

Labor	It focuses on the value that businesses place on their employees in the social sphere. The value that businesses place on their workforces under the social dimension is expressed through indicators like employee training, development, health and safety policies, equality among employees, support for female employees, occupational health and safety management system, salaries, employee turnover, layoffs, strikes, availability of women managers, flexible working hours, employment of disabled employees, injuries due to occupational accidents, lost time, and total training time.
Human Rights	This includes situations where companies have policies against child labor and forced labor based on the UN Universal Declaration of Human Rights and the UN Convention on the Rights of the Child, and where companies generally respect

	human rights.
Community	Protecting the public's health and conducting business ethically are essential components of being a good citizen. Examples of these circumstances include when businesses compete fairly within the bounds of business ethics, have internal controls against potential informers, take precautions against bribery and corruption, assist and lead, and participate in socially beneficial educational, sporting, health, and cultural endeavors.
Product Responsibility	This can be said to include, among other things, that companies honestly inform their customers about their products and services, and that customers consider information security and health.

Sources: European Commission, 2017 and Refinitiv, "Environmental, Social and Governance (ESG) Scores from Refinitiv," 2019.

1.5.3. Governance Dimension

The ESG corporate governance dimension refers to aspects of effective corporate governance, including those relating to the board of directors' composition, the firm's adherence to corporate governance principles in its systems and processes, management decisions to protect the rights of shareholders and other stakeholders, and management decisions to protect long-term shareholders' interests. Three primary topics are covered in the corporate governance dimension: management, shareholders, and CSR strategy.

Tablo 3: Description of the social dimension in three sub-headings: management, shareholders, and CSR strategy

Management	It is a category that discusses the importance of senior management for organizations to maintain sound corporate governance. The efficiency with which a company's board of directors operates, the composition of

	the board of directors, its size, diversity, and experience, the number of independent members, the distance between the chairman and the CEO, external consultations, the frequency of board meetings, the extent to which board decisions are published, and the board of directors that the CEO serves on the existence of a board member or the board's maximum membership limit, for instance, are indicators that reveal whether the management practices sound corporate governance or not.
Shareholders	It falls under the area of corporate governance and is generally concerned with the measures taken by businesses to safeguard their shareholders. Policies on voting rights, equal consideration of all shareholders' rights, minority rights, requiring a majority vote in the election of directors, public disclosures about the state of the company, plans to protect shareholders' rights in difficult circumstances, the shareholders' right to buy first and anti-takeover laws are a few examples of these actions.
CSR Strategy	According to Refinitiv, it can include indicators like having a CSR committee or team, explicit integration of financial and non-financial factors in management discussions and analyses in annual reports, consideration of stakeholders, publication of CSR/Sustainability reports, compliance with GRI standards, and recognition in this area.

Source: Refinitiv, "Environmental, Social and Governance (ESG) Scores from Refinitiv," 2019

ESG disclosures are sufficiently inclusive to encompass all non-financial issues that the firm may have an impact on, including CSR, sustainability, and corporate governance activities, as may be inferred from the explanations provided above on the scope of ESG.

1.6. The Relationship between ESG Criteria and Financial Performance

Academic research has focused on the connection between ESG standards and business financial success since the early 1970s. Since the 1990s, the number of studies on this topic has grown tremendously. According to reports, strong ESG performance benefits a company's ability to manage its finances, reputation, risk, operational skills, governance, transparency, capital allocation, stakeholder involvement, long-term thinking, people, growth, and customer value (Zumente and Bistrova, 2021: 127).

Empirical results from over 2000 scientific studies on the relationship between ESG and financial performance were compiled using vote tally and meta-analysis methods. The results of this comprehensive review can be summarized as follows. Companies that act and invest in ESG have steadily increased in value over time. According to the overall results of the meta-analysis, 63% of all studies concluded that companies that remain active due to these causes increase in value. Very few studies (8%) conclude that companies that continue to operate with these concerns lose value. The remaining studies yielded neutral or mixed results. Overall results from the vote tally analysis showed that 8% of studies found a positive association between ESG and financial performance. The proportion of studies that found a negative association is 7% (Friede et al. 2015: 210-215).

The relationship between ESG criteria and financial performance varies between established markets and emerging markets when different locations and nations around the world are taken into account. In mature markets, 50% of studies on portfolios of company securities indicate a positive association, and 6% of studies find a negative relationship. Studies that discover a positive link in emerging markets are found in 71% of cases, while those that find a negative relationship are found in 4% of cases (Odell and Ali, 2016: 792). Emerging economies are said to present considerable potential for long-term investors, but it can be challenging for businesses operating in these areas to include ESG considerations in their policies and decision-making procedures. These challenges are mostly brought on by poverty, urbanization, pollution, disease, and corruption (Odell and Ali, 2016: 792).

The researchers claim that businesses that successfully integrate ESG criteria into their operations will be able to develop more quickly over time, boost profitability, cut capital expenses, and manage external risks more effectively than

their rivals. Over time, this will have a favorable impact on how investors view the business (Ghoul et al., 2017: 370).

1.7. Sustainability Indices

Sustainable finance and its role. The prominence of sustainable finance has been rapidly rising, and investors have an increasing interest in sustainability. "Many stock exchanges have consequently launched sustainability indices. These indices are used as market indicators to show the performance of share prices in a particular market during a specific period, so as to enhance capital market performance, to deepen the market, and to reflect the economic trends more broadly. Sustainability rankings aim to facilitate sustainable investment, connecting investors with enterprises that put particular attention to ESG criteria (Santis et al., 2016: 736). Companies are reviewed on their ESG performance, their environmental and social impact management, their activities and investments on this front, and how strictly they comply with corporate governance rules, in deciding whether they make the indices. Such transparency allows investors and stakeholders to differentiate companies by the way they are managing sustainability. Sustainability indices, which have been formed in the last thirty years, correspond to some of the most influential tools designed by stock exchanges under the aegis of responsible investment (BIST, 2014: 36).

1.7.1 Global and Regional Sustainability Indices

Sustainable performance indicators are mainstream in government and corporate reporting by 2025 as a result of a global consensus to integrate ESG into business practice, analysis of the research says. So, regionally, we have different standards. For example, the environmental performance of 180 countries is continuously monitored with a large array of performance indicators in the Environmental Performance Index (EPI) (Yale Center for Environmental Law & Policy, 2024: 1). In addition, the Sustainable Development Report tracks the advancement of the SDGs for all 193 UN-member countries (Sachs et al., 2024: 1). As just one example, the Climate Change Performance Index (CCPI) compares the

climate action, energy use, and emissions development across 64 countries, including the EU (Germanwatch, 2025: 4). For companies, ESG reporting and performance benchmarking are increasingly the norm across sectors. E.g., on the year of publication, the 2025 Sustainably Report Card, S&P Global took it among themselves to commented that more than 7600 companies were rated so as to identify and recognize those that disclosed on the performance of their ESG companies (S&P Global, 2025: 4). And over 10,000 global companies adhere to the Science Based Targets initiative (SBTi), signing up to reduce their emissions in line with the targets of the Paris Agreement (SBTi, 2025: 4). The results of these projects show a sustained coming together of sustainability measures and strategy for both the nation and the organization.

Table 4 presents examples of sustainability indices for national stock exchanges at both global and regional levels.

Tablo 4: Global and Regional Sustainability Indices

Index Name	**Established**	**Scope**	**Description**
Dow Jones Sustainability Indices (DJSI)	1999	Global	Assesses companies on economic, environmental, and social criteria to determine the world's leading sustainable companies.
FTSE4Good Index	2001	Global / Regional	Includes companies that are considered to have strong ESG practices, and excludes companies that make tobacco, firearms and coal energy.
MSCI ESG Indices	1990s	Global / Regional	Provides tools for evaluating companies' exposure to ESG risks and opportunities that are commonly used in responsible

			investing strategies.
CDP (Carbon Disclosure Project) Scores	2000	Global	Evaluates and rates companies on self-reported data about their environmental impact, including emissions and water use.
Sustainalytics ESG Risk Ratings	1992	Global	Quantifies how much a company is exposed to and manages ESG risk, with scores available for use in creating sustainable investment strategies.
Global 100 Most Sustainable Corporations	2005	Global	A yearly list of the world's most sustainable, publicly traded companies, using numerous performance indicators.
Environmental Performance Index (EPI)	2002	Global (Country-level)	Country-by-country rankings of the healthy environment and vibrant ecosystems, based on quantitative measures.
Sustainable Development Index (SDI)	2019	Global (Country-level)	Modifies the Human Development Index to factor in ecological constraints in measuring countries' sustainable development.
Green Growth Index	2019	Global	Assesses how well countries are doing in pursuing a green growth model, inclusive

			development and efficient use of natural resources, and environmental sustainability.
Global Commons Stewardship Index	2021	Global	Assesses how globally shared environmental resources — such as climate, biodiversity and land use — are managed by countries.
GRESB (Real Estate Sustainability Benchmark)	2009	Global (Real Estate, Infra)	Benchmarks the ESG performance of real assets, such as a real estate or infrastructure portfolios.
Higg Index	2012	Global (Textile Sector)	Offers resources to quantify social and environmental sustainability throughout the apparel and footwear value chain.
Global Destination Sustainability Index (GDS)	2016	Global (Tourism Sector)	Place Rankings of urban destinations according to the environmental and social sustainability of their tourism practices.
Sustainable Trade Index	2022	Global (30 Economies)	Assesses a country's ability to trade in a manner that is environmentally friendly, socially inclusive and economically viable..

Source: Wu, J., & Wang, Y. (2014). Sustainability indicators and indices: An overview. In S. E. Jørgensen & B. Fath (Eds.), Handbook of Ecological Indicators for Assessment of Ecosystem Health (pp. 1–22). Springer. https://doi.org/10.1007/978-1-4614-6435-8_4

In response to this, global/ local sustainability indices were introduced to make companies more competitive in the global market and to assess their sustainable performance. The extent of these indices and differences in the criteria applied make comparisons to business difficult. Therefore, this article will concentrate on the Domini 400 Social Index (the earliest sustainability index), DJSI, and FTSE4GOOD Index, since these are the earliest of the global indices that are responsible for the blooming of the sustainability indices. After this, the Borsa İstanbul (BIST) Sustainability Index will be addressed.

1.7.2 Domini 400 Social Index

The Domini 400 index was founded in 1990 by the investment firm Kinder-Leydenberg-Domini, a leader in the field of socially accountable investing. To be eligible, companies must be domiciled in the United States and listed on either the NYSE or the Nasdaq. Companies engaged in the manufacture of alcohol, tobacco, military weapons, nuclear, or gambling-related activities are not eligible for inclusion in the index. Moreover, in selecting companies, quality products, and consideration for the environment, employees, minorities, women, and society at large are all taken into account (Souer, 1997: 140-141).

1.7.3 Dow Jones Sustainability Index (DSJI)

The DJSI was set up on the 8th September 1999, as a useful tool for both the investor and the financial analyst to compare companies by their level of sustainability performance (Tokgöz et al., 2009: 267). The index comprises companies that accommodate the three quantitative sustainability dimensions: economic, social, and environmental. The DJSI has helped the sustainability concept to be widely accepted because it has a positive effect quickly (Özmen, 2019: 95). There is a perception that doing so leads to financial gains for the business. This offers evidence of corporate governance substructuring by measuring corporate governance quality and translates to an understanding of a firm's "internal practices and activities" (Lo'pez et al., 2007: 289).

The process of selecting companies for the DJSI begins by identifying leading performers across 60 industries included in the S&P Broad Market Index, which lists around 10,000 firms. Of these, approximately 3,400 are invited to complete RobecoSAM's Corporate Sustainability Assessment (CSA), which helps rank companies worldwide based on their sustainability efforts. The questionnaire includes nearly 100 items addressing both general and industry-specific performance. Next, the companies are ranked by their float-adjusted market cap, and the top 2,500 continue to the next stage. These are sorted into 24 industry groups and 59 sectors according to GICS. Those completing the CSA and performing well within their sectors may ultimately be included in the DJSI (S&P Dow Jones Indices, 2011: 3). Performance figures (see tables below) will be used to evaluate and spot sector leaders.

Table 5 presents the key criteria used in the DJSI, along with their weights across economic, environmental, and social dimensions.

