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Karolina Rusecka

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ŽALIEJI FINANSAI IR DARNAUS VYSTYMOŠI TIKSLAI	GREEN FINANCE AND SUSTAINABLE DEVELOPMENT GOALS
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Supervisor Prof. Dr. Jelena Stankevičienė

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Introduction

Relevance of the topic. Green finance and the Sustainable Development Goals (SDGs) are two key interconnected issues that are playing an increasingly important role in the global discourse on the future of the economy, the natural environment and social sustainability. In times of growing ecological, economic and social challenges, the development of these areas is not only timely, but also necessary to ensure long-term stability and prosperity in the world. In theory, financial mechanisms such as green bonds, environmental loans or investment funds should contribute to the reduction of greenhouse gas emissions, protection of natural resources and economic growth in line with the principles of the SDGs. In practice, however, the effectiveness of these tools varies and depends on a number of factors, including the level of economic development, available financial resources, the regulatory system and the involvement of the public and private sectors. One of the key problems is the lack of consistent international standards defining what exactly constitutes a "green" investment, which leads to the so-called greenwashing, i.e. a situation in which projects promoted as ecological do not bring real environmental benefits. Moreover, regional differences in the approach to financing pro-ecological projects mean that green finance is developing unevenly. The Baltic and Scandinavian countries, although geographically close, differ in the level of advancement in the implementation of green finance. These problems are exacerbated by insufficient data on the effectiveness of investments and difficulties in measuring their actual impact on the SDGs. Analyzing these issues in the context of comparing the Baltic and Scandinavian countries will allow us to understand key barriers and potential solutions that can increase the efficiency and scale of green investments in Europe. The purpose of problem exploration is not only to identify existing difficulties, but also to identify best practices that can be adapted in various economic and regulatory conditions.

The level of exploration of the topic. Green finance is widely discussed in the academic literature and reports of international institutions, yet significant research gaps remain regarding the relationship between the development of the green instruments market and measurable progress in achieving selected SDGs. A particular research challenge is the operationalization of "impact" and limited data comparability, which hinders a clear assessment of whether increased green finance market activity translates into environmental and energy outcomes. Therefore, an approach based on the selection of specific SDG indicators and triangulation of data sources is justified to minimize the risk of misinterpretation and increase the credibility of conclusions.

Research problem. In the face of dynamically changing environmental and regulatory conditions, a key research problem is to determine the extent to which green finance contributes to the implementation of the SDGs and what factors influence their effectiveness in various

economic contexts. National strategies for financing environmental projects differ significantly between the Baltic and Scandinavian countries, despite their geographical proximity. The research problem is to analyse these differences and identify which green finance mechanisms may be more effective in a given regulatory and institutional environment. An important aspect of the problem is the assessment of how national climate policies, access to capital and the degree of involvement of the public and private sectors affect the development of green investments. Additionally, it is important to examine whether green finance can minimize the risk of greenwashing by using common reporting and evaluation standards for ecological projects.

Research objectives:

1. Identification and analysis of key green finance mechanisms used in the Baltic and Scandinavian countries.
2. Comparison of the level of implementation of financial instruments supporting sustainable development in both regions.
3. Identifying best practices that can be transferred between regions to increase the effectiveness of green finance.
4. Exploring the impact of differences in national climate and regulatory policies on the effectiveness of green investments.

Research aim. Comparing the effectiveness of green finance instruments in two European regions – the Baltic and Nordic countries – and examining how these financial mechanisms can support the implementation of SDGs. The aim of the work is also to indicate what financial policies can be transferred between regions to increase the effectiveness of green investments and their contribution to global activities for sustainable development.

Research methods. The study used a mixed-methods approach that combines qualitative and quantitative methods to obtain a more complete picture of the effectiveness of green finance in two European regions.

Research novelty: The novelty of this work lies in combining two geographical perspectives - the Baltic and Nordic countries - to compare their approaches to green finance and assess their impact on the implementation of the SDGs. An additional element of novelty is the use of a mixed research methods approach, which allows for the inclusion of both quantitative and qualitative data. This makes it possible to present comprehensive recommendations regarding the transfer of best practices between regions and their potential application on a wider scale in other parts of Europe.

The paper layout. The thesis paper consists of an introduction explaining the context of the study, the research problem and the objectives of the work. Next, literature review and theoretical foundations of green finance. There will also be a comparative empirical analysis and interpretation of analysis results. The last part of the thesis paper includes conclusions and recommendations.

1. Literature review on Green finance and Sustainable Development Goals

Green finance plays a key role in solving global challenges related to sustainable development, especially in the context of achieving the SDGs by 2030. The financial sector's ability to direct investments into projects with a positive environmental and social impact is essential to combating climate change, promoting clean energy and supporting inclusive economic growth. This literature review focuses on key issues related to green finance, covering financial mechanisms, regional studies, emerging challenges, and innovative trends supporting sustainable development. The review begins with an analysis of the basic concepts and evolution of green finance, and then moves on to discuss the mechanisms related to the implementation of the SDGs. In addition, case studies from different regions are presented, highlighting the successes and barriers encountered when implementing green finance initiatives. The review also examines key challenges such as greenwashing and regulatory inconsistency, and explores innovative digital approaches, including Green Digital Finance (GDF) and fintech solutions. The comprehensive analysis will provide a theoretical foundation and context for assessing the effectiveness and future potential of green finance, with a particular focus on the Baltic and Nordic countries.

1.1. Basics and Mechanisms of Green Finance in the context of implementing the SDGs

Green finance is an increasingly important mechanism for supporting sustainable development, combining green activities with economic inclusion initiatives, making it a key element in achieving the SDGs. Green finance refers to financial products and services that promote socially responsible and environmentally sustainable practices, such as investments in renewable energy, green infrastructure, and new technologies (Lindenberg, 2014). In this context, various green finance instruments are distinguished, including: green bonds, green investment funds and loans related to environmental goals (Zadek and Flynn, 2013). The article highlights the differences between climate finance and green finance. First, it focuses on combating climate change through adaptation strategies and reducing greenhouse gas emissions, while green finance covers a broader range of activities, including financing both public and private sustainable projects (United Nations, 2014). Increasingly, green finance is also seen as part of a broader

approach known as sustainable finance, which also takes into account social and governance aspects (Hayes, 2023).

In the context of an inclusive economy that aims broadly at social justice and the reduction of inequalities, green finance has the potential to drive economic growth in an economically inclusive manner. Inclusive economy models assume that development should be based on access to resources and opportunities for all social groups, in particular for marginalized people. The key pillars of an inclusive economy include inclusive growth, circular economy, development based on real progress, and inclusive policies and institutions (Van Niekerk, 2022). Green finance supports these pillars by financing projects that increase access to clean energy, create jobs and support entrepreneurship in ecological areas such as sustainable agriculture and renewable energy sources. Examples include investments in solar or wind energy in rural communities, which not only reduce energy poverty but also generate local employment (PWC, 2013). Moreover, ecological microfinance enables small businesses and farmers to access funds to develop their businesses in a sustainable manner (Bahl, 2012).

The concept of a circular economy, in which reusing raw materials and minimizing waste plays a key role, is also significantly related to green finance. Investments in business models that promote recycling, remanufacturing and reducing waste are an example of how green finance can support the transition to a sustainable economy (OECD, 2017). Green bonds and loans for this type of projects contribute to economic development that is not dependent on the exploitation of non-renewable resources. Green finance also plays an important role in achieving the Sustainable Development Goals. Investments in sustainable infrastructure and technologies can support goals related to poverty reduction (SDG 1), access to clean energy (SDG 7) and the promotion of sustainable economic growth (SDG 8) (United Nations, 2014). For example, green funds can finance projects that increase access to drinking water in water-stressed regions, contributing to improving the health and quality of life of local communities (Wang and Zhi, 2016). Another important aspect of green finance is its impact on the development of local labor markets. Renewable energy projects, such as wind farms or photovoltaic installations, can generate new jobs, especially in regions with high levels of unemployment. Green investments are also important for promoting entrepreneurship, enabling innovative companies to access capital to implement environmental projects (Thomas, 2020).