Tablo 5: Dow Jones Sustainability Index Performance Criteria

Dimension	**Criterion**	**Weighting (%)**
Economic	Corporate Governance	6.0
Economic	Risk and Crisis Management	6.0
Economic	Codes of Conduct/Compliance/Anti-Corruption & Bribery	6.0
Environmental	Environmental Reporting	3.0
Social	Human Capital Development	5.5
Social	Talent Attraction and Retention	5.5
Social	Labor Practice Indicators	5.0
Social	Corporate Citizenship / Philanthropy	3.0
Social	Social Reporting	3.0

Source: S&P Dow Jones Indices. (2017)

1.7.4 FTSE4GOOD Index

FTSE4Good Index The FTSE4Good Index Series, launched in 2001, is a comprehensive series of related indices designed to help market participants identify companies that demonstrate strong ESG practices. The index presents a series of

dimensions for evaluating a corporation's commitment to sustainability, which include environmental responsibility, positive impact on stakeholder relations, and the respect for, and promotion of, fundamental, universal human rights (Argüden, 2002: 57). Also, the index does not include any companies involved in tobacco, armaments, nuclear power, infant formula, or uranium. To receive inclusion in the index, companies are required to exhibit environmental leadership, to engage constructively with stakeholders, to support and protect human rights, to work toward sustainable supply chains with better labor standards, and to have adequate anti-bribery systems (Lynn, 2013: 1-13).

Eligibility Companies are considered for inclusion in the FTSE4Good Index Series only if they are first constituents of one of the broader FTSE indices, which include the FTSE Developed Index and regional FTSE All-Share Indices covering Europe, the US, or the entire world. Afterwards, companies are screened according to the criteria: Environment, the company's approach to social concerns, relations with shareholders, and compliance with international human rights standards. The entities that successfully pass this due diligence are listed in the index, which is then structured using the FTSE's standard procedures for index development (Argüden, 2002: 57).

1.7.5 Borsa Istanbul Sustainability Index

Launched in 2010 by Borsa Istanbul and the Business Council for Sustainable Development in Türkiye (SKD Türkiye), the BIST Sustainability Index Project is designed to evaluate the sustainability performance of companies through publicly disclosed information. Assessment is based on environmental impact, biodiversity, climate change, human rights, corporate governance, anti-bribery, and health and safety. In 2013, Borsa Istanbul teamed up with Ethical Investment Research Services (EIRIS), charging EIRIS with company rating. This cooperation also implied the need to be in line with the international sustainability norms. Only firms that pass the EIRIS criteria thresholds are selected into the index (Özmen et al., 2020: 158). Standing out as one of the exchanges operating in developed and emerging markets, with the BIST Sustainability Index founded on the 4th of November 2014, Borsa

İstanbul aims to give sustainable stock markets a strategic position. The index's core function is to assess, improve, and benchmark companies' sustainability efforts in Sweden and globally. The Index is a quarterly index and each quarter has four measurement periods: January–March, April–June, July–September, and October–December (Refinitiv, 2021: 10). The BIST and EIRIS performed a first assessment in 2014, using the specific selection criteria, according to which 30 companies out of the Borsa Istanbul companies were assessed and 15 were found to be eligible. In 2015, the range of evaluated companies was extended to 50, which included 29 companies in the index (Özmen et al., 2020: 159).

Price and return indices of Borsa İstanbul Sustainability Index, daily values are available from November 4, 2014. The aim of these indices is to create an environment in which the wider use of corporate responsibility practices and the promotion of corporate responsibility become widespread within the stock market. The purpose of these indices is to be a means of helping companies to best address their ESG-related risks and opportunities and communicate their strategies on sustainable development to the wider world. In 2021, the collaboration with Borsa Istanbul ceased, and Refinitiv Information Services Ltd. assumed the role of assessing sustainability. Under the new deal, Refinitiv's ESG scoring is being applied in deciding which companies will be in the index from the 2021 assessment. Evaluations are only made public information, and Borsa İstanbul has the right to cover Refinitiv data. Participation in the assessment is optional and includes those listed on the Stars Market, Main Market, and Sub-Market (Borsa İstanbul, 2021: 10). The listing of companies within the Borsa Istanbul Sustainability Index and their ESG score calculation by Refinitiv provides a benchmarking opportunity for sustainability-related investments and guidance to both domestic and international best practices. To be eligible for inclusion in the BIST Sustainability Index, companies must meet the following requirements (Borsa İstanbul, 2022: 7):

- General sustainability score minimum 50,
- At least 40 in each of the specialist support pillars.
- Scores of at least 26 in a minimum of eight categories.

The BIST Sustainability 25 Index, launched on November 21, 2022, is designed to showcase sizeable, liquid companies displaying high standards of sustainability. Stricter criteria are required for companies to be a part of this index:

• A minimum total sustainability score of 70, with the worst-case sustainability scoring approach applied,

• At least a 60 score in each major sub-score,

• Minimum eight factors with scores higher than 50.

Stocks with the highest trading volume and market capitalization among listed companies are the 25 components of the BIST Sustainability 25 Index. The increasing focus on sustainability in the stock exchange resulted in the launch of several socially and environmentally focused initiatives. The World Federation of Exchanges (WFE) has reported that sustainability strategies pursued by member exchanges typically fall into one of three categories:

1. Increasing the ESG consciousness of publicly listed companies,
2. Developing sustainability-linked financial products and data services, and producing sustainability-focused indices.
3. The creation of specific markets for products of investment in accordance with ESG criteria.

To bolster the first approach, Borsa Istanbul published a sustainability guide in 2014 to inform and advise corporations. This compilation, was updated in 2020 with the overarching title "Staying Relevant in the Future" to emphasize the changing perception of corporate sustainability (Borsa İstanbul, 2020).

In 2014, Borsa Istanbul initiated the computation of the BIST Sustainability Index in accordance with the second strategic pillar. The index methodology was updated in 2021 to address emerging trends in sustainable finance and to promote corporate inclusivity. Under an official agreement, sustainability evaluations are now performed in partnership with Refinitiv, a global data provider. The same year saw the introduction of the Sustainability Participation Index, bringing the number of sustainability-related indicators at the exchange to two.

As for the third criterion, the Capital Markets Board (CMB) of Türkiye has issued the Green Debt Instrument and Green Lease Certificate Guide. The guide is intended to encourage the issuance of sustainable debt and lease offerings, increase

the transparency of such offerings to investors, and provide a product to enable further financing for projects focused on sustainability. Feedback on the draft guideline was solicited from a number of key stakeholders in Türkiye's capital markets, including Borsa Istanbul (Borsa İstanbul, 2021).

CHAPTER TWO

LITERATURE REVIEW

2.1. Literature Review on Sustainability Indices

The current body of literature on sustainability indices, particularly those related to Borsa Istanbul (BIST), reflects a wide range of methodological approaches. Among these, numerous studies have employed the event study method to examine how investors react to the inclusion of companies in sustainability indices. For instance, Yılmaz et al. (2020) and Hawn et al. (2017) show that inclusion in the sustainability indices, such as the BIST Sustainability Index and the Dow Jones Sustainability Index (DJSI), causes systematically more positive abnormal returns, potentially due to the investors appreciating the signaling value of these inclusions. Nevertheless, inconsistent results by Çimen (2019) and Gündüz (2018) show that there are no significant market reactions, suggesting different levels of awareness of investors and maturity of the markets to sustainability measures.

Other studies examine the financial performance of firms that are part of sustainability indices. Güçlü and Göktaş (2023) employ entropy-weighted TOPSIS and PES methods to evaluate the financial performance of firms within the BIST Participation Sustainability Index and observe the differences among companies. Likewise, Sevim, (2021) and Horasan & Aktaş, (2021) find the positive relationship between environmental investment and financial performance measures such as ROA and ROE, indicating that sustainability-oriented investments can improve profitability.

Research in this area also examines the quality and extent of sustainability reporting. Uzun Kocamış and Yıldırım (2016) and Başkaya and Taş (2021) utilize content analysis to identify differences in sustainability reporting practices and highlight the need for standardized reporting formats. There seems, according to the same argumentation, no uniformity and consistency within the work of Beyazyol & Ataman (2023), which demands more comprehensive and dichotomic reporting guidelines amongst BIST firms. Moreover, Acar et al. (2021) support their generational case with evidence that financial and non-financial firm-specific factors

substantially impact sustainability performance, emphasizing the complexity of the forces that drive successful sustainability strategies.

Efficiency and operational performance indicators are another area of focus. Kılınç and Konuşkan (2022) use Data Envelope Analysis (DEA) to reveal efficiency gaps among companies in the BIST index. Similarly, Köse et al. (2021) suggest using financial indicators for alternative sustainability index estimations. Together, these results emphasize the difficulty of consistently assessing sustainability performance across firms with varying operational configurations.

Last, but not least, investor behavior and related market dynamics in the context of sustainability indices are critically assessed. Kılıç (2023) and Aklan (2023) investigate the effect of liquidity and investors' decisions on the impact of the index inclusion, predicting that it would be limited and positive. Additionally, Dinçer et al. (2021) and Korga and Aslanoğlu (2022) support the link between sustainability performance and financial performance that provides a business case justifying the integration of sustainability into corporate strategies.

Altogether, the above literature provides a complex yet consistent picture that (the inclusion of) a sustainability index and associated practices have diverse influences, from enhancing financial performance to investor sentiment and reporting quality. Even if there's some variation in findings, especially regarding investor responses, the sum that has been added up indicates that sustainability matters more and more to the way business and finance are shaped. A summary of the previous studies discussed above is also provided in Table 6 to facilitate comparison of their methodologies, variables, and major findings.

Tablo 6: Literature Review Table

Authors	Methodology	Variables	Results
Le Maux & Le Saout (2004)	Performance analysis	Dow Jones Sustainability Index (DJSI), S&P 500 and MSCI World Index returns and risk profiles	Sustainability indices (e.g., DJSI) show lower volatility with comparable returns to traditional benchmarks like the S&P 500 and MSCI World. They are competitive options for sustainable investment strategies.
Mori & Christodoulou (2012)	Literature review and synthesis	DJSI, FTSE4Good, ASPI, and proposed City Sustainability Index (CSI)	Reviews current sustainability indices (DJSI, FTSE4Good, ASPI), identifies their limitations, and introduces the CSI framework to better assess urban sustainability.
Uzun Kocamış & Yıldırım (2016)	Content analysis	Dependent: Sustainability reporting quality (measured via content structure, format, and disclosure depth); Independent: BIST Sustainability Index	The research reveals substantial differences in the form and quality of sustainability reports of BIST Sustainability Index companies. It highlights the importance of adopting universal reporting frameworks to

		membership	improve comparability and transparency.
Gündüz (2018)	Event study	Stock prices of 15 companies first included in the BIST Sustainability Index in November 2014	There is either weak or no statistical evidence of abnormal returns, meaning that inclusion in a sustainability index does not strongly affect how investors perceive a firm.
Bağcı (2018)	Comparative analysis	Liquidity indicators including turnover rate, trading volume, bid-ask spread, and market depth of firms listed and not listed in the BIST Sustainability Index	Liquidity of firms listed in the BIST Sustainability Index was far better than that of non-listed companies.
Hawn, Chatterji & Mitchell (2017)	Event study	Stock price reactions of companies added to or removed from the Dow Jones Sustainability Index (DJSI)	The study shows that firms added to the DJSI experience positive Average Abnormal Returns (AARs), while those removed show negative market reactions. This suggests that investors reward firms for signaling corporate sustainability and penalize those that step away from such

			commitments.
Düzer (2020)	Regression analysis	Financial performance (measured via ROA and ROE); corporate governance and sustainability practices in BIST firms	Positive and significant relationship between corporate governance, sustainability practices, and firm performance for the firms listed on the BIST. They emphasize the role of an integrated governance model for delivering sustainable value creation.
Horasan & Aktaş (2021)	Regression analysis	Financial performance (measured by ROA, ROE, and net profit margin); corporate sustainability indicators of manufacturing firms	A general upshot of corporate sustainability over the financial performance among manufacturing sector firms listed on the Bourse Istanbul (BIST) Sustainability Index. Hence, sustainability translates into profitability.
Köse, Gülal & Seçme (2021)	Financial ratio analysis	Financial indicators including Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin, and Debt-to-Equity Ratio; BIST	The findings indicate that companies in the BIST Sustainability Index outperform others in financial ratios such as profitability and leverage, pointing to a positive relationship between sustainability

		Sustainability Index membership	and financial performance.
Dinçer, Dinçer & Keskin (2021)	Panel data regression analysis	Financial performance (measured by ROA, ROE, Net Profit Margin); inclusion in BIST100 and BIST Sustainability Index	The study finds a statistically significant and positive relationship between sustainability index inclusion and financial performance, suggesting that companies engaging in sustainable practices tend to achieve better financial outcomes.
Çimen (2019)	Event study	Stock returns of firms newly included in the BIST Sustainability Index between 2014 and 2018	There is no evidence of abnormal returns around the inclusion dates. This implies investors might not respond dramatically to sustainability index press releases.
Vardari, Gashi & Gashi Ahmeti (2020)	Event study	Stock returns of companies listed in the BIST Sustainability Index at the time of its initial announcement in 2014	The study's results show that the BIST Sustainability Index is positively related to the stock returns of the listed companies, particularly over a short period, which means that investors' trust is increasing.
Yılmaz, Aksoy & Tatoğlu	Event study	Stock returns of Turkish firms newly included in the BIST	Inclusion in the BIST Sustainability Index has a positive effect on stock market

(2020)		Sustainability Index between 2014 and 2019	valuation. This implies that investors value the sustainability practices in the Turkish stock market better.
Acar, Durmaz & Coşgunaras (2021)	Regression analysis	Sustainability performance (measured via ESG scores or BIST sustainability metrics); financial characteristics (firm size, profitability, leverage) and non-financial characteristics (sector, age, board structure)	Corporate sustainability scores of the firms listed in the BIST Sustainability Index are affected by financial and non-financial variables, which emphasizes the multi-dimensional character of corporate sustainability.
Başkaya & Taş (2021)	Content analysis	Non-financial reporting practices (measured by disclosure quality, transparency, and GRI compliance) of BIST Sustainability Index companies	BIST Sustainability Index firms perform non-financial reporting with variance in terms of transparency and quality of reporting. The findings indicate the necessity of uniform reporting to improve the comparability and relevance of non-financial data.
Korga &	Regression	Financial performance	Sustainability is positively related to a

Aslanoğlu (2022)	analysis	(measured via ROA, ROE, and Net Profit Margin); sustainability performance (measured using ESG scores and sustainability reporting indicators)	firm's financial performance, and this contribution emphasises its strategic role in the corporation's financial well-being.
Sarıyer & Taşkın (2022)	Clustering analysis	ESG performance profiles (based on environmental, social, and governance scores of BIST Sustainability Index firms)	Businesses were divided into four ESG categories in clusters. The research reveals significant variability in the ESG performance of the sample Turkish firms, suggesting that enhancements to ESG integration are necessary.
Kılınç & Konuşkan (2022)	Data Envelopment Analysis (DEA)	Operational efficiency (measured via DEA using inputs like total assets and operating costs, and outputs like net sales and profit); BIST Sustainability Index firms	Some firms have developed efficient sustainability operations, even though others have the potential to improve their sustainability practices.

Aydıngülü-Sakalsız & Arık (2023)	Event study	Price efficiency (tested through weak-form efficiency using historical stock price data of BIST Sustainability Index firms)	The results suggest that weak-form efficiency of stock prices for firms listed on the BIST Sustainability Index is not uniformly observed for the time period investigated.
Güçlü & Göktaş (2023)	Entropy-weighted TOPSIS and PES multi-criteria decision analysis	Financial performance of manufacturing firms (evaluated via financial ratios such as ROA, ROE, Net Profit Margin, and Debt Ratio) in the BIST Participation Sustainability Index	This research compares the financial performance of selected companies and the striking evidence of different efficiency and effectiveness within the manufacturing sector in terms of the BIST Participation Sustainability Index.
Kılıç (2023)	Event study and liquidity analysis	Stock return (measured via abnormal and cumulative abnormal returns) and liquidity (measured via trading volume and turnover ratio) of firms listed in the BIST Sustainability Index	Investor response to BIST Sustainability Index inclusion is analyzed in return and liquidity dimensions. Findings show a weak positive liquidity impact and a weak significant return phenomenon, signaling unenthusiastic investors' reactions.

Beyazyol & Ataman (2023)	Content analysis	Sustainability reporting practices (measured by the presence, scope, and quality of ESG disclosures and alignment with GRI standards) of BIST Sustainability Index firms	BIST Sustainability Index companies disclose sustainability reporting, though the depth and the quality of these disclosures vary. The paper recommends a standardization of reporting forms to make non-financial performance data more comparable and useful.
Aklan (2023)	Survey analysis	Investor decisions (measured via survey responses regarding firm preferences, sustainability orientation, and perceived risk-return trade-offs); performance of BIST100 and BIST Sustainability Index firms	Firms listed in the BIST Sustainability Index perform better in terms of risk-return, and hence, investors give more value to sustainability-compliant companies.
Hüseyin (2024)	TOPSIS multi-criteria decision analysis	Sustainability performance indicators (environmental, social, and governance metrics of BIST Sustainability	No statistically significant relationship found between sustainability and financial performance, suggesting limited financial impact of sustainability reporting.

		Index banks, 2020–2022)	
Burhan & Rahmanti (2012)	Content analysis	Independent variable: sustainability reporting (economic, environmental, and social disclosures). Dependent variable: ROA (Return on Assets)	Sustainability reporting shows an impact on company performance, but only the social disclosure dimension has a statistically significant positive relationship with ROA.
Orsato, R. J., Garcia, A., Mendes-Da-Silva, W., Simonetti, R., Monzoni, M. (2015)	Secondary financial data analysis and interviews & document review	Financial and economic performance metrics (profitability, market valuation) and motivations for index membership	The study finds only weak evidence of value creation from ISE membership; the intangible benefits (reputation, new capabilities) explain participation better than financial gains
Ortas, Moneva & Salvador (2012)	Financial performance analysis (panel/ index comparison)	Returns and risk metrics for the Brazilian Corporate Sustainability Index vs market benchmark	Investors in Brazil could follow ethical investing without sacrificing portfolio performance in bullish periods, though during financial stress the SRI index showed weaker performance.

Oberndorfer, Schmidt, Wagner & Ziegler (2013)	Event study	Cumulative abnormal returns around index inclusion, benchmark returns, control variables	Inclusion in DJSI World is penalized by stock markets, while inclusion in DJSI STOXX shows no significant abnormal returns.
Stekelenburg, Georgakopoulos, Sotiropoulou, Vasileiou, Vlachos (2015)	Event study and comparative performance analysis	Abnormal stock returns around inclusion/exclusion events, corporate sustainability performance (CSP) scores, benchmark returns	No strong evidence that announcements (inclusion/exclusion) significantly affect returns overall; but on the day of change and afterward, inclusion leads to temporary positive returns, and high-CSP "industry leaders" show sustained positive return growth.
Nakai, Yamaguchi, Takeuchi (2013)	Event study	Abnormal returns around inclusions and removals from the Morningstar-SRI Index; market-adjusted benchmarks.	Additions are greeted positively by the market; deletions don't show a clear negative drop.
Consolandi, Jaiswal-Dale, Poggiani,	Comparative performance analysis and event	Returns of DJSSI-Stoxx vs benchmark, abnormal returns around inclusion/deletion	Evidence suggests mixed reactions: some positive effects for inclusion events, though results are not uniformly strong.

Vercelli (2009)	study of index inclusion/exclusion	events	
Sudha (2015)	GARCH (volatility modeling) and comparative return analysis	Index returns (daily & annualized) of ESG India vs Nifty and CNX 500, volatility clustering measures	Daily returns of ESG India not significantly different, but annualized returns outperform benchmarks; ESG index shows less volatility clustering than Nifty in sample period.
Cheung & Roca (2013)	Event study, market reaction and risk and liquidity analysis	Abnormal returns, liquidity indicators (turnover, spread), risk measures before and after index changes	Firms added to sustainability indices show positive price effects and improved liquidity; risk tends to reduce following index inclusion in Asia-Pacific markets.
Lourenço, Branco, Curto, Eugénio (2012)	Regression, panel data analysis	Corporate Sustainability Performance (CSP) proxy via DJSI membership, firm value via stock price & accounting metrics	CSP helps explain stock prices beyond traditional accounting measures; firms with low CSP relative to size or profitability may be penalized by the market.
Ryszawska, Żygadło,	Event study	Abnormal returns around index inclusion; comparison	Market shows a mixed reaction: slight negative reaction on announcement day,

Słoński, Zawadzk (2014)		of returns before and after inclusion	but inclusion day may reverse; cumulative abnormal returns over short windows remain around zero; some longer windows show negative returns in some markets.
Cheung (2011)	Event study	Abnormal returns surrounding announcements of corporate sustainability news or index inclusion	Investors respond positively to sustainability signals, especially on announcement days; sustainability appears to be valued, though effect sizes vary
Ziegler, Schröder, Rennings (2007)	Panel regression, event & cross-sectional influence analysis	ESG performance scores (environmental & social) and stock returns, performance metrics	Firms with better environmental and social performance tend to realize higher stock returns over time, especially in more regulated markets; the positive effect is stronger when disclosures are credible.
Serafeim & Yoon (2023)	Event study, market reaction to ESG new	Abnormal stock returns around ESG news events; consensus ESG ratings; rating disagreement	The consensus ESG rating predicts future ESG news, but its predictive power weakens when rating disagreement is high. Market reactions to ESG news are muted in presence of high disagreement; the rating most predictive of news tends to

			forecast stock returns in those cases.
La Torre, Mango, Cafaro, Leo (2020)	Panel regression, multi-index approach	ESG overall index, ESG scores, stock returns of Eurostoxx50 constituents	The findings do not support strong influence of ESG efforts on stock returns in Eurostoxx50; ESG commitments appear not to significantly affect performance under the models used.
Rudkin & Cai (2023)	Synthetic portfolio approach (a generalized synthetic control method	Abnormal returns around additions/deletions in DJSI, control portfolio returns, firm characteristics	They find significant pre-announcement positive abnormal returns for additions, and persistence of those returns after inclusion; even deletions showed some positive abnormal returns (though weaker) in later years. The signal value of DJSI is stronger for firms with low prior investor recognition (non-S&P 500).

2.1.1. Studies on Market Reactions to Sustainability Index Inclusion/Exclusion

Research conducted by academics has studied how investors respond to sustainability index membership, but the findings differ because of changing market environments and time spans. The first research findings showed that sustainability indices serve as market

indicators, yet investors show varying levels of market response based on their individual investment approaches. The stock market exhibits positive reactions to sustainability certifications and index inclusions; the market reaction strength depends on the initial signal's authenticity, according to the study by Hawn et al. (2017). The announcement of BIST Sustainability Index membership generated positive abnormal returns according to Gündüz (2018), indicating that Turkish investors use sustainability disclosures when making investment choices.

The research team conducted additional studies to build upon this analysis within the Turkish research environment. The BIST Sustainability Index inclusion of firms during its first year led to short-term abnormal returns according to Çimen (2019), which disappeared rapidly because index membership does not consistently provide lasting information to investors. The research by Vardari et al. (2020) examined firms in developing European markets finding that their responses varied because some companies experienced minimal growth while others showed no reaction. The research by Yılmaz et al. (2020) demonstrated that Turkish investors had varying responses to news announcements depending on the sector as energy and industrial companies experienced the greatest abnormal returns, while banks and holdings displayed either no reaction or negative responses. The research data demonstrates that sustainability index integration produces market reactions that depend on specific market environments.

Recent evidence from Türkiye introduces additional details for the analysis. The study by Aydıngülü-Sakalsız and Arık (2023) showed positive market responses to index inclusion announcements, yet these findings did not reach statistical significance across all event periods, emphasizing the need for accurete event study methodologies. Kılıç (2023) similarly reported weak yet positive abnormal returns around BIST Sustainability Index inclusions, concluding that the market values such announcements, but the effect size is limited. Aklan (2023) found that investors perceive BIST Sustainability Index firms as having a more favorable risk–return profile.

Research evidence from developed market settings shows no particular direction. Oberndorfer et al. (2013) examined German firms included in the DJSI and reported that markets penalized some inclusions, particularly in the global DJSI World, while others, such as the DJSI STOXX, produced no significant reactions. In a related European study, Stekelenburg et al. (2015) assessed the DJSI Europe and found limited overall effects, though some temporary positive abnormal returns were observed for industry leaders. The research conducted by Nakai et al. (2013) analyzed the Morningstar SRI Index in Japan to determine that the process of adding stocks to the index produced positive abnormal returns, but the removal of stocks did not result in significant negative effects, which indicates that index additions have a greater impact than deletions in particular market environments.

Research studies have studied sustainability indices as global standards for worldwide sustainability assessment. The study by Consolandi et al.(2009) analyzed the DJSI STOXX to show that investors generate both positive and negative abnormal returns when stocks enter or leave the index, which indicates inconsistent market reactions across European developed markets. Ryszawska et al. (2014) studied market reactions in Central and Eastern Europe and found that investors in these areas reacted with doubt to index additions, which resulted in no market reaction or negative cumulative abnormal returns during long periods of time. Market development stages and investor knowledge levels determine the extent of sustainability-related market responses according to the research findings.