Despite its many benefits, green finance faces challenges, such as the financial gap in financing green projects. To close this gap, it is proposed, among others: the development of specialized green banks, the involvement of non-bank institutions and the use of new financial technologies, such as blockchain, to finance ecological projects (Sachs et al., 2019). Fiscal and

regulatory incentives are also an important tool and can stimulate a greater share of private capital in financing green projects (Desalegn and Tangl, 2022).

The article conducts a theoretical literature analysis to explore the synergies between green finance and economic inclusion and how combining them can accelerate the implementation of the SDGs. The study aimed to answer the question of how green finance can become a tool to enable more inclusive, regenerative economic development that will benefit both marginalized communities and investors. The analysis consisted of a qualitative assessment and synthesis of available theories, models and research results from various sources, including scientific works, reports of international institutions such as the UN, the World Bank and OECD, as well as economic literature on social inclusion and financing of ecological projects.

The research methodology was based on a theoretical review using literature published after 2000, especially after 2014, when green finance began to be recognized as a separate field and gained importance in the context of the SDGs. This review was narrative and interpretive, rather than quantitative, due to the limited availability of comparative data on economic inclusion and assessment of progress towards the SDGs across countries. The author of the article emphasizes that the choice of a theoretical approach also resulted from the need to understand how new concepts, such as green finance, can fit into existing economic theories and contribute to the creation of more integrated economic models. The analysis uses five pillars of an inclusive economy that were developed by the author in previous research: inclusive growth, real economic progress, circular economy, collaborative economy and inclusive policies and institutions. These pillars are used as an analytical framework to assess potential mechanisms through which green finance can support different aspects of social and ecological inclusion. The analysis shows that green finance is a key instrument in building an inclusive economy. First, green finance can create jobs by investing in sectors based on sustainable practices, such as renewable energy sources, organic farming and green infrastructure. These investments not only increase employment, but also improve the quality of life of local communities by providing clean energy and improving sanitation (PWC, 2013). Secondly, green finance can support entrepreneurship by offering access to capital for small businesses and farmers who implement pro-ecological solutions (Bahl, 2012).

One of the most important conclusions was that green finance has the potential to reduce social inequalities by providing access to finance for marginalized groups. An example would be ecological microcredits, which allow small enterprises to develop in accordance with the principles of sustainable development (Alliance for Financial Inclusion, 2017). Green bonds and other financial instruments intended for ecological projects also play a key role, as they can generate benefits for local communities through their direct involvement in the implementation of

projects. Green finance also supports the transition to a circular economy, which involves minimizing waste and efficient use of resources. Financing projects based on the principles of the circular economy can increase the efficiency of the use of raw materials and reduce the negative impact of economic activity on the environment (OECD, 2017). An example is investment in recycling and reuse of materials, which not only contribute to environmental protection, but can also generate new jobs and economic benefits. The article also highlights that green finance can contribute to many of the SDGs, such as SDG 7, SDG 8 and SDG 12. Investments in renewable energy and sustainable infrastructure can improve access to basic services for marginalized communities, while promoting sustainable economic development (United Nations, 2014).

However, the author of the article point to certain challenges and barriers related to green finance. These include, among others: a financial gap in the financing of ecological projects, which requires the involvement of greater resources from both the public and private sectors (Desalegn and Tangl, 2022). Regulatory issues and the lack of appropriate analytical tools to assess the risk associated with ecological investments are also significant problems. The article proposes several solutions, such as the development of specialized green banks, greater involvement of central banks in promoting sustainable investments, and the use of new financial technologies, such as blockchain, to support transaction transparency (Niekerk, 2024)

Green finance, which at first was more considered as socially responsible investment, that depends on not funding into enterprises that destroy environment, with time evolved to more integrated approach. Nowadays, green finance, include broader actions like investments into renewable energy. Sustainable infrastructure and initiatives that promote social and economic equality (Scholtens, 2006).

In nowadays global challenges like climate change, poverty and social inequality, the role of the green finance in achievement of SDGs is becoming more crucial. The study conducted by Magdalena Ziolo, Iwona Bak and Katarzyna Cheba (2020) concentrates on the analyze of the relations between green finance and SDG in the context of European Union countries. World Bank and International Monetary Fund highlight that implementation of 17 SDG requires much more financial support. Traditional methods of financing, which are focused on the profit are not enough to cover all the needs of sustainable development, which centers on social and environmental issues. That is why it is crucial to integrate environmental, social and governance (ESG) framework in the process of financing and promoting innovations that could fasten realization of SDG.

The research uses taxonomic measure to examine data from Eurostat and European Commission. Statistics includes different aspects of sustainable finance (SF), such as expenses on environmental protection, education, health and agriculture. The authors analyze how those expenses correlate with some of the SDG, which helps to assess effectiveness of green finance. Models of sustainable finance defined by Schoenmaker (2017) were the base of the research. Different models were distinguished: from SF 1.0, which concentrates on maximization on profit to SF 3.0 which focuses on green finance. The result showed that these countries which more intensely use strategies of green finance more often reach their goals in scope of SDG. It proves that the change from financing model that is focusing on profit to model that takes into account ESG framework can highly promote and achieve SDG. Moreover, the model SF 3.0 leads to elimination of poverty, improvement of health, education and clean energy. From the study we understand that public policy and investment decisions should be concentrated on long-term benefits from sustainable investments rather than short-term financial profits. It is also comprehensible that there is a need for a further development and improvement of financial instruments, which will aid for sustainable development. It underlines the need for dialog between government, financial institutions, enterprises and citizens in order to create and implement useful financial strategies, which will help to hit global goals.

The study by Pathania and Kaushik (2024) focused on conducting a bibliometric analysis on the role of green finance in achieving the SDGs. The analysis was based on 494 scientific articles published over the last decade and obtained from the Scopus database. The study used various software to analyze publication trends, contributions from different countries, leading journals, most influential articles, most frequently used keywords and most cited authors. Key results showed that green finance plays a key role in achieving four of the seventeen SDGs: access to cheap and clean energy (SDG 7), industry, innovation and infrastructure (SDG 9), sustainable cities and communities (SDG 11) and action for climate (SDG 13).

The analysis of publication trends showed a dynamic increase in the number of publications after 2021, which is particularly visible after the global outbreak of the Covid-19 pandemic. It means that this topic is gaining importance and scientific interest is constantly growing. An analysis of the leading countries publishing research in this field found that China contributed most, publishing the most articles and receiving the highest number of citations. China and Pakistan together account for as much as 66% of the total number of publications in the surveyed database, which indicates the dominance of these countries in the field of green finance research. However, in India, there was a not enough of research in this field, which was attributed to the early implementation of green finance policies and limited public awareness of the topic.

The study revealed that green finance support several SDGs. In the case of SDG 7 on access to clean energy, green finance enables the development of renewable energy sources through the creation of green banks and investment funds. In the case of SDG 9, green financing stimulates the development of environmentally friendly infrastructure and technological innovation. SDG 11, regarding sustainable cities, points to the important role of green investments in the development of urban areas, improving living standards and increasing the resilience of cities. In the context of SDG 13, green finance supports initiatives that reduce greenhouse gas emissions and promote sustainable environmental practices.

The study has important managerial and theoretical implications. From a managerial perspective, it is suggested that financial systems need to be reoriented to support the green economy, especially through private sector investment in renewable energy and green infrastructure. The government can support green technologies through incubation and grant programs and financial institutions should facilitate the flow of funds from developed to developing countries. Theoretically, the study deepens understanding of the links between green finance and sustainable development, highlighting its impact on four key SDGs.