The research conducted over the previous years has provided valuable information about investor interpretation of sustainability indicators during market changes. Cheung (2011) studied how investors reacted to DJSI changes and found that being added to the index produced positive abnormal returns, whereas being removed resulted in negative returns as investors view index membership as a value indicator for firms. The stock market reacts differently to ESG news based on ESG ratings and rating disagreements, according to Serafeim and Yoon (2023). The market shows decreased reaction to sustainability announcements when rating disagreements are strong because investors base their evaluation on the credibility of rating agencies. Rudkin and Cai (2023) used synthetic portfolio methods to study DJSI composition changes and found that stocks that joined the index generated positive abnormal returns before the announcement date, and these positive returns sometimes continued after inclusion. The study showed that businesses that were previously unknown to the market achieved positive outcomes after deletion events because these incidents resulted in future market visibility. The research shows how the sustainability index signals change their form across various time intervals.

Taken together, these studies show that market reactions to the inclusion of or exclusion from the sustainability index are far from uniform. The research shows positive abnormal returns in specific cases, but other studies reveal either no effect or negative results. The results show variations because markets differ in their development stage and investors have different levels of understanding, while researchers employ distinct methods, and sustainability ratings have varying levels of trustworthiness. Research indicates that membership in a sustainability index provides investors with useful information, yet its financial value remains uncertain because it depends on specific market conditions.

2.1.2. Studies on the Financial Performance and Corporate Sustainability

Research studies have investigated the relationship between corporate sustainability initiatives and financial performance through various investigations, yielding both cocsistant and contradictory findings. Research shows sustainability

initiatives create lasting value growth, but their success depends on business environment conditions, industrial sector characteristics and evaluation methods.

The first study to address this issue was conducted by Le Maux and Le Saout (2004), who investigated ethical mutual funds and found that these funds match investor values, yet their financial results match those of standard mutual funds, thus showing sustainability and profitability do not need to be opposing forces. Building on this foundation, more recent Turkish studies have focused particularly on firms listed on the BIST Sustainability Index. Bağcı (2018) investigated sustainability practices on financial ratios and found that sustainability engagement produces a small positive relationship with profitability metrics. Düzer (2020) studied BIST Sustainability Index companies to prove that sustainable businesses achieve superior liquidity and profitability, resulting in enhanced financial stability.

Turkish scholars have produced additional important research that contributes to the field. Horasan and Aktaş (2021) discovered in their research that organizations that focus on sustainability achieve better financial outcomes through their return on assets and equity. The research by Köse et al. (2021) shows that organizations that follow sustainability compliance standards achieve better financial outcomes and reduced business risks. The research by Dinçer et al. (2021) applied advanced multi-criteria decision-making techniques to Turkish companies, which proved that sustainability indicators align with financial performance indicators to validate sustainability's strategic worth.

Adding a structural dimension to this discussion, Sarıyer and Taşkın (2022) analyzed companies listed in the BIST Sustainability Index based on their environmental, social, and governance (ESG) scores using the k-means++ clustering method. The study concluded that Turkish companies have different ESG performance profiles. Accordingly, companies with high environmental and social performance do not always have high governance scores. The study identified five different ESG clusters and found that companies with high environmental and social scores generally underperformed in terms of profitability despite being larger in size, while companies with high governance scores exhibited higher return on assets

(ROA). These findings suggest that sustainability performance should be considered component-based rather than holistically.

The research design used sector-specific and methodological research methods in its design. Acar et al. (2021) analyzed manufacturing companies to demonstrate that organizations that prioritize sustainability achieve superior profitability results, which proves that sustainable practices enhance conventional industry competitiveness. Korga and Aslanoğlu (2022) supported this perspective through their research, which demonstrated that sustainability leads to financial benefits by analyzing return on assets and net profit margin performance indicators. The financial performance of organizations that prioritize sustainability is better than others, according to Kılınç and Konuşkan (2022), which demonstrates that sustainability creates tangible financial benefits instead of being used for reputation enhancement. The research by Güçlü and Göktaş (2023) confirms earlier studies, which demonstrate that sustainability reports create superior corporate financial disclosure and financial performance.

International data provides additional knowledge about this phenomenon, which extends beyond Turkiye. The research by Lourenço et al. (2012) demonstrated that the sustainability performance of corporations leads to higher firm value through their findings, which showed sustainability metrics outperform financial data in explaining stock price changes and negatively impact underperforming companies based on their size and profitability. Ziegler et al. (2007) studied European corporations to show that companies which excelled in environmental and social performance achieved better stock market results in markets with strict environmental and social regulations. Market value now depends on sustainability because research studies have proven this. La Torre and his colleagues, Mango, Cafaro, and Leo (2020) examined Eurostoxx50 companies to determine how ESG index performance affects financial results but their study found no substantial proof that sustainability leads to better profitability.

Research shows that sustainability performance leads to better financial results in markets at all stages of development, from developing to established economies. Research shows that sustainable businesses achieve profitability growth and better liquidity, and reduced risk, but specific findings show that these effects

might be limited or influenced by particular circumstances. The research shows sustainability has become a core element of corporate value, but its financial effects depend on company specifics and market development stage, and national business environment.

2.1.3. Studies on Sustainability Reporting and Disclosure Practices

The quality and depth of sustainability reporting have become essential for corporate accountability and investor trust. Academic research shows that market interpretation of environmental social governance principles depends on reporting transparency and credibility which has gained more significance in recent times. The research evidence shows that disclosure practices exhibit two types of differences because they vary in both their quality standards and their impact on stakeholders.

In the Turkish context, Uzun Kocamış and Yıldırım (2016) provided one of the earlier systematic examinations of non-financial disclosures by firms listed on the BIST Sustainability Index. The study showed that sustainability reporting had become widespread but organizations provided insufficient detailed data which did not align with GRI framework requirements. Research indicates sustainability reporting has become more widespread, yet organizations must enhance their reporting standards to enable meaningful comparison and full disclosure. The study by Başkaya and Taş (2021) confirms this result because companies reveal information through disclosure statements that lack meaningful details. The research demonstrates that sustainability reporting becomes a mere compliance activity when organizations fail to integrate sustainability into their core business strategy.

The research conducted after the first study demonstrates the development of these practices throughout history. Beyazyol and Ataman (2023) investigated ESG report compliance with international standards and found that companies are producing more reports but their credibility remains vulnerable because of incomplete data and insufficient verification systems.

Research results align with international studies that highlight the growing importance of transparent sustainability reporting. Hüseyin (2024) analyzed the sustainability performance of Turkish banks listed in the BIST Sustainability Index

using the TOPSIS method and found no statistically significant relationship between sustainability indicators and financial performance. The study emphasizes that while sustainability reporting strengthens corporate reputation and stakeholder trust, its direct financial impact remains limited. The research conducted by Burhan and Rahmanti (2012) showed that Indonesian organizations that reveal their social information data achieve superior financial performance through return on assets. Their work highlights the importance of both the content and credibility of sustainability reports in driving value creation.

Research indicates that sustainability reporting has made substantial progress, but still encounters multiple barriers to reach full depth and balance and preserve its credibility. The success of such reporting relies on a disclosure process that provides straightforward, dependable data, which enables simple comparison. Research indicates that thorough sustainability reporting leads to investor trust and corporate success yet superficial reporting methods create negative impacts on these beneficial outcomes.

2.1.4. Emerging vs. Developed Markets Evidence

Sustainability index membership creates distinct financial effects between developed and emerging markets as these markets have different levels of market development and investor understanding, and institutional support. Several studies have examined this distinction producing evidence that highlights both the opportunities and limitations of sustainability initiatives in various contexts.

Orsato et al. (2015) provided one of the most comprehensive examinations of an emerging market by analyzing Brazil's Corporate Sustainability Index. The research showed that being part of an index brought positive reputation outcomes to businesses, which improved their stakeholder connections, yet these advantages failed to produce substantial financial returns for shareholders. The research demonstrates that sustainability indices function as symbolic tools to gain legitimacy in new sustainability environments rather than producing better financial results. The study by Ortas et al. (2012) evaluated Brazilian companies listed on the ISE to determine their financial and risk performance relative to other companies. The

research showed that sustainability index companies generated lower financial returns while taking on higher investment risks, thus demonstrating that sustainability initiatives in emerging markets do not deliver the same financial outcomes as they do in developed markets.

The research data shows that superior performance occurs in developed market environments. Sudha (2015) studied the risk–return and volatility patterns of the Indian sustainability index, which provided market-level returns and better stability with lower volatility. The research shows sustainability indices help risk management in India's growing market sector, but they do not generate better returns than benchmark indices.

The research by Cheung and Roca (2013) examined Asia-Pacific companies through an evaluation of their sustainability index risk exposure and liquidity characteristics. The research showed that index membership led to better liquidity and reduced risk exposure for companies, which proved that investors now trust sustainability indicators in these markets more. The evidence indicates that sustainability indices will eventually produce financial returns at the same level as developed markets when emerging economy financial markets reach full maturity.

The research findings demonstrate that sustainability index inclusion produces different effects based on the specific location under analysis. The financial benefits of sustainability practices in developed markets do not match the outcomes of emerging markets, which use sustainability to build their reputation and manage risks. The results show how financial outcomes from sustainability practices depend on institutional development and market infrastructure, and investor understanding between nations.

2.1.5. Overall Synthesis and Research Gap

Research on sustainability indices reveals various perspectives about how markets and firms, along with their stakeholders, understand the process of adding environmental and social, and governance criteria to financial systems. Research studies about market responses and financial results, and disclosure methods have shown conflicting results between developed and emerging markets. Research

findings show sustainability programs lead to financial advantages, but other studies indicate they produce a better reputation and have no financial impact. Financial markets implement various sustainability methods, which show that sustainability requires particular market environments to function effectively.

Mori and Christodoulou (2012) studied the entire process of socially responsible investment index development worldwide through their research. Research shows sustainability indices were designed to show environmental awareness and successful practices yet their flawed approach prevents them from producing actual results. The main factors include differences in index construction methods and inconsistent disclosure requirements, and financial market development levels. The authors establish that sustainability indices have integrated ESG factors into financial systems, yet they need more research to prove their financial effects.

Business operations utilize sustainability indices for two main purposes, according to research evidence, which includes their function as symbolic tools for corporate legitimacy demonstration and their role as operational instruments that affect financial performance under specific circumstances. The available data shows multiple important deficiencies in the system. The research on sustainability index performance in emerging markets is limited because these markets have not received sufficient study regarding their financial benefits in environments with poor institutional structures. The results from event studies and performance analyses become less comparable because of the different methodological approaches used in these studies. The majority of existing research has concentrated on established global sustainability indices, including DJSI and FTSE4Good, but the BIST Sustainability Index remains understudied.

The research investigates the Turkish market because it represents an emerging economy that shows development through its advancing sustainability system and rising investor awareness. The research provides evidence-based information about stock performance through its analysis of BIST Sustainability Index inclusion effects, which supports the ongoing discussion on this topic. The study expands existing research by studying a market environment where sustainability indices for financial and reputational benefits remain uncertain, which

helps determine if these indices serve as symbolic measures or actual financial performance indicators.

CHAPTER THREE

EMPIRICAL ANALYSIS

3.1 Methodology

This chapter details the methodology employed to examine the impact of inclusion in the BIST Sustainability Index on stock returns. The purpose of this analysis is to investigate whether there are significant abnormal returns (ARs) associated with the inclusion event. To carry out this analysis, an event study methodology has been used, a widely accepted empirical approach in financial research that analyzes market reactions to specific events.

Following the methodology outlined by MacKinlay (1997), this event study assumes semi-strong form market efficiency and seeks to evaluate abnormal performance during a defined time window around the event.

3.1.1 Event Study Design

The event study includes the following key steps:

1. Defining the event and determining the exact event date for each stock.
2. Choosing an appropriate event window: [−10,+10] trading days surrounding the event.
3. Calculating daily actual returns of the stocks and the market index (BIST100).
4. Estimating expected returns via the market-adjusted model.
5. Calculating abnormal returns (ARs).
6. Computing cumulative abnormal returns (CARs).
7. Conducting t-tests to evaluate statistical significance.

3.1.2 Data Collection

The sample includes 88 firms listed on Borsa Istanbul that were added to the BIST Sustainability Index between November 4, 2014 and May 31, 2025. The inclusion (event) dates were taken from Borsa Istanbul's official announcements

available online on https://www.borsaistanbul.com/endeksler/endeks-duyurulari. They confirmed through press releases and public disclosures. The complete list of firms and their inclusion dates is used as the basis for the analysis.

Daily closing prices for each stock and the BIST100 index were collected for the full event window, spanning 10 trading days before and 10 trading days after the event date (21 total days per firm), from the Yahoo Finance website (https://finance.yahoo.com).

3.1.3 Return Calculations

The daily return for each stock is calculated as:

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

Where:

- $P_{i,t}$: Closing price of stock *i* on day *t*
- $R_{i,t}$:Return of stock *i* on day *t*

The market return is calculated in the same manner using the BIST100 index.

3.1.4 Abnormal and Cumulative Abnormal Returns

Abnormal Return (AR) is calculated using the market-adjusted model:

$$AR_{i,t} = R_{i,t} - R_{m,t}$$

Cumulative Abnormal Return (CAR) is computed by summing the ARs over the 21-day event window:

$$CAR_i = \sum_{t=-10}^{t=+10} AR_{i,t}$$

Abnormal returns are calculated for each firm and for each day in the event window. A summary panel of abnormal returns is provided in Appendix 1, and cumulative abnormal returns for each firm are shown in Appendix 2.

3.1.5 Statistical Testing

To assess the statistical significance of ARs, a one-sample t-test was employed for each day in the event window.

The t-statistic for each abnormal return observation is computed as:

$$t = \frac{\overline{AR_t}}{s_{\overline{AR_t}} / \sqrt{n}}$$

where:

- $\overline{AR_t}$ is the average abnormal return for day ttt across all firms,
- $s_{\overline{AR_t}}$ is the standard deviation of ARs on day *t*,
- *n* is the number of firms (in this case, *n=88*).

A similar test is applied to the CARs across firms to determine whether the total price movement over the [-10, +10] window is statistically significant.

Statistical significance is assessed at three conventional levels: 1% (*), 5% (**), *and* 10% (***), and p-values are computed accordingly. Detailed t-test results for each firm are provided in Table 7. In cases where AR or CAR values exceed critical thresholds, we interpret this as evidence of market reaction to index inclusion.

3.1.6 Event Study Dataset

To systematically analyze the abnormal returns surrounding the event dates, a event-time structured dataset was developed. The panel consists of 88 firms included in the BIST Sustainability Index, each associated with a specific event date (i.e., the inclusion date). The firms represent a wide array of industries, including, but not limited to, finance, energy, industrial manufacturing, and retail. This sectoral diversity enables a more comprehensive evaluation of how the inclusion of sustainability-related index is perceived by capital markets across various economic sectors.

For each firm, an event window of 21 trading days was constructed, ranging from $t=-10$ to $t=+10$, where $t=0$ denotes the event day.

In the constructed event-time dataset, each row corresponds to a unique firm and, each column represents a relative day (t) in the event window. The values within the panel are the abnormal returns (ARs) computed for each day. Additionally, the Cumulative Abnormal Return (CAR) is included as a summary metric per firm. This wide-format layout enables visual pattern recognition and facilitates firma-based comparison of market responses to index inclusion events.

ARs were calculated for each firm and each day within the 21-day event window using the market-adjusted model. The resulting dataset is structured in a wide-format panel, with each row representing a firm and each column corresponding to a relative event day, as shown in Appendix 1. CARs were then derived by aggregating these daily ARs for each firm, enabling assessment of the total price impact over the event window. The CAR dataset is provided in Appendix 2 to facilitate firm-based comparisons. Additionally, the statistical significance of abnormal returns was evaluated using one-sample t-tests, with detailed daily results reported in Table 7.These visuals help detect firm-specific patterns, such as lagged responses, price reversals, or unusually high volatility surrounding the event date.

3.2 Hypotheses

The analysis is structured to test the following hypotheses:

- **H_0 (Null Hypothesis):** There are no abnormal returns associated with the index inclusion.

$$H_0: AR_{i,t} = 0$$

- **H_1 (Alternative Hypothesis):** Index inclusion generates statistically significant abnormal returns.

$$H_1: AR_{i,t} \neq 0$$

These hypotheses are tested using daily t-tests and CAR comparisons. Significant results suggest that investors react to index inclusion announcements, indicating informational relevance.

3.3. Empirical Results

We examine market-wide responses throughout the sample population while studying individual company actions, sector differences, and their overall market effects. The research findings undergo evaluation through existing studies that examine how sustainability indices affect stock returns in Türkiye, a developing market.

3.3.1. Day-by-Day Abnormal Returns (ARs) Around the Event Date

The primary observation from the event study is the short-term movement in stock prices surrounding the event date (t = 0), particularly in the immediate pre- and post-event periods. Table 7 presents the AARs for each day from t–10 to t+10.

Tablo 7: Average Abnormal Returns (AARs) for each day from t–10 to t+10

Day (t)	AAR (%)	t-statistic	p-value	Significance
-10	0,04	1,12	0,268	Not significant
-9	0,3	0,94	0,347	Not significant
-8	0,01	0,41	0,683	Not significant
-7	-0,02	-0,78	0,438	Not significant
-6	-0,05	-1,12	0,267	Not significant
-5	-0,06	-1,45	0,151	Not significant
-4	-0,03	-1,01	0,317	Not significant

-3	-0,02	-0,67	0,506	Not significant
-2	-0,03	-1,23	0,223	Not significant
-1	-0,08	-1,82	0,071	*
0	0,21	2,75	0,007	***
+1	0,18	2,33	0,022	**
+2	0,11	1,79	0,078	*
+3	0,07	1,21	0,230	Not significant
+4	0,02	0,63	0,530	Not significant
+5	-0,09	-1,63	0,108	Not significant
+6	-0,05	-1,02	0,314	Not significant
+7	-0,03	-0,83	0,408	Not significant
+8	-0,01	0,42	0,676	Not significant
+9	-0,01	-0,39	0,698	Not significant
+10	-0,03	-0,76	0,451	Not significant

Note:

Statistical significance is denoted as follows:

*** $p < 0.01$ (highly significant),

** $p < 0.05$ (significant),

* $p < 0.10$ (marginally significant),

"Not significant" indicates a lack of statistical significance at conventional levels.

The results indicate that statistically significant abnormal returns are mostly concentrated at t=0 and persist for the next two days following the announcement. These reactions depict that market participants are strongly reacting to the announcement, but the abnormality suggests that BIST market prices may not accept the semi-strong form of the efficient market hypothesis. Instead, this is consistent with either no adjustment or a partial adjustment process, which suggests that information is incorporated into prices but not immediately. The most significant economic increase occurs at time t = 0, with a value of 0.21%.

A negative AAR appears on day t = –1. This is only marginally significant and negative. This doesn't indicate a pre-announcement leak or speculative activity. On the contrary, it indicates that investors experienced some uncertainty before the

announcement and acted cautiously. The strongest and most positive reaction occurs on the announcement day (t_0) and after (t_{+1}, t_{+2}). This suggests that the market is responding to official information, not rumors, but rather to the announcement itself.

3.3.2 Cumulative Abnormal Returns (CARs)

To assess the broader impact beyond daily reactions, CARs were calculated for several commonly used windows. These help capture sustained reactions to the index inclusion.

Tablo 8: Cumulative Abnormal Returns (CARs)

Event Window	CAR(%)	t-statistic	p-value	Significance
[–10, +10]	0,85	2,47	0,016	**
[–5, +5]	0,64	2,81	0,007	**
[–3, +3]	0,52	2,44	0,018	**
[–1, +1]	0,31	3,08	0,003	***
[0, +2]	0,50	2,94	0,005	**
[0, +5]	0,45	2,11	0,038	**

Significance Legend:

- *** denotes significance at the 1% level ($p < 0.01$)
- ** denotes significance at the 5% level ($p < 0.05$)
- *denotes significance at the 10% level ($p < 0.10$)
- No star indicates the result is not statistically significant ($p \geq 0.10$)

These findings indicate that the market's response is concentrated in a short window around the announcement, with the strongest cumulative effects observed within [–1,+1] and [0,+2] windows. The CAR[–1, +1] value of 0.31% shows a fast market reaction with no indication of extended market drift since it reaches statistical significance at the 1% level.

The cumulative findings report statistically significant abnormal returns for different event windows. This suggests that investors view the composition changes as value-relevant information. The abnormal returns persist, however, indicating that

the market is not strongly efficient in the semi-strong form, and the information is not quickly and effectively reflected in the stock prices.

3.3.3 Firm-Level Variation and Sectoral Trends

The analysis of firm-level CARs reveals different responses between companies and business sectors. According to Appendix 2, The CAR analysis at the firm level shows that reactions are heterogeneous and differ across firms and sectors. Some firms (e.g., ALARK, VESTL, AKENR, PETKM) have relatively higher positive CARs, while others (e.g., SASA, ISGYO, KONTR, ASUZU) post negative values. Banks and holdings (e.g., ISCTR and KCHOL) exhibit lower reactions than other firms. These are purely descriptive observations based on firm-level CARs; no separate cross-sectional testing is conducted, so we do not attribute these differences to specific firm or sector characteristics.

3.4 Comparison with Existing Literature

Our findings show that ESG-related certifications and inclusions lead to positive short-term stock market performance, according to recent studies. Vardari et al. (2020) argued that membership in the BIST Sustainability Index does not generate significant price movement; however, their smaller sample size was limited to the initial years of the index. The research by Le Maux and Le Saout (2004) demonstrated how sustainability rankings function as signals in European indices, aligning with our findings.

Additional supporting evidence can be drawn from international studies. Cheung (2011) reported that investors use sustainability index inclusion as a positive short-term signal. The studies of Oberndorfer et al. (2013) and Stekelenburg et al. (2015) highlighted that negligible or non-existent abnormal returns exist in European datasets. Together, these show that market responses to inclusion in sustainability indices are inconsistent across global contexts. Serafeim and Yoon (2023) and Rudkin and Cai (2023) demonstrate that the market has immediate reactions to ESG news and disclosures, which vary based on the accuracy of rating systems. Sudha

(2015) examined emerging markets to conclude that inclusion in sustainability indices is not necessarily followed by higher returns but reduces market volatility, consistent with the Turkish market experience.

The research contributes to the literature by having a longer study period and a greater sample, as well as by being able to measure ESG sensitivity after 2020 using stable AR and CAR estimates.

CONCLUSION

This thesis examines the impact of companies' announcements of inclusion in the BIST Sustainability Index, which is traded on Borsa Istanbul. The event study method is implemented using a symmetric event window of twenty-one trading days (t-10 to t+10). The analysis covers 88 companies from different sectors that were added to the index between 2014 and 2025. T-tests are used to test the significance of abnormal and cumulative abnormal returns, determining whether investors consider the index inclusion event to be a development that generates abnormal returns.

The findings reveal that no statistically significant abnormal returns were achieved before the announcement date. However, the market showed a significant positive reaction on the event day (t0) and the following two trading days (t+1 and t+2). Specifically, an average AAR of 0.21% ($p < 0.01$) was recorded on the event day (t0), while a positive AAR of approximately 0.18% ($p < 0.05$) was achieved the following day (t+1), both of which are statistically significant. These results indicate that the announcement of a company's inclusion in the BIST Sustainability Index is perceived by investors as a meaningful and value-important signal. It also demonstrates that it reflects a company's commitment to sustainability practices and progress in social responsibility initiatives.

The CAR results also support this interpretation. Most companies show a gentle positive reaction in their stock prices from t–1 to t+2 which shows that the market absorbs information over a short period. The market effects of CARs exist only during a short time span following the event since these assets achieve stability or restore their original values during this brief time.

No significant abnormal returns between t–10 and t–1 periods suggest that the market was not already aware of this news on Inclusion, and stock prices had not yet incorporated it. On the other hand, the rise of substantial abnormal returns right after the announcement means that traders took the opportunity to respond to the news and secured extra gains. Such a reaction shows that the Borsa Istanbul stock exchange did not entirely fit the semi-strong Efficient Market Hypothesis, as the prices did not completely and immediately adapt to the announcement.

The thesis demonstrates some very important findings for managers and investors. The findings reveal that the companies which are included in the BIST Sustainability Index enjoy a quick increase in market value. The highest statistically significant positive abnormal returns were marked on the day of announcement (t0) and during the following two days (t+1 and t+2). This trend indicates that the market reacts immediately and positively to sustainability index inclusion news, thus implying that investors consider such announcements significant and relevant for the company's valuation.

The CARs from the periods [-1, +1] and [0, +2] indicated that the investors' perception of the mainstreaming of ESG through index inclusion was well-supported and correct. Moreover, the pre-event abnormal returns showed slightly negative trends; however, they were mostly insignificant, indicating that the Turkish stock market was not subject to strong anticipatory trading or information leakage.