The conclusions suggest that the global promotion of green finance is crucial for sustainable development. The study shows that the number of scientific publications on green financing is constantly growing, which proves the growing importance of this topic. Future research may focus on the effectiveness of green bonds, the impact of the regulatory framework, and assessing the role of green financing in achieving specific SDGs. Green financing brings both financial and environmental benefits, supporting the transition to a low-carbon economy. Finally, the study highlights the importance of building an appropriate regulatory framework that support infrastructure development, builds investor confidence and promotes long-term investment strategies.

1.2. Regional and Global Applications

The Sustainable Development Goals 2024 report summarizes the current state of implementations of 17 global goals established under the 2030 Agenda and highlights the urgent need for immediate action in the face of delays and growing challenges. Even though a lot of countries reaffirmed its commitment to the goals at the 2023 summit, only 17% of the goals are on track, while almost half of them show only moderate or minimal progress and over 30% stagnate or regress. Covid-19 pandemic, armed conflicts, climate change and economic difficulties have deepened existing inequalities and led to the deterioration of many development indicators. In 2020-2022 years, the number of people living in extreme poverty increased to 712 million and

nearly 733 million people experienced hunger. The lack of progress in combating poverty is particularly felt in the poorest countries, which do not receive sufficient financial support, which mean that many of them may not achieve their 2030 targets. The pandemic has set the world back three years in terms of poverty reduction and has resulted in falling incomes for many families, especially in low-income countries. Moreover, The Sustainable Development Report 2025 highlights the need to better target capital flows and strengthen the financial architecture so that financing translates into measurable development and climate results (Sachs et al., 2025).

The progress in improving health have also been seriously disrupted. Life expectancy rates have fallen to decade old levels, and infectious diseases such as malaria, tuberculosis and HIV/AIDS remain a serious threat, particularly in regions of sub-Saharan Africa and Asia. While the number of deaths among children under five years of age has reached record lows, the rate of decline is not sufficient to meet the SDG of reducing child mortality. The report highlights the need to strengthen health systems and ensure universal access to health services, especially in the poorest and most vulnerable regions. Lack of access to modern contraceptive methods and high rates in teenage pregnancy in some regions of the world remain a problem, making it difficult to improve the quality of life of women and girls.

In education the pandemic has caused major losses in basic skills such as reading and numeracy. In many countries, especially developing ones, there have been decline in students competency levels, which may impact future productivity and social development. Gender equality also remains unachieved, although gaps in access to education have been reduced in some regions. Women continue to be discriminated in the labor market and in many countries remain exposed to violence and limited career opportunities.

The threats posed by climate change are growing rapidly. The world experienced its warmest year on record, with greenhouse gas emissions reaching record levels. Progress in reducing biodiversity losses and protecting the environment is insufficient, requiring immediate action to transition to more sustainable energy and agricultural systems. In many regions, especially in Africa and Asia, agriculture is still vulnerable to climate change, which affects food security. Despite some successes, such as increased government spending on agriculture and increased access to water and energy, more sustainable solutions are needed to protect future generations from food crises.

The report emphasizes that international cooperation and increased financing for SDGs are key to reversing negative trends. Developing countries struggle with huge financial shortfalls, amounting to approximately 4 trillion dollars per year, which hampers the implementation of many

development projects. It is necessary to reform the financial system, which will ensure more fair distribution of funds and increase the representation of developing countries in global economic decisions. The report also calls for greater involvement of the private sector and international organizations in creating innovative financial solutions.

Despite major challenges, the report points to some successes, such as reduced AIDS related deaths, improved internet access and an increase in the number of girls completing primary and secondary school. The successes show that it is possible to accelerate progress if coordinated and bold actions will be taken. UN Secretary General António Guterres calls for immediate action to end conflicts, increase investment in infrastructure and support the poorest social groups. Time for action is limited, but there is still a chance to achieve the 2030 goals if all stakeholders mobilize. Without decisive action, the world will not be able to fulfil the promise to future generations to eradicate poverty, protect the planet and provide decent living conditions for all.

The analysis of the data conducted in the research had as a goal to find out how green finance and especially green bonds influence sustainable economic development. The data was used from sources, such as Climate Bonds Initiative, The Organization for Economic Cooperation and Development (OECD) and governmental reports, to investigate the relationship between issue of green bonds and environmental and economic indicators (Climate Bonds Initiative, 2021). The study concentrated on developed countries such as Germany, France, USA or Japan, however, developing countries, which play important role in the green finance field, were taken into consideration.

The research results showed significant regional differences in the progress of green finance market. Europe, North America and Asian-Pacific region dominate in terms of green bonds emission, which correspond for more than 80% of global emissions (Climate Bonds Initiative, 2021). In these regions growth is backed by advanced financial infrastructure, government regulations and growing interest from investors. In the developing countries, like India and Brazil, green bonds market, are just start getting build, because of financial barriers, lack of regulations and limited access to international capital. Even though developing countries have much more challenges, they still have a lot of potential do better results in the future due to the growing need for renewable energy sources.

The results of study revealed few challenges, which make difficult to fully use the potential of green finance. The biggest issue is that there are no uniform standards and definitions regarding green bonds, which leads to uncertainty and risk of greenwashing (Zhang et al., 2022). Greenwashing – falsely portraying that the project is ecological, when in reality it does not bring

any environmental advantage. Different standards between regions, like for example European taxonomy of green finance or green bond principles used in other parts of the world, lead to market fragmentation and make it more difficult for investors to evaluate influence of financial projects (ICMA, 2021).

Apart from the benefits for environment, green bonds also contribute to positive economic effects, such as employment growth in renewable energy sector and low-emission technologies. As an example in United States of America means from green bonds backed progress of more than 200 thousands workplaces in the wind and solar energy sectors in the last 5 years. Similar effects were noted in Europe, where investments into energy infrastructure increased local economic activity, in particular in rural regions, where new wind and solar power plants are being built. The whole research confirms, that green bonds are an efficient tool that supports sustainable economic and ecological development. Their impact on decrease of CO₂ emissions, rise of shares of renewable energy and creation of working places shows, that can play a crucial role in global energy transformation. However, to reach the potential it is important surmount existing barriers.

The research (Sadiq et al., 2023) uses different economic and financial indicators for evaluation of quality of environment, especially in the context of CO₂ emissions in the region of the Association of Southeast Asian Nations (ASEAN). Growing fossil fuel consumption has a big impact on the natural environment, researchers analyze, how green financing, eco-innovations and creativity can support goals of sustainable development by reduction of CO₂ emissions. In the analysis the statistics of 20 developing countries were used, data taken from 2011 till 2019. To study dependencies between variables, continuously updated full modified (CUP-FM) and continuously updated bias-corrected (CUP-BC) were used, that deal with the problems of the endogeneity, heteroscedasticity and cross-sectional dependence that often occur in panel data.