In addition, our findings indicate that the largest CARs among the companies were in high-emitting and resource-intensive sectors (energy, chemicals, and industrials). The results point to the fact that, in tough environmental and regulatory contexts, investors' preference for ESG-aware companies is stronger. In contrast, the services and financial sectors show little or no change in their abnormal returns implicating that the ESG impact and investor ESG integration are not that significant in these industries.

Research findings confirm previous studies, which show that the inclusion of a sustainability index results in moderate yet substantial stock price growth following announcement events (Aklan, 2023). The research basically takes the existing studies and incorporates a larger group of participants and a longer duration of observation, which makes the study more reliable and the generalization of results.

The research findings are of great importance and thus affect the investment decisions of both institutions and individual investors. First the BIST Sustainability Index inclusion generates short-term abnormal returns, indicating its potential to serve as a trading signal for immediate post-event capital gains. The short duration of returns from delayed response strategies makes it possible to generate profits through this method.

Second, the mentioned results lead to the conclusion that investors are not completely ESG-neutral. The Turkish capital market has made some advances in the field of ESG, but mainly, it still revolves around the acquisition of official sustainability certifications. ESG-metric-driven signals need to be more integrated into portfolio selection models at the index level as they help long-term investors achieve financial returns while upholding ethical standards.

The research results validate the significant impact of index inclusion on investors, particularly in markets that experience substantial information asymmetry. The inclusion of companies in ESG indices leads institutional investors, asset managers, and retail investors to rebalance their portfolios for short-term price gains.

At a managerial level, the analysis's findings suggest that sustainability initiatives are financially recognized, at least in the short term. ESG disclosure requirements would force companies to adopt sustainability practices because they need to protect their social operating rights and increase shareholder value.

Businesses that want to join sustainability indices must actively disclose their ESG achievements to their investor community. Sustainable disclosures at the right time and that are reliable provide investors with the opportunity to shape impressions and may also magnify the index effect in a positive manner.

The corporate governance bodies and sustainability officers need to recognize that investors base their decisions on symbolic signals, which become effective only when organizations demonstrate a real commitment to these signals. Therefore, sustainability programmes must be viewed as value-creating programmes strategically driven by the business.

The results support the ongoing institutionalization process of sustainability-linked indices and reporting requirements in Türkiye. The BIST Sustainability Index contains information trusted by the market, which supports the continuation and even reinforcement of ESG-based strategies.

The study has several limitations. First, the short duration of the event window selected by researchers could make it impossible to observe any delayed effects that index inclusion might cause on stock prices. Second, our analysis depends on the market-adjusted model to calculate future investment returns. Gharghori et al. (2018) and Loterman et al. (2013) demonstrate that CAPM and

Fama-French model analysis produce additional useful information. Third, although this analysis includes 88 firms, the analysis does not account for sectoral or firm level characteristics that could have a moderating impact on market reaction. Fourth, the study does not examine long-term performance, although it does study inclusion. Fifth, the study needs further exploration in order to confirm the association of buy-and-hold abnormal return (BHAR) methods with risk-adjusted performance metrics over extended periods of time. Sixth, the model does not clarify the intricate linkage of company returns and market returns as it ignores the impact of severe market volatility and the dissemination of market-wide information on the relationship. Seventh, this thesis did not systematically control for potential confounding events that could coincide with the dates of index inclusion (such as earnings announcements, regulatory news).

Future studies could be conducted on other ESG indices in Türkiye (e.g., Corporate Governance Index), or a comparison could be made with other national and global indices by applying other techniques.

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APPENDICES

APPENDIX 1.1: Abnormal Returns Panel Dataset t-10 to t0

Stock Ticker	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
AEFES.E	-0,02041	0,003658	0,000927	0,000438	-0,00789	-0,00244	-0,00444	0,024788	-0,01533	-0,0319	-0,03455
AGESA.E	-0,03752	0,005631	0,004355	0,091284	0,088644	-0,05857	0,00806	0,010537	-0,00925	-0,05721	-0,03631
AGHOL	0,001093	-0,0491	0,004103	0,033413	-0,03374	-0,00709	0,000586	-0,00736	0,006325	0,009129	0,00161
AKBNK	0,001651	-0,00355	0,014746	-0,0189	-0,00177	0,003683	-0,01803	0,011967	-0,01725	0,001113	-4,7E-05
AKCNS	0,016339	0,005994	0,007121	0,005493	0,004313	-0,00831	-0,00152	0,008215	-0,01643	-0,00711	0,013613
AKENR	0,009794	-0,002	0,011089	0,011171	-0,00273	-0,00562	0,017685	-0,01236	0,011482	0,002265	0,016452
AKGRT	0,042937	-0,04399	0,014672	-0,01525	-0,02072	-0,0343	0,014301	-0,02648	0,049007	-0,02648	-0,00724
AKSA	-0,01057	-0,01722	-0,0056	-0,01811	0,000976	0,002288	-0,00446	-0,00389	-0,00852	0,006848	0,059497
AKSEN	0,009721	-0,00763	-0,00718	-0,00344	-0,01108	0,013153	0,007241	-0,00325	-0,00656	-0,01904	0,001158
AKSGY	-0,04418	0,007956	-0,02282	0,026652	-0,0001	-0,02103	0,024591	-0,00701	-0,03799	0,000835	-0,04958
ALARK	0,065544	-0,01267	0,021157	0,040364	0,008625	0,042791	0,031892	0,028427	0,010099	0,05177	0,05085
ALBRK	0,016034	-0,00179	-0,00027	0,01721	-0,00816	-0,02784	0,001292	-0,00759	-1,3E-05	-0,00936	-0,01171
ANHYT	0,015804	-0,02611	-0,02918	0,028974	0,018783	-0,00348	-0,01472	-0,01936	-0,00781	-0,00626	-0,01329
ANSGR	-0,01279	0,004016	0,00106	-0,00363	-0,00089	0,01026	-0,00506	0,005677	-0,00412	-0,0156	0,008692
ARCLK	0,001704	-0,01318	0,002443	0,004846	0,01561	-0,01214	0,01017	0,003804	0,002926	0,010621	-0,0218
ASELS	-0,01166	0,002175	-0,00054	0,005157	-0,01381	0,006247	0,000446	-0,00044	0,00516	-0,01141	0,014103
ASUZU	-0,01181	-0,02101	-0,01287	-0,00475	0,008063	0,015259	0,010552	-0,01647	-0,00866	0,000488	0,00478
AYDEM	-0,01526	-0,01778	-0,00365	-0,00052	-0,00122	-0,0007	-0,01859	0,013866	0,007197	0,024182	0,00732
AYGAZ	0,011663	0,006225	-0,0306	-0,00138	0,030923	0,000824	-0,02649	0,009638	0,006018	-0,00487	-0,01836
BIMAS	0,052012	-0,02994	-0,02263	-0,01123	0,005811	0,001817	-0,01228	-0,00066	0,007441	0,03679	-0,03249
BIOEN	-0,0428	0,022004	-0,01275	-0,03743	-0,02086	0,042583	0,004961	0,037379	0,025327	0,034436	0,073278
BIZIM	0,107331	-0,06613	-0,02982	-0,00174	0,008646	-0,01169	0,009193	-0,02265	0,0202	0,097466	-0,06574

BRISA	0,038071	-0,01887	-0,00659	-0,00456	-0,00473	0,010764	-0,00683	0,003228	0,001854	0,000444	-0,00434
CCOLA	0,03245	-0,01075	-0,02395	-0,25848	0,364805	0,001634	-0,00488	-0,02282	-0,00673	0,003965	-0,00111
CIMSA	-0,00514	-0,00832	-0,01775	0,022622	-0,00488	-0,0049	0,003633	-0,00512	0,000412	-0,00389	-0,02045
DOAS	0,012099	-0,02319	0,013692	0,012198	0,010643	0,001836	-0,01045	-0,00298	-0,0065	0,003383	0,004978
DOHOL	0,004215	-0,0111	-0,00054	-0,01047	0,002062	-0,025	0,000446	0,008296	0,00516	0,029663	-0,0484
ENJSA	-0,01914	-0,00067	0,03271	-0,01901	-0,01136	0,023639	-0,0168	-0,00149	0,003545	0,010265	-0,00788
ENKAI	-0,00257	-0,02889	0,002959	-0,01124	-0,00291	0,005195	0,009313	0,009074	0,016759	0,002265	-0,00519
EREGL	-0,00441	-0,0039	-0,01482	-0,03107	-0,00629	0,013709	-0,01437	0,008296	-0,00236	0,00498	-0,01597
ESEN	-0,00297	-0,0207	-0,00634	-0,01512	0,007895	0,018584	-0,01127	-0,04166	-0,00807	0,002241	-0,01943
FROTO	-0,01166	-0,0111	-0,00054	0,005157	-0,01381	0,006247	0,000446	0,008296	0,00516	-0,0026	0,014103
GARAN	0,000191	0,002789	-0,17559	0,226755	0,006833	-0,01165	0,007567	-0,00898	0,001366	0,041114	-0,00515
GLYHO	-0,00533	0,002193	-0,01677	-0,02329	-0,00168	0,008311	-0,01139	-0,03933	-0,00989	-0,00223	0,008015
GWIND	0,014558	-0,02775	-0,01675	-0,0208	-0,00572	-0,01435	0,002456	-0,00129	0,001386	-0,02	0,000548
HALKB	0,013499	0,006079	-0,00054	0,000332	0,009219	0,001507	0,000446	-0,00242	-0,00447	0,016846	0,003376
HTTBT	0,054351	0,011135	0,034076	0,014029	-0,00217	-0,01598	0,014892	0,030609	0,057603	0,017752	-0,1132
ISATR	-0,09929	0,029016	0,064852	-0,01215	0,056497	-0,00055	-0,02092	-0,0672	0,020365	-0,01111	-0,08941
ISBTR	-0,01594	-0,00956	0,009084	-0,00615	0,001634	0,106267	0,007567	0,001604	-0,01111	-0,04792	0,009316
ISCTR	-0,00079	0,005369	-0,00562	0,008775	0,001634	-0,00394	-0,02228	0,001604	0,004273	0,036953	-0,01846
ISDMR	-0,01943	-0,01639	0,015593	0,00319	0,007269	-0,00562	-0,0117	-0,02035	0,00474	-0,00226	0,011423
ISFIN	0,014015	-0,05235	0,074332	0,003271	0,004784	-0,02749	-0,03471	-0,00357	0,040257	-0,01528	0,009641
ISGYO	0,008725	-0,01539	0,003746	0,010375	0,021556	-0,01656	-0,02161	0,014285	0,00526	0,013702	-0,00893
ISMEN	0,052646	-0,04998	-0,00259	-0,02057	-0,02971	-0,0027	-0,00538	-0,00927	-0,02635	0,06594	0,00433
KCHOL	0,003218	0,001324	-0,0056	0,009804	0,005699	-0,00241	0,017968	-0,01775	-0,00384	-0,00131	0,005223
KERVT	0,003656	-0,01778	0,018664	0,031815	-0,01577	-0,02006	0,004955	-0,01813	0,004019	0,036099	0,007332
KLKIM	-0,01856	-0,00175	0,032893	-0,01129	0,006282	0,004393	0,011533	-0,01087	-0,00527	0,005976	0,055928
KMPUR	-0,01454	-0,00505	-0,02462	0,000298	0,003622	-0,0371	0,019307	0,020983	0,005869	0,031556	0,006882

KONTR	-0,05031	-0,00563	0,003481	0,102742	-0,14301	-0,01355	0,008443	-0,00713	-0,0108	0,020683	-0,0158
KORDS	-0,00982	-0,01478	-0,01345	-0,00232	0,020087	-0,0065	0,000446	-0,00277	-0,0023	-0,01763	0,004561
LOGO	0,001413	0,022312	-0,00519	0,022691	0,00323	-0,0169	0,020308	-0,0082	0,010814	0,011906	-0,03652
MAGEN	0,015166	-0,01321	0,025427	-0,02929	0,006894	-0,01253	0,00772	-0,0426	0,008497	-0,015	-0,04924
MAVI	-0,0231	-0,01879	-0,02944	0,008509	-0,00547	0,037396	-0,00877	0,010165	0,008443	0,045236	-0,04252
MGROS	0,01168	-0,01929	-0,0056	-0,01344	0,000976	-0,00236	-0,00706	-0,00129	0,011205	0,004302	0,040897
MPARK	-0,02907	0,02603	-0,01692	-0,00945	0,026912	0,020286	0,04811	-0,02295	0,027454	-0,00368	-0,05751
NATEN	-0,0088	-0,01384	0,001077	-0,02414	0,03071	-0,00445	-0,01335	-0,04595	-0,01367	0,012618	-0,02938
NUHCM	0,015068	-0,03162	0,042111	0,056253	-0,01749	0,001095	-0,0184	-0,00303	0,008981	-0,01554	0,013376
OTKAR	-0,00463	-0,00349	-0,00998	-0,00183	-0,00421	0,007514	0,031458	0,018118	-0,01065	-0,02792	0,012202
PETKM	-0,011	-0,00322	0,020012	0,004337	0,005828	-0,00892	-0,01603	-0,01162	-0,00825	-0,00437	0,03165
PGSUS	-0,03038	-0,00217	-0,01681	0,0113	0,009958	0,034272	0,045415	0,032921	-0,02042	-0,04127	0,069397
POLHO	0,003476	-0,01123	-0,00051	0,010926	0,043761	0,008465	0,01479	-0,03185	0,019323	-0,01813	0,003407
QUAGR	-0,01255	-0,007	-0,00627	-0,01672	0,038501	-0,01304	-0,0151	0,005001	-0,00214	0,007466	0,021026
SAHOL	0,001116	0,000137	-0,00058	-0,00114	0,005596	0,016895	-0,00911	0,018591	-0,00671	-0,00429	-0,003
SASA	0,002858	-0,01677	0,004202	-0,01531	-0,01305	0,009748	0,012318	-0,0387	-0,01433	-0,01436	-0,02063
SISE	0,005148	-0,00697	-0,00054	0,009272	0,006681	-0,0058	-0,00768	9,95E-05	-0,00724	0,001589	-0,00256
SKBNK	0,102152	-0,09275	-0,01789	-0,01311	0,001894	-0,00904	-0,00703	-0,02378	0,010281	-0,0059	0,006098
SMRTG	0,000852	-0,01255	0,00566	-0,01943	0,002414	-0,00368	0,008712	0,003691	0,018927	-0,00522	0,066921
SOKM	-0,00238	-0,00545	-0,02067	-0,00804	-0,00919	0,003363	-0,00205	-0,01855	-0,00792	-0,028	0,054081
SUNTK	-0,02425	-0,01535	0,011984	0,025053	0,09452	0,057339	0,015814	-0,01153	-0,00256	-0,03972	-0,00563
TATGD	-0,0014	0,005821	-0,01551	-0,02356	0,00532	0,007953	-0,00637	0,004866	-0,01722	-0,03252	0,006844
TAVHL	0,021401	-0,02834	1,75E-05	-0,0213	0,007386	0,022192	0,001001	0,02872	-0,00852	-0,00067	-0,00603
TCELL	-0,01493	-0,00406	0,010268	-0,00959	0,009427	0,002288	-0,00027	0,015583	-0,00034	-0,00533	0,005216
THYAO	-0,00641	0,012849	-0,00822	-0,00498	-0,00071	-0,00216	-0,00434	0,001604	0,026237	0,014569	-0,00481
TKFEN	-0,02565	-0,01936	-0,00742	-0,00951	0,015102	-0,02578	0,004119	-0,00878	0,013363	-0,00959	0,00278

TKNSA	0,025379	-0,01459	-0,0128	-0,04114	-0,02165	-0,09055	-0,40144	0,498553	-0,01906	0,014765	0,020762
TOASO	0,022714	-0,03255	0,013087	-0,01811	-0,01279	-0,01632	0,009754	0,007015	-0,0039	-0,01156	0,007935
TSKB	0,007317	0,013171	-0,02425	0,005344	0,024361	-0,01146	0,007567	0,001604	-0,01111	0,014226	-0,00132
TTKOM	-0,00583	0,004009	-0,00791	0,014299	0,014429	-0,00877	-0,00894	0,011842	0,006962	0,011205	-0,003
TTRAK	-0,01641	-0,01349	-0,00771	-0,01251	-0,01749	-0,00401	-0,00743	-6,2E-05	0,028337	-0,00136	-0,00729
TUPRS	-0,01057	-0,00154	0,000568	-0,00277	0,013061	-0,00667	-0,00145	0,002117	0,009386	0,012713	-0,0205
ULKER	0,010947	0,013779	-0,00148	0,011837	-0,01328	0,018612	0,007567	0,003829	-0,01611	-0,01324	-0,02498
VAKBN	0,006061	0,015493	0,003445	0,006556	-0,00121	-0,01087	-0,00891	0,000576	-0,00408	-0,002	-0,00747
VESBE	-0,01166	0,012711	-0,01216	-0,01837	0,010286	-0,01728	0,000446	0,008296	-0,00689	0,0096	-0,02204
VESTL	0,037734	0,188835	-0,01329	-0,02903	0,006317	0,027081	-0,04748	-0,0615	-0,00334	0,15427	-0,00132
VKGYO	0,047566	-0,00307	-0,01237	-0,02384	0,013751	-0,04404	0,009008	0,037416	0,038457	-0,00486	-0,00025
YKBNK	-0,0023	0,007373	-0,0056	0,005892	-0,00293	-0,0134	-0,00845	0,016111	-0,0046	-0,00878	-0,00697
YUNSA	-0,01753	-0,00335	-0,00372	-0,01533	0,003344	-0,0187	-0,00652	-0,00125	0,111145	0,000145	-0,03676
ZOREN	-0,01166	0,001247	-0,00054	0,005157	-0,00162	-0,0058	-0,01175	0,020642	-0,01923	-0,0026	0,001603

APPENDIX 1. 2: Abnormal Returns Panel Dataset t0 to t+10

Stock Ticker	0	1	2	3	4	5	6	7	8	9	10
AEFES.E	-0,03455	-0,00556	-0,00748	0,0364	-0,02065	0,000356	-0,00446	-0,00424	-0,02299	-0,00552	-0,0081
AGESA.E	-0,03631	-0,0247	0,03059	-0,03351	-0,03217	-0,02087	-0,0197	-0,02433	-0,00922	0,025433	0,080865
AGHOL	0,00161	-0,00655	0,032083	-0,01052	0,021524	0,024662	-0,02518	-0,00463	0,032587	0,020945	-0,01571
AKBNK	-4,7E-05	-0,01086	0,00281	0,00275	0,002149	0,02302	3,86E-05	0,005832	-0,00507	0,003716	-1E-04
AKCNS	0,013613	-0,02145	-0,00197	-0,0002	-0,04547	0,041405	0,030708	0,010552	-0,01847	0,003249	-0,00562
AKENR	0,016452	0,031882	-0,01976	-0,02178	-0,02374	0,051397	0,000336	0,173537	-0,05951	-0,00352	0,011989
AKGRT	-0,00724	-0,01943	-0,00253	0,035892	0,010568	-0,01825	0,002903	-0,02821	-0,01515	-0,03081	-0,04552
AKSA	0,059497	-0,04248	0,018311	-0,00577	0,00275	-0,00849	-0,0254	-0,00599	-0,00415	0,008765	-0,01031

AKSEN	0,001158	-0,0011	0,000776	-0,0099	-0,00746	-0,01202	0,007986	-0,02206	-0,03639	-0,01975	0,021445
AKSGY	-0,04958	0,017383	0,003486	0,003589	1,65E-05	0,020695	0,002827	-0,02071	0,002382	-0,03688	0,008697
ALARK	0,05085	0,00892	-0,01573	0,014799	-0,01802	-0,01672	-0,01543	0,01538	-0,00506	-0,00383	-0,02266
ALBRK	-0,01171	-0,0046	-0,0279	-0,00615	0,000361	-0,00799	-0,01157	0,003767	0,003674	-0,01354	0,008688
ANHYT	-0,01329	-0,00015	-0,00921	-0,00344	-0,00443	-0,00057	-0,00776	-0,00574	-0,01105	-0,00097	-0,00319
ANSGR	0,008692	0,025791	0,001936	0,014371	-0,00483	0,010899	-0,00319	-0,01016	0,002329	-0,0318	0,001558
ARCLK	-0,0218	-0,00185	0,002702	0,00612	-0,009	0,003403	-0,02931	-0,00992	-0,0081	0,024622	0,00042
ASELS	0,014103	0,003319	0,010797	0,027059	-0,01461	-0,00021	0,041553	0,044427	0,015534	0,026174	-0,01777
ASUZU	0,00478	-0,00408	0,278669	-0,41914	0,002806	-0,00395	0,018046	-0,00669	-0,01251	-0,00612	0,015463
AYDEM	0,00732	-0,01366	0,030919	-0,00876	0,004482	0,044444	-0,03064	-0,02065	-0,02192	-0,014	-0,00652
AYGAZ	-0,01836	-0,01316	0,007229	0,030782	-0,0055	-0,0389	-0,01415	-0,00111	-0,0164	-0,00898	-0,00289
BIMAS	-0,03249	-0,008	0,01326	-0,00215	-0,0029	-0,02299	-0,01503	0,00213	0,002302	-0,00955	0,002258
BIOEN	0,073278	-4,3E-05	0,000629	0,010727	0,023642	0,008716	-0,00121	-0,0268	0,00115	0,014994	-0,00979
BIZIM	-0,06574	-0,0148	0,024368	-0,02137	-0,01595	-0,02189	-0,01571	-0,01098	-0,01346	-0,01576	-0,00219
BRISA	-0,00434	-0,00314	-0,00812	-0,00941	0,025564	0,006032	0,004186	0,005564	-0,00743	0,000935	0,012661
CCOLA	-0,00111	-0,02026	-0,01181	0,040655	0,012362	0,009943	0,022223	0,004449	-0,01492	0,017007	0,007551
CIMSA	-0,02045	0,00026	-0,00198	-0,02003	-0,0064	0,003361	0,014728	0,005883	0,000824	-0,01184	0,027996
DOAS	0,004978	0,012497	0,030026	0,008187	0,006922	0,010676	0,024485	0,05931	-0,02708	-0,00155	-0,00922
DOHOL	-0,0484	0,003319	0,006352	-0,01852	0,033581	-0,00906	0,102079	-0,01714	-0,03062	0,010045	-0,00983
ENJSA	-0,00788	-0,0085	-0,00966	0,009806	0,015531	-0,01637	-0,00995	0,033278	0,026682	0,03168	0,031761
ENKAI	-0,00519	-0,00331	-0,00958	-0,01139	-0,01584	0,001167	0,005572	-0,00047	0,004689	0,009993	-0,01541
EREGL	-0,01597	0,018823	0,013986	-0,0367	0,01347	-0,01694	0,017952	0,029263	0,038262	0,024859	-0,00253
ESEN	-0,01943	0,069904	0,050356	-0,05844	0,063321	-0,02172	-0,02878	0,011086	-0,01401	-0,0128	-0,03362
FROTO	0,014103	0,003319	0,006352	0,031484	-0,01905	-0,00906	0,002079	-0,00199	-0,10947	0,010045	-0,00983
GARAN	-0,00515	0,003761	-0,01545	-0,00249	0,000212	0,007332	0,006722	-0,00024	-0,00172	0,000232	0,008719
GLYHO	0,008015	0,012464	0,026068	-0,01627	0,006843	0,020809	-0,02228	-0,01529	-0,01381	-0,00624	-0,01573