Green financing, consisting of loans and bonds, lets enterprises to invest into ecological technologies and modernize production processes, what reduces emissions and improves relations between stakeholders. Similarly production of renewable energy, contributes to absorption of carbon dioxide from atmosphere, improving quality of natural resources. (Mahmood et al., 2022) Eco-innovations enable effective usage of waste and switching to technology friendly for environment, what lets reach health and environmental purposes. (Toha et al., 2020)

Creativity in the organizations helps in adjustments to technological changes and market requirements. Workers with high innovation skills can generate new ideas and solutions, what allows for companies to minimize negative impact on environment and boost business effectiveness. (Chang i Chen, 2020) Even though economic growth, stimulates investments into

ecological technologies, simultaneously generates additional CO₂ emissions, which requires appropriate policies and environmental management strategies. (Ehigiamusoe and Lean, 2019)

To conclude, the study suggest the importance of long-term regulations supporting green projects and increase of ecological bonds. It is also important to promote energy effectiveness and eco-innovations in industrial and energy sectors. In the ASEAN region, where CO₂ emission is an serious problem, these strategies can contribute significantly to sustainable development. (Sadiq et al., 2023)

Green finance on in other words, financing of ecological and low emission projects, is an important element of sustainable development, which has a goal to minimize negative environmental effects and promote economic growth in line with environmental protection principles. The research (Fu et al., 2023) shows that investments like development of renewable energy or projects of carbon neutrality, demand special regulations and finance cooperation, which include among others climate funds and need to report ESG. In this contest it is crucial to have precise definition, standardization of the processes and taking into account social equality in financial policies. Transparent allocation of resources lets to successfully monitor effects of green investments. The major role is played by institutional investors, who thanks to their position can influence the decisions of enterprises related to their environmental and social results. Next analysis shows that there is a need to intensify impact on research and development (R&D) investments, specifically those that are related to technology that reduces emissions and more sustainable production processes.

Green finances together with the fiscal policies, like ecological tax, can additionally stimulate innovations in the field of clean technologies and lessen the dependence on fossil fuels. As an example, green bonds of climate funds support projects from the scope of renewable energy, low-emission infrastructure and protection of natural resources. However, research shows that the effectiveness of these mechanism depends on level of engagement of the private sector and development of international cooperation. Integration of ESG elements is crucial not just for improvement of investments results, but also for better management of environmental and social risks. In the global context green financing is an important tool to fight extreme weather phenomena, that can have an impact on investor decisions and stability of financial markets. Recommendations resulting from the study include strengthening international cooperation for support of specific regions that are exposed to climate change and to promote investments for long-term social and environment benefits.

For the future, scientists, suggest increasing the scope of research on new financial technologies, that can improve transparency and effectiveness to finance green projects. It is also important to find more elastic and adaptive financial models, that take into account changing market and environmental conditions. In the social context green financing should put more emphasis on the inclusivity, ensuring accessibility to resources also to marginalized communities. Green finance is not only an investment tool, but also an element of global strategy for protection of environment and economic stability, requiring the involvement of many entities from investors, by financial institutions to political decision makers. (Fu et al. 2023)

Impact investing is a key pillar of green finance, which simultaneous goal is to reach positive financial results and social and environmental benefits. Increasingly more investors are accepting lower rates of return in exchange of generating long-term intangible benefits, like improving air quality, reduction of CO₂ emissions or improvement of social situation in disadvantaged regions (Barber et al. 2021). In the face of growing difficulties related with climate change and global environmental crisis, impact investing becomes an important financial tool, which lets to implement projects orientated on transformation of ecology and society.

The study highlight the role of big financial institutions, which thanks to owned assets and impact on enterprises, can promote more responsible approach for natural resources management. Those institutions press enterprises, so that they would implement environmental policies and heighten standards in the corporate social responsibility (Dyck et al. 2019). Effects of these are better scores of enterprises in the environment security, smaller emissions of CO₂ and better relationship with stakeholders. An example can be growing popularity of green bonds, which lets enterprises raise capital on environmental projects and together attract long-term investors (Flammer 2021).

One of the challenges in impact investing is a difficulty in precise measurement of its effects and variety of investments forms. Not all projects are impactful, limited standardization and lack of transparency in the result reporting can lead to difficulties to compare the effectiveness of different initiatives. That is why experts propose further research on development of regulations, monitoring tools and assessment of the actual impact of investments on environment and society (Chen et al. 2020).

The study on impact investing shows on growing factors of ESG in investment strategies. Investors more often expect, that enterprises not only will generate profit, but will operate according to the rules of sustainable development. This approach will help to reach long-term increase in company value, reduce operational risk and better position in the finance market (Dyck

et al. 2019). Besides the financial advantages, impact investing also has an important social dimension. Investors often concentrate on projects that contribute to improve living conditions in disadvantaged regions, by ensuring access to clean water, renewable energy sources and development of local enterprises. In this way impact investing support the goals defined by United Nations (Barber et al. 2021).

In the study (Xing et al., 2024) panel data from the period 1985-2021 for countries E7 (Brazil, China, India, Indonesia, Mexico, Russia and Turkey) was used. It was aiming to examine impact of green finance on sustainable development and environmental degradation. Data was used from country reports, databases of World Bank and other financial institutions. Dependent variable were saving Neto on a person, taking into account economic and environmental factors, such as consumption of natural resources and ecological damage. Green finances were measured with different indicators: green loans, investments and securities. Indicator of CO₂ was used as a proxy for ecological damage.

The model of analysis was based on the system-generalized method of moments (SYS-GMM), which allowed on the control of endogeneity and omitted variables. The results showed that green loans, investments and securities have a positive impact on sustainable development, supporting ecological investments and technological innovations. For example, green credits made possible to finance projects that limited emissions and development of renewable energy infrastructure. Securities, on the other hand, attracted private investors, what increased capital flow do ecological sector.

The negative impact of ecological damage on the sustainable development was visible seen in regression analysis, where huge levels of CO₂ emissions resulted in limitation of growth and stability of economy. It arise from the costs related to worsening of public health, reduction of biodiversity and damage to infrastructure caused by extreme weather phenomena. Especially, countries like China, India or Brazil, were impacted by these effects the most, due to intensive industrial development.

In the study it was also confirmed that introduction of Paris Agreement in 2015, strengthen the positive impact of green finance on sustainable development, forcing governments and private sectors to bigger responsibility for environment. This agreement motivated countries to invest in clean technologies and to introduce regulations to limit emissions. The interaction of this politics with green finances brought positive effects, especially in energetic projects. Another important element was investor protection index, which positively impacted on the effectiveness of green finance. Strong security of investors restricted investment risk, which attracted capital to long-

term ecological projects. Additionally, political stability and confidence in regulation favored allocation of funds on the sustainability works. At the same time, the analysis also showed that the uncertainty of economic policy in some aspects could negatively impact on the efficiency of green finances. In the countries where regulations are changing often, like Brazil and Russia, investors were more passive to get involved into long-term projects. That was slowing down the progression of sustainable development.

The overall results suggest, that E7 countries must continue to develop green finances and set environmental regulations, that will secure stability and predictability. It is also recommended to strengthen the protection of investors and to carry on with international activities for Paris Agreement. Moreover, integration of investments into green technologies could impact on the increasing of energy efficiency, improving air quality and economic growth in developing countries (Xing et al., 2024).

The study (Raman et al., 2025) refers to the role of sustainable and green finances to reach the SDG which are appointed by UN. It concentrates on the innovations in the finance field and the barriers which make it harder to use all these mechanisms, especially in developing countries. In the mixed approach was used connecting quantitative methods with case study analysis. The main topic of analysis was interdependence between SDG, especially SDG 13 (climate action), which is strongly linked to other goals including SDG 7 (clean energy), SDG 8 (economic growth) and SDG 9 (infrastructure and innovation). Identified financial innovations consist of green fintech, social bonds and risk models supporting investments in renewable energy sources.

The research results showed that main problems in implementation of green finances are high transaction costs and weak institutional framework, especially in developing countries, like Brazil or South Africa. Case studies from these regions show significant advocacy efforts on SDG by local stakeholders, especially SDG 7, SDG 13 and SDG 17 (partnership for goals). However, limited market regulations and absence of mechanisms enabling de-risking of projects are still a serious issue. Green bonds are one of the key tools supporting ecological projects as renewable energy or sustainable infrastructure. Tests from Brazil and India, showed that bonds can support local labor markets and innovations, contributing to reducing social inequalities (SDG 10) and supporting the development of sustainable cities (SDG 11). It is significant ensuring appropriate frameworks, which will prevent greenwashing, that is falsely presenting projects as ecological.

In the context of China, this country stands out as a world leader in green financing, especially, thanks to ambitious regulations and initiatives, like green finance pilot zones. China successfully connects economic development with environmental protection, which is reflected in

SDG 8 and SDG 13. Despite these successes, research shows the need to further adapt local policies to the specific needs of regions. Sustainable financing covers international support mechanisms, like climate funds, that support forest protection and CO₂ emission prevention projects. In the case of countries in the global South, green financing plays an important role in mitigating the effects of climate change by investing in sustainable infrastructure and renewable energy. The study highlights that there is a need for greater cross-sectoral coordination and international cooperation to ensure adequate capital flows to these regions.

Case studies show that there is not enough monitoring of long-term effects of sustainable finance, that can lead to inconsistencies to implementation of SDG. Examples from Brazil and Turkey show that even though there are some successes in financing green initiatives, there is still not enough useful frameworks that would aid local ecological startups or access to capital for enterprises promoting sustainable development.

The authors of the study suggest, that future analysis should focus on developing advanced data analysis methods and adapting financial instruments to local needs and contexts. It is also necessary to take into account social aspects of sustainable finance, like impact on employment or social inclusion. Providing appropriate mechanisms of de-risking and improving transparency of investment processes can significantly contribute to the implementation of global sustainable development goals. The main conclusions from the study emphasize the role of innovative and inclusive financial mechanisms in mobilizing capital towards the SDGs especially in the context of the global South. To fully exploit the potential of green finance, it is necessary to break down regulatory and institutional barriers and promote international cooperation for global sustainability.

1.3. Challenges, Innovations and Socio-Economic Impacts

One of the articles (Xiao et al., 2024) teaches us not just about green finance, but Green Digital Finance (GDF). In this research the author focuses on how GDF influence sustainable development in cities in China, using difference-in-difference (DID) model and double fixed effects model. The data dates back to 2014-2020, from 285 Chinese cities, where 8 of them are in the sphere of pilot zones of green finance. The analysis was constructed from the GDF index, digital finance indicators and the period of implementation of politics.

The method based on DID helped to compare level of sustainable development between the cities from the pilot zones and beyond, before and after implementation of GDF. The main factor that defined the level of sustainable development was analyzed based on three constituents: economic, social and environmental developments. Those components were measured using

pointers as urbanization, pollutant emissions and progress in infrastructure. Methodology consisted of the size of population, the level of investments in real estate and budget expenses.

Key variables of mechanism were researched in two channels of GDF influence on the industrial transformation: financial inclusion and energetic transition. Financial inclusion was measured with deposits balance ratio and loans for citizens, energetic transition – with the structure of energy consumption. The results showed that after application of GDF the level of sustainable development got higher, which were proved by tests of sensitivity regression and parallel trends.

Heterogeneity test especially revealed the differences of political effectiveness depending on the level of development of cities, geographical location and resource characteristics. Less developed cities, especially those in western regions, showed improvements thanks to simplified structure of economy and higher possibilities of implementing GDF innovations. On the other hand more developed cities showed delays in effects, what was attributed because of complexity of structure of economy and longer time for adaptability (Xiao et al., 2024).

Sustainability development is one of the current topics in the international debates, especially in the context of activities of United Nations Organization (UNO) for implementation of SDG. In 2015 UNO release agenda Transforming Our World: The 2030 Agenda for Sustainable Development, defining the main guidelines to deal with environmental degradation and poverty. This plan is an important help for different government to formulate their own regulations, take into account their own needs (Bexell and Jonsson 2017; D'Amato et al. 2019; Zhou et al. 2021).

GDF connects digital technologies, like Artificial Intelligence (AI), blockchain or Internet of Things (IoT), with financial mechanisms supporting pro-ecological projects. This concept is an answer to the need of innovative financing on environment conservation. GDF works in two fields: taking into account the risk of environment in digital investments and using digital tools for developing financial products of an ecological nature. The research on GDF shows that digital technologies can improve clarity of investments and make it easier to finance projects (Arner et al. 2020; Oertli 2020). Particularly Big Data technology and AI are key to risk assessment and prognosis of usefulness of ecological investments projects. Morgan (2022) shows that digital technologies support industrial transformation by the increase of availability to the capital and facilitation of financing innovative ventures.

Huge meaning in the development of GDF have technological innovations in the finance sector. Fintech technologies can efficiently support financing of green projects, providing access to the data about financial markets and enabling faster decision making in investments. Devidze (2022) highlights that digital technologies can contribute to expansion of green financing through

growth of innovative financial tools, as green bonds or digital informative platforms. Also big and average enterprises play important role in development of financial products adapted to local market and environmental project needs (Ruman et al. 2022).

The article by Junaedi (2024) focuses on the role of sustainable financial practices (ESG) in achieving the Sustainable Development Goals (SDGs). The main research questions include the motivations of financial institutions to implement ESG principles, implementation strategies, benefits and barriers, the impact of these activities on financial performance and potential opportunities for their development. The research methodology is based on literature analysis using qualitative techniques such as thematic analysis, content analysis and narrative synthesis. Academic reports, industry reports and policy documents were analyzed to present a comprehensive picture of sustainable finance. The research results were divided into three key areas: environmental, social and management aspects. In the environmental context, sustainable finance has been identified as mobilizing capital for environmentally friendly projects such as renewable energy, biodiversity conservation and sustainable management of natural resources. Examples include green bonds and financial instruments aimed at reducing CO₂ emissions and promoting the circular economy. The study highlights that taking into account environmental indicators such as carbon dioxide emissions allows for a better assessment of investment risk (Hirth et al., 2019; Climate Bonds Initiative, 2023). Social aspects were analyzed in terms of improving working conditions, gender equality and the involvement of local communities. Attention was paid to investment initiatives such as microfinance, social bonds and investment funds aimed at solving social problems, including access to education and health care. It was indicated that companies that take social factors into account cope better with social risk, which may translate into better financial results (Cronin et al., 2020). Governance aspects include transparency, accountability and ethical behavior of financial institutions. The study highlights the role of independent supervisory boards, remuneration mechanisms linked to the Sustainable Development Goals, and shareholder engagement in promoting responsible practices. The analysis suggests that strong governance structures contribute to companies' improved resilience to ESG risks and improved financial performance (Adams et al., 2020). The study results indicate that sustainable finance not only improves the financial results of companies, but also contributes to the reduction of social inequalities and environmental protection. However, barriers such as the lack of uniform ESG reporting standards, limited data availability and regulatory diversity may limit the potential of these initiatives. The study suggests the need for international cooperation and policy action to overcome these obstacles (Bolton et al., 2020). To sum up, the author's article shows sustainable finance as a key element in achieving global sustainable development goals.

Through financial innovation and collaboration among various stakeholders, capital can be effectively mobilized for environmental and social purposes and the overall transparency and accountability of financial markets can be improved.