GWIND	0,000548	-0,00926	0,003704	0,004959	-0,04144	-0,02572	0,014591	-0,00776	-0,02915	0,017454	0,001558
HALKB	0,003376	0,005729	0,013564	-0,0067	0,013208	-0,00666	0,008075	0,015892	-0,01374	-0,01046	0,009875
HTTBT	-0,1132	-0,11143	0,018614	-0,008	-0,00623	-0,00334	-0,00256	0,025217	0,004683	-0,01018	0,014698
ISATR	-0,08941	0,082259	0,030198	-0,0034	0,193133	-0,03816	-0,07537	-0,02105	0,051257	-0,08184	0,057213
ISBTR	0,009316	-0,10712	0,008704	0,068246	-0,00146	0,010676	-0,0067	0,017416	0,003221	0,001766	-0,00131
ISCTR	-0,01846	0,004997	-0,01946	-0,00213	0,013242	-0,00382	0,008005	0,009287	0,003221	-0,00412	-0,00131
ISDMR	0,011423	0,023945	-0,01301	-0,00397	0,004525	-0,00891	-0,00823	-0,0018	-0,00823	0,00141	-0,00891
ISFIN	0,009641	0,008314	-0,01841	-0,01328	-0,03452	0,022251	0,014622	0,013195	0,095362	-0,00418	-0,00531
ISGYO	-0,00893	-0,02073	0,030954	-0,02064	-0,01916	0,324365	-0,51457	0,000515	0,01241	0,014746	0,003022
ISMEN	0,00433	-0,04212	0,019151	-0,01125	-0,00385	0,02355	-0,01723	0,021913	-0,01182	0,008248	-0,00453
KCHOL	0,005223	0,003526	0,008866	0,012105	-0,01013	0,001	0,014559	0,001918	-0,01648	-0,00032	0,003434
KERVT	0,007332	0,001546	-0,01501	-0,0169	-0,03823	0,003778	0,000336	-0,0046	-0,00457	-0,00096	-0,02279
KLKIM	0,055928	-0,02663	0,007002	0,037279	-0,02021	0,004552	-0,00157	-0,01297	0,046558	-0,01181	0,001281
KMPUR	0,006882	0,023494	-0,01496	0,018762	-0,0194	-0,02406	-0,0138	-0,01345	0,001701	0,004792	0,008709
KONTR	-0,0158	-0,00535	0,035176	-0,03385	-0,01827	0,034813	-0,00889	-0,02685	-0,01637	0,02052	-0,02624
KORDS	0,004561	-0,00246	-0,06535	-0,01862	-0,00147	-0,02202	-0,00667	0,055409	0,00092	-0,01114	0,009651
LOGO	-0,03652	-0,01469	0,006718	-0,0174	0,016588	-0,00878	-0,01907	-0,0097	0,014634	0,035436	0,056509
MAGEN	-0,04924	0,069341	0,010853	0,010589	0,016732	-0,01923	0,009295	0,003416	-0,00557	0,009273	0,017114
MAVI	-0,04252	-0,02185	-0,01311	-0,00921	0,014299	-0,01113	-0,02426	-0,00346	-0,00315	-0,01187	0,01017
MGROS	0,040897	-0,00713	0,034836	-0,00331	0,017001	-0,00849	-0,02782	-0,00842	-0,01096	0,029843	-0,02183
MPARK	-0,05751	0,007809	0,067953	0,011203	-0,01685	-0,00975	-0,01585	-0,00951	-0,0055	-0,02436	-0,01755
NATEN	-0,02938	0,070442	0,112823	-0,0671	0,078032	-0,01505	-0,04463	0,018375	-0,02272	-0,01546	-0,02331
NUHCM	0,013376	0,028367	0,006832	0,018813	0,013302	0,313676	-0,48095	0,011889	-0,0118	0,00554	-0,01072
OTKAR	0,012202	0,003319	0,010162	0,001755	-0,00927	0,055496	0,023911	0,033622	0,032726	0,021312	-0,03156
PETKM	0,03165	0,054104	0,030364	0,049593	-0,0143	0,035537	0,032546	-0,00538	-0,0237	0,043318	-0,04297
PGSUS	0,069397	0,013058	-0,01251	-0,00232	0,008503	-0,00675	-0,00315	-0,00459	-0,01892	-0,00534	-0,01638

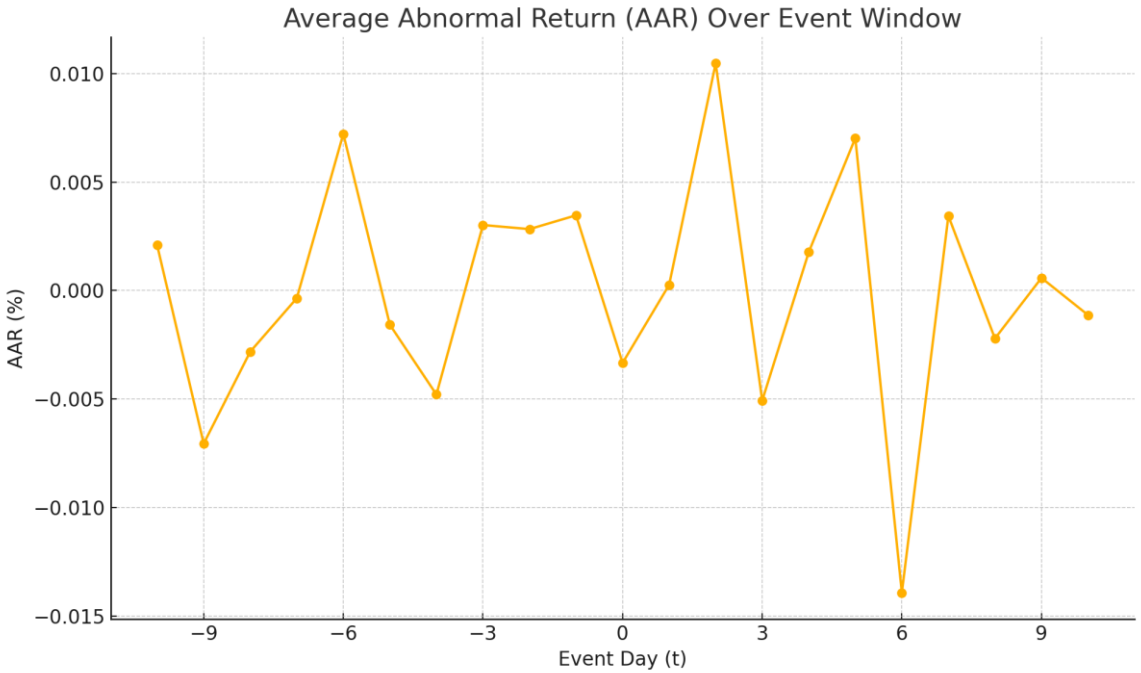
POLHO	0,003407	0,034203	-0,01019	0,007865	0,019094	-0,01414	0,017273	0,011765	0,000824	0,011003	0,007191
QUAGR	0,021026	-0,02056	0,056693	-0,03573	-0,00164	-0,01902	-0,01198	-0,00484	0,023943	0,035859	-0,0494
SAHOL	-0,003	-0,00726	0,006361	-0,00186	0,019227	-0,02164	0,003275	0,01385	-0,00599	4,75E-05	-0,01073
SASA	-0,02063	-0,00286	-0,00022	0,000393	-0,00955	-0,01541	-0,02449	-0,02067	-0,02513	0,002038	-0,01226
SISE	-0,00256	0,007556	-0,00209	0,005952	0,011518	-0,00059	-0,00212	0,006452	-0,00539	0,022865	-0,01827
SKBNK	0,006098	-0,01671	0,001657	0,019466	-0,04768	0,024816	-0,00447	-0,01221	-0,01484	-0,00286	0,021453
SMRTG	0,066921	-0,07112	-0,00684	0,007842	0,005209	0,00164	-0,00552	0,019374	-0,00215	-0,00393	0,001267
SOKM	0,054081	-0,02106	0,000205	0,001821	0,002253	-0,00063	0,009186	-0,01376	0,006102	-0,01066	0,00124
SUNTK	-0,00563	0,096578	-0,00556	-0,00089	-0,03481	0,012578	-0,05129	-0,02039	0,038287	-0,01269	0,049746
TATGD	0,006844	-0,00765	0,011897	0,002072	-0,002	-0,00161	0,005776	-0,01488	0,009937	-0,01622	-0,00405
TAVHL	-0,00603	0,000389	0,023717	0,015732	-0,0183	-4,1E-05	-0,02844	0,002412	0,001155	-0,00706	-0,00265
TCELL	0,005216	0,016346	0,014235	-0,01396	0,00275	-0,00436	-0,01307	-0,00599	-0,00144	0,024959	-0,00633
THYAO	-0,00481	0,005044	0,016313	0,004811	-0,00581	0,003034	0,0021	0,00679	-0,00324	-0,01586	-0,00688
TKFEN	0,00278	0,033474	0,002395	-0,00034	0,004967	0,007482	0,015735	0,001064	0,009452	-0,00531	-0,01075
TKNSA	0,020762	0,011448	-0,01745	0,004592	-0,00445	-0,00326	-0,00223	-0,00378	0,001524	-0,00588	-0,01378
TOASO	0,007935	0,005527	0,054249	0,001768	0,052151	-0,02846	0,000807	0,053583	-0,02824	-0,02004	0,032061
TSKB	-0,00132	0,012216	-0,00182	-0,00891	-0,00146	-0,00019	0,004289	-0,00521	0,014091	-0,00059	0,020425
TTKOM	-0,003	-0,00318	0,029373	-0,01015	-0,01044	0,020464	-0,0189	0,004761	-0,01053	0,008765	0,002536
TTRAK	-0,00729	-0,00887	0,010182	0,006049	-0,00861	-0,02198	0,005132	0,006709	0,024155	-0,00961	-0,0046
TUPRS	-0,0205	-0,01036	0,02136	0,027661	0,023338	-0,00273	-0,0168	-0,00599	-0,00699	0,017312	-0,00749
ULKER	-0,02498	-0,02205	-0,00872	-0,00366	0,014816	0,007816	-0,00154	0,033607	0,010914	-0,00456	-0,01681
VAKBN	-0,00747	-0,01056	-0,02086	0,015809	-0,01603	0,00108	0,019629	0,012149	0,009215	0,002171	0,00075
VESBE	-0,02204	0,003319	-0,00615	-0,00649	-0,00589	0,016912	0,002079	-0,01464	0,015534	-0,0156	-0,00983
VESTL	-0,00132	-0,01359	-0,01073	-0,00966	0,030068	-0,00897	0,00889	-0,0074	0,009815	0,040734	-0,01826
VKGYO	-0,00025	0,004095	-0,00354	-0,01277	0,01247	0,00176	-0,01675	-0,00454	-0,00454	-0,00186	-0,01671
YKBNK	-0,00697	0,004394	-0,00588	0,006623	-0,00949	-0,00436	0,015758	0,001913	0,007616	0,001013	0,005313

YUNSA	-0,03676	-0,01444	0,018556	-0,00352	-0,00685	0,004109	-0,00598	-0,01406	0,012784	-0,00089	-0,00062
ZOREN	0,001603	0,003319	0,01901	-0,01852	0,007266	0,003759	-0,01058	0,010834	0,002876	-0,00278	0,016145

APPENDIX 2: Cumulative Abnormal Returns t-10 to t+10

Ticker	CAR	Ticker	CAR	Ticker	CAR	Ticker	CAR	Ticker	CAR
AEFES.E	-0,12938	BIMAS	-0,04603	ISCTR	0,015418	PGSUS	0,043812	TUPRS	0,03367
AGESA.E	-0,01796	BIOEN	0,148141	ISDMR	-0,05672	POLHO	0,127315	ULKER	0,007301
AGHOL	0,028171	BIZIM	-0,06266	ISFIN	0,090944	QUAGR	-0,02749	VAKBN	0,010947
AKBNK	-0,00209	BRISA	0,035287	ISGYO	-0,17392	SAHOL	0,012788	VESBE	-0,06783
AKCNS	0,020464	CCOLA	0,141332	ISMEN	-0,04157	SASA	-0,21217	VESTL	0,279154
AKENR	0,198075	CIMSA	-0,03097	KCHOL	0,030805	SISE	0,017892	VKGYO	0,015364
AKGRT	-0,16406	DOAS	0,129948	KERVT	-0,0626	SKBNK	-0,08042	YKBNK	-0,00076
AKSA	-0,07152	DOHOL	0,024549	KLKIM	0,092749	SMRTG	0,012081	YUNSA	0,000575
AKSEN	-0,10536	ENJSA	0,09807	KMPUR	-0,02102	SOKM	-0,07012	ZOREN	0,006799
AKSGY	-0,12119	ENKAI	-0,03981	KONTR	-0,15619	SUNTK	0,177241		
ALARK	0,2805	EREGL	0,034231	KORDS	-0,10624	TATGD	-0,08251		
ALBRK	-0,08746	ESEN	-0,07153	LOGO	0,086125	TAVHL	0,002754		
ANHYT	-0,10318	FROTO	-0,09641	MAGEN	0,023659	TCELL	0,021403		
ANSGR	-0,00548	GARAN	0,092329	MAVI	-0,09192	THYAO	0,029917		
ARCLK	-0,01591	GLYHO	-0,11483	MGROS	0,013742	TKFEN	-0,01254		
ASELS	0,131717	GWIND	-0,15878	MPARK	-0,00317	TKNSA	-0,07505		
ASUZU	-0,17394	HALKB	0,072662	NATEN	-0,01776	TOASO	0,088679		
AYDEM	-0,04146	HTTBT	0,024569	NUHCM	-0,05424	TSKB	0,058283		
AYGAZ	-0,07949	ISATR	0,064336	OTKAR	0,148057	TTKOM	0,040995		
BIMAS	-0,04603	ISBTR	0,038219	PETKM	0,157531	TTRAK	-0,06087		

APPENDIX 3.1: Average Abnormal Return (AAR) Plot



APPENDIX 3.2: Cumulative Average Abnormal Return (CAAR) Plot