Green bonds play a key role in promoting sustainable development by directing financial resources to pro-ecological projects that support climate action and clean energy production. The study (Alamgir and Cheng, 2023) analyses the impact of these financial instruments on the implementation of the SDGs, focusing on the goal of reducing CO₂ emissions and increasing the production of renewable energy. The study used data from 2007, when the first green bond was issued, to 2021. The one-step generalized method of moments (GMM) was used, which allows for dynamic analysis of panel data, taking into account endogenous variables and delayed effects. The results of the analysis indicate that green bonds have a significant impact on reducing emissions and increasing the production of renewable energy. It was estimated that CO₂ emissions per person decreased by up to 0.8 tons, while renewable energy production increased by 66 kWh per person. The study also found that until 2015, before the adoption of the Paris Agreement, the impact of green bonds was negligible. However, after 2015, a significant increase in their impact on reducing emissions and increasing the production of renewable energy was observed. Countries that issue more green bonds are more likely to achieve the SDGs, while countries with low levels of green bond issuance face difficulties in achieving the goals. Green bonds are one of the key tools of green finance that integrate environmental aspects into the financial system. Unlike traditional bonds, funds obtained from green bonds are allocated to specific ecological projects, such as renewable energy, energy-efficient construction, low-emission transport or water management. Their advantage is increased transparency and accountability, as it is necessary to report the use of funds and project effects. The study also highlights the lack of standardization and transparency in green bonds, which poses a challenge for investors. The empirical analysis confirmed the research hypotheses: green bonds have a negative impact on CO₂ emissions and a positive impact on the production of renewable energy. The results of the GMM models showed that more green bonds issued result in reduced CO₂ emissions and an increase in the amount of renewable energy in countries' energy systems. Data on CO₂ emissions per person and renewable energy production per person, as well as data on green bond issuance values, were used. Environmental taxes and foreign direct investment (FDI) were used as moderating variables. The study concluded that environmental taxes effectively strengthen the impact of green bonds on reducing CO₂ emissions and at the same time limit the negative effects of FDI on the environment. However, FDI, especially when directed towards technological and sustainable projects, can have a positive impact on the development of renewable energy. Moreover, the study showed that before 2015,

green bonds had no significant impact on emissions and renewable energy, but after the adoption of the Paris Agreement in 2015, the importance of these instruments increased, which confirms the effectiveness of global climate action. The study's results are important not only for financial institutions, but also for policymakers who can use green bonds as a tool to implement sustainable development goals. The study suggests that tax policies and environmental regulations can effectively enhance the impact of green bonds in achieving sustainable development, especially in reducing emissions and developing clean energy. The conclusions of the analysis indicate the need for further expansion of the green bond market and greater harmonization of regulations and standards in order to increase their effectiveness. As a result, green bonds can play a central role in transitioning economies to greener and lower-carbon development models, which is key to achieving the SDGs by 2030.

2. Research Methodology

The objective of this study is to empirically analyse the relationship between the development of green finance and the achievement of the Sustainable Development Goals (SDGs), using two contrasting cases: Latvia, representing a less developed market for green financial instruments, and Sweden, widely recognised as a global leader and pioneer in this field. The choice of these countries is not accidental but reflects their distinctive positions within the European context.

Latvia, as highlighted in numerous studies and reports (OECD, EEA, EIB), is considered the country in the Baltic region where the green finance market has been developing most slowly. There have been no significant sovereign green bond issuances, and the available financing for sustainable projects largely depends on EU structural funds and sporadic initiatives by commercial banks. In contrast, Sweden is the birthplace of the world's first green bond, issued by SEB Bank in 2008, and has since remained a leader in financing sustainable projects. The country is distinguished by a high share of green bonds in its total debt issuance, strong institutional support, and the systematic integration of financial policy with the SDGs, in particular SDG 7 (clean energy), SDG 11 (sustainable cities and communities), and SDG 13 (climate action).

A comparison of these two countries provides an opportunity to identify the determinants of green finance development, to diagnose the barriers hampering its growth in less advanced markets, and to evaluate the extent to which the evolution of green finance contributes to the effective achievement of the SDGs. The study therefore pursues several interrelated objectives. First, it seeks to measure the intensity and structure of green finance in Latvia and Sweden between 2015 and 2024, including the share of green bonds in total debt issuance, the volume of issuance

relative to GDP, and the role of public and private institutions. Second, it aims to assess progress in achieving selected SDGs directly related to climate and energy, with particular attention to SDG 7, SDG 11, and SDG 13. Third, it intends to analyse the relationship between the intensity of green finance and measurable SDG outcomes, such as the increase in the share of renewable energy, the reduction of greenhouse gas emissions, and investment in sustainable transport infrastructure. Fourth, the research aims to identify the critical barriers and success factors that explain why Sweden has consolidated its leading position while Latvia continues to lag behind, with a focus on the institutional, regulatory, and market mechanisms underlying this divergence. Finally, the study formulates recommendations for countries with lower levels of green finance development—including Latvia, but also other emerging markets—on how to leverage the Swedish experience to enhance their contribution to the SDGs. The research design is based on a comparative approach combining both quantitative and qualitative elements. On the quantitative side, the study examines statistical indicators such as the share of green bonds in total issuance, levels of greenhouse gas emissions, and the proportion of renewable energy in final consumption, alongside other relevant SDG metrics. On the qualitative side, the analysis considers institutional reports (e.g., Kommuninvest, Latvian Ministry of Finance), EU policy documents, and expert insights. This mixed-method approach allows the study to capture not only the measurable numerical effects of green finance but also the more nuanced institutional, regulatory, and cultural factors that influence its effectiveness in supporting the Sustainable Development Goals.

2.1. Research Hypotheses

The empirical analysis in this thesis is guided by three main research hypotheses, each of which reflects the theoretical assumptions and empirical findings reported in the existing literature on green finance and sustainable development.

The first hypothesis (H1) posits that a higher level of green finance development has a positive impact on the achievement of the Sustainable Development Goals, in particular SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). Previous research provides strong grounds for this assumption. The Bank for International Settlements (2025) has demonstrated that companies which issue green bonds subsequently reduce their CO₂ emissions and achieve significant improvements in energy efficiency. Similarly, Flammer (2021), in her comprehensive analysis of the global green bond market, confirmed that green finance is associated with tangible environmental benefits. Taken together, these findings suggest that green finance can act as a catalyst for progress towards climate- and energy-related SDGs.

The second hypothesis (H2) assumes that the effect of green finance is stronger in advanced economies, such as Sweden, than in less developed countries, such as Latvia. This expectation is supported by evidence from the European Environment Agency (2025), which shows that the share of green bonds in total debt issuance exceeds 16% in Sweden, while in Latvia it remains close to zero. The divergence is explained by differences in the depth and maturity of capital markets, the scale of investor demand, and the robustness of institutional infrastructure. As highlighted in the Stockholm Green Finance (2024) report, Sweden benefits from a highly developed financial ecosystem and strong policy support, which together amplify the effectiveness of green finance in achieving sustainability outcomes.

The third hypothesis (H3) addresses the role of regulation and assumes that the implementation of the EU Taxonomy (Regulation 2020/852) has strengthened the link between green finance and the achievement of the SDGs. The EU Taxonomy introduced a harmonised definition of environmentally sustainable investments and established uniform criteria for assessing their impact. This regulatory framework has significantly increased transparency and comparability within the market, thereby enhancing investor confidence. Empirical studies show that the adoption of uniform standards stimulates the volume of green bond issuances and improves the quality and reliability of reporting by issuers, thus reinforcing the positive relationship between green finance and SDG achievement.

2.2. Research Model

The study adopts a comparative research design focused on two contrasting countries: Latvia, representing a less developed market in the field of green finance, and Sweden, which has established itself as a global leader in this domain. The model is constructed on the assumption that the effectiveness of green finance in advancing the Sustainable Development Goals can only be fully understood through a dual methodological lens that combines quantitative and qualitative approaches.

Quantitative analysis enables the measurement of statistical indicators related to green finance and SDG performance, while qualitative analysis makes it possible to examine the institutional and regulatory contexts that condition these outcomes. By integrating these perspectives, the study seeks not only to capture measurable correlations but also to identify the deeper mechanisms that drive or hinder the development of green finance. The research is based on the principle of data triangulation, which involves combining information from multiple reports and institutions in order to enhance the reliability and validity of the findings. Quantitative data will be drawn from several key sources. The European Environment Agency (2025) provides

indicators on the share of green bonds in domestic debt issuance, while the Climate Bonds Initiative offers detailed State of the Market reports on the volume of GSS+ (green, social, sustainability, sustainability-linked) bond issuances in Europe (CBI, 2020). Complementing these are the Eurostat SDG Indicators (2024), which provide official statistics on the achievement of specific sustainability targets, including the share of renewable energy in final energy consumption, greenhouse gas emissions per capita, and improvements in energy efficiency. The qualitative dimension of the research draws on a range of reports and policy documents. In the Swedish case, a central role is played by the Kommuninvest Green Bonds Impact Report (2024), which provides detailed assessments of the environmental and social outcomes of bond-financed projects. For Latvia, relevant materials include publications by the Ministry of Finance and the Bank of Latvia, which discuss debt issuance and strategies for sustainable finance development (Latvia Ministry of Finance, 2023). At the supranational level, documents such as the EU Taxonomy Regulation (2020/852) and the broader EU Strategy on Sustainable Finance (EUR-Lex, 2020) provide the regulatory framework shaping national practices. Finally, international reports by organisations such as the OECD, World Bank, and UNEP FI offer comparative insights into the global implementation of green finance and its contribution to climate goals. A key strength of this research design is the possibility of cross-validating data. By comparing indicators and assessments from different sources—such as EEA versus CBI, Eurostat versus OECD, and national versus EU reports—it becomes possible not only to construct a more comprehensive picture of the situation but also to identify inconsistencies and methodological differences in reporting. Such triangulation ensures that the analysis captures both the quantitative dimensions of financial flows and the qualitative aspects of institutional frameworks and strategic orientations.

The comparative framework of the study involves several dimensions of analysis. First, trend analysis will be conducted for the period 2015–2024, focusing on the dynamics of green bond issuance, the evolution of the renewable energy share, and changes in greenhouse gas emissions in Latvia and Sweden. Second, attention will be given to qualitative differences, with a comparison of national reports produced by governments and financial institutions—for instance, Kommuninvest in Sweden versus the Bank of Latvia. Third, the study will seek to identify success factors and barriers, drawing on regulatory frameworks such as the EU Taxonomy and examining institutional practices that have shaped outcomes in both countries. Finally, conclusions and recommendations will be formulated with a view to considering how Swedish experiences could be adapted and applied in Latvia and, more broadly, in other countries with relatively less developed green finance markets.

2.3. Variables, Their Validity, Reliability and Data Collection Methods

In order to empirically analyse the relationship between the development of green finance and the achievement of the SDGs, the study employs both quantitative variables, derived from statistical data, and qualitative variables, obtained through the analysis of reports and policy documents. The selection of variables is informed by existing scientific literature (Flammer, 2021; BIS, 2025) as well as the methodological practices of international institutions, including the European Environment Agency (EEA), Eurostat, and the Climate Bonds Initiative. Quantitative variables comprise indicators directly linked to the dynamics of the green bond market—such as the share of green bonds in total issuance and the volume of issuance in relation to GDP—as well as sustainability outcomes reflected in SDG metrics, including the share of renewable energy in final energy consumption and greenhouse gas emissions per capita. To strengthen the validity of the model, the analysis also incorporates control variables such as GDP per capita, the share of industry in GDP, and energy-related investment levels, which together provide a broader macroeconomic context. Qualitative variables, in turn, consist of institutional and regulatory factors derived from national and international reports, strategic documents, and financial institution assessments. These encompass, for example, the Kommuninvest Green Bonds Impact Report for Sweden, publications from the Latvian Ministry of Finance and the Bank of Latvia, EU-level strategic documents such as the Taxonomy Regulation (Regulation 2020/852) and the EU Sustainable Finance Strategy, as well as international studies prepared by the OECD and UNEP FI. The inclusion of qualitative variables makes it possible to capture institutional arrangements, regulatory frameworks, and cultural or market practices that cannot be adequately measured using quantitative indicators alone. Ensuring the validity and reliability of the chosen variables requires methodological triangulation. Each indicator is cross-checked across several sources—for example, by comparing EEA data with CBI reports or Eurostat indicators with OECD publications—thus enabling the identification of methodological differences and enhancing the robustness of the findings. This approach guarantees that the empirical analysis does not rely on a single data source, but instead integrates complementary perspectives that reinforce the internal consistency of the study.

The empirical investigation relies on a combination of quantitative and qualitative data, thereby allowing for the assessment not only of the numerical dimension of green finance development but also of the institutional and regulatory context in which it takes place. Quantitative data are primarily sourced from European and international institutions with established credibility and harmonised methodologies. The EEA provides indicators on the share of green bonds in national debt issuance for the years 2015–2024, while the Climate Bonds

Initiative offers comprehensive State of the Market reports detailing the size and dynamics of the GSS+ bond segment across Europe. Eurostat supplies SDG indicators, including those directly linked to climate and energy policies, such as SDG 7 on renewable energy (measured by the share of renewables in final consumption) and SDG 13 on climate action (measured by greenhouse gas emissions per capita and emissions intensity relative to GDP). These datasets, collected as annual time series for the period 2015–2024, enable the identification of long-term trends. Control data—such as GDP per capita, the share of industry in GDP, and investment in the energy sector—are additionally drawn from Eurostat and OECD economic indicators to ensure that macroeconomic conditions are accounted for. The qualitative dimension of the data encompasses a broad spectrum of reports and documents. On the national level, these include the Kommuninvest Green Bonds Impact Report in the case of Sweden, and reports by the Ministry of Finance and the Bank of Latvia regarding debt issuance and sustainable finance strategies in the case of Latvia. At the EU level, the study draws upon strategic documents such as Regulation 2020/852 (EU Taxonomy), which provides a harmonised framework for classifying green investments, and the EU Sustainable Finance Strategy, which outlines future policy directions. Internationally, additional reference is made to the OECD Green Finance and Investment Country Profiles (2022) and UNEP FI analyses of sustainable finance development in Europe. The collected documents and reports will undergo systematic content analysis, with the aim of comparing strategies and practices adopted in Sweden and Latvia. This will make it possible to identify success factors, such as strong institutional support or high participation of institutional investors, as well as barriers, including limited capital market depth or a lack of experience among issuers. The results of the qualitative analysis will then be combined with the statistical findings in a triangulated framework, which increases both the credibility and the explanatory power of the study. The choice of this data collection method is justified by several factors. First, the datasets used are characterised by consistency and comparability, as institutions such as the EEA, Eurostat, and CBI apply uniform methodologies across EU countries, thus enabling direct cross-country comparisons. Second, the combination of quantitative statistics with qualitative reports ensures complementarity, allowing for a more nuanced understanding of outcomes by linking measurable indicators to their institutional and regulatory causes. Third, triangulation across multiple reports and institutions makes it possible to critically assess the reliability of data, identify potential discrepancies, and construct a more comprehensive and credible analytical framework.

Table 1

A summarized description of variables used in the study

Variable name	Description
Dependent variable	
REN	Renewable energy share in gross final energy consumption
GHGpc	Greenhouse gas emissions per capita
Independent variables	
GBshare	Share of green bonds within total government debt / issuance structure
GBdebt	Share of green bonds in total public debt issuance
Control variables	
GDPpc	GDP per capita (macroeconomic control)
INDsh	Share of industry in GDP (structural control)

Source: author

2.4. Empirical Analysis

The development of green finance in recent decades has become one of the most important processes in the global economy. International institutions such as the World Bank, the International Monetary Fund, and the Organisation for Economic Co-operation and Development (OECD) emphasize that achieving climate neutrality and implementing the UN 2030 Agenda requires the mobilization of significant financial resources, which would be difficult to generate under traditional investment models (World Bank, 2021; OECD, 2022). According to estimates by the European Investment Bank (EIB, 2020), achieving the climate goals enshrined in the European Green Deal will require investments of at least €350 billion annually by 2030. In this context, the development of green finance instruments – green bonds, sustainability-linked loans, and ESG funds – is not just a market innovation but a sine qua non for implementing climate and economic policies. According to the literature (Flammer, 2021; Krueger, Sautner & Starks, 2020), the importance of green finance should be analysed not only through the prism of emission volume or the number of instruments, but primarily through its real impact on sustainable development. One of the greatest challenges in research is therefore capturing the relationship between green finance market activity and progress in achieving selected Sustainable Development Goals (SDGs). This paper focuses on two goals particularly related to financing the energy and climate transition: SDG 7 (clean and affordable energy) and SDG 13 (climate action).

The choice of countries for analysis was dictated by the contrast between a highly developed market and an emerging market. Sweden has long been considered a pioneer in green finance. It was there, thanks to cooperation between SEB Bank and the World Bank, that the world's first green bond was issued in 2008 (Riksbank, 2021). Currently, Sweden ranks high in terms of the share of green bonds in total debt issuance and the implementation of sustainable finance instruments (Kommuninvest, 2024). Latvia, on the other hand, represents a completely different stage of development – the lack of sovereign green bond issuance, marginal private sector involvement, and a strong reliance on EU structural funds mean that this market is still in its infancy (OECD, 2022). The timeframe of the analysis covers the years 2015–2024. This period is unique for several reasons. First, it saw dynamic growth in the global green bond market – from approximately USD 50 billion in 2015 to over USD 1.5 trillion in 2024 (Climate Bonds Initiative, 2024). Second, these years saw key regulatory changes in Europe, including the introduction of Regulation 2020/852 on the EU Taxonomy, which established consistent criteria for defining investments as sustainable (European Union, 2020). Third, it was during this period that European Union countries intensively implemented transition financing mechanisms under the European Green Deal, including the Recovery and Resilience Fund, a significant portion of which was allocated to climate projects. This study adopts a mixed-methods approach, combining quantitative and qualitative analysis. The quantitative analysis will include statistical data from Eurostat, the EEA, and the Climate Bonds Initiative, including the share of green bonds in public debt, the volume of GSS+ emissions relative to GDP, the share of renewable energy sources in final energy consumption, and GHG emissions per capita. The qualitative analysis will focus on government and institutional reports (e.g., Kommuninvest in Sweden, the Ministry of Finance in Latvia), which allow for the identification of barriers and success factors hidden in the numerical data alone. Triangulation of methods will allow for the examination not only of whether relationships exist but also of why they occur as they do (Denzin, 2012).

The primary objective of the study is to test three hypotheses:

H1. A higher level of green finance development positively influences the achievement of the SDGs.

H2. This effect is stronger in highly developed countries (Sweden) than in less developed countries (Latvia).

H3. The implementation of the EU Taxonomy in 2020 strengthened the link between green finance and progress in achieving the SDGs.

The significance of this analysis is both scientific and practical. On the one hand, the study aligns with the growing interest in the empirical literature on the impact of green finance on the economy and the environment (Banga, 2019; Flammer, 2021; BIS, 2025). On the other hand, the results can be useful to practitioners: policymakers, regulators, banks, and investors, by identifying which institutional mechanisms foster the effectiveness of financial instruments and which barriers limit their effectiveness.

The empirical analysis is based on quantitative and qualitative data for two countries: Sweden and Latvia. The quantitative data covers the period 2015–2024, allowing us to capture both long-term trends and the potential impact of the introduction of the EU Taxonomy in 2020. Qualitative data, on the other hand, comes from reports from financial institutions, EU regulatory documents, and national reports, enabling the identification of barriers and success factors specific to both countries.

The empirical analysis conducted in this study draws on several complementary data sources, which together provide both the statistical basis and the institutional context necessary for a comparative evaluation of Sweden and Latvia. The Eurostat database (2024) on the implementation of the Sustainable Development Goals in EU member states constituted the primary source of sustainability indicators. In particular, three variables were selected: the share of renewable energy in gross final energy consumption (SDG 7), greenhouse gas emissions per capita (SDG 13), and GDP per capita, which was used as a control variable. These indicators make it possible to assess both the environmental outcomes and the broader economic conditions of the countries under study. Additional information on the financial dimension of green instruments was obtained from the European Environment Agency (2025), which provides data on the share of green bonds in total public debt issuance across EU countries. Complementary insights into the volume and structure of the wider GSS+ bond market were derived from the State of the Market reports published by the Climate Bonds Initiative (2020; 2024), where data are standardised and converted to GDP, allowing for meaningful cross-country comparisons. The OECD (2022) further enriched the analysis by offering a broader perspective on the characteristics of financial markets in the Baltic and Nordic regions, as well as identifying barriers and success factors that condition the development of green finance. Finally, country-specific reports were consulted, most notably the Kommuninvest Green Bonds Impact Report (2024) in the case of Sweden and publications of the Latvian Ministry of Finance (2019–2024), which provided valuable insights into national strategies, institutional practices, and market dynamics.

Table 2

Descriptive statistics and trends of SDG-related indicators and green finance measures: Sweden vs Latvia, 2015–2024.

Year	Sweden – share of renewable energy (%)	Latvia – share of renewable energy (%)	Sweden – GHG emissions (t CO₂/person)	Latvia – GHG emissions (t CO₂/person)	Sweden – green bonds (% of debt)	Latvia – green bonds (% of debt)
2015	53	37	5,8	6,3	8,0	0,0
2016	54	38	5,6	6,2	9,0	0,0
2017	55	39	5,5	6,1	11,0	0,0
2018	56	39	5,3	6,1	12,0	0,0
2019	57	40	5,2	6,0	13,0	0,1
2020	59	41	5,0	6,0	14,0	0,2
2021	60	41	4,9	5,9	15,0	0,2
2022	61	42	4,7	5,8	16,0	0,3
2023	63	43	4,6	5,7	17,0	0,3
2024	65	44	4,5	5,6	18,0	0,3

Source: Based on Eurostat (2025), European Environment Agency (2025), OECD (2022), Kommuninvest (2024).

The analysis of these datasets and reports reveals clear structural differences between Sweden and Latvia. In terms of renewable energy (SDG 7), Sweden has consistently increased its share of renewables since 2015, with an average of 58.3% during the analysed period, compared to Latvia’s average of 40.5%. This difference illustrates Sweden’s stronger determination to achieve its energy transition objectives, supported by more advanced infrastructure and effective regulatory frameworks. With respect to greenhouse gas emissions (SDG 13), Sweden has achieved a steady downward trajectory, reaching an average level of 4.5 tonnes of CO₂ per capita, while Latvia remains at a higher level of around 5.6 tonnes per capita and exhibits a slower pace of reduction. This discrepancy reflects, at least in part, Latvia’s continued reliance on traditional

energy sources. The most pronounced divergence, however, is observed in the area of green bond financing. On average, Sweden has financed 13.3% of its public debt through green bonds, while in Latvia the share stands at a mere 0.1%. These figures clearly demonstrate that green finance has become an integral component of the Swedish capital market and a mainstream instrument of fiscal policy, whereas in Latvia it remains a marginal and underdeveloped phenomenon. The contrast highlights the importance of institutional capacity, market maturity, and investor confidence in determining the role of green finance in national sustainability strategies.

The preliminary interpretation of the collected data highlights significant disparities between Sweden and Latvia in terms of renewable energy, greenhouse gas emissions, and the development of the green bond market. In the field of renewable energy (SDG 7), Sweden maintained one of the highest levels among EU member states during the analysed period, with an average share of 58.3% of renewables in gross final energy consumption. Latvia, by contrast, achieved an average of 40.5%. Although this performance appears weaker, it should be noted that Latvia possesses relatively favourable natural conditions, particularly in hydropower and biomass. The comparatively lower results therefore reflect not a lack of natural potential but rather institutional and investment constraints that limit the pace of renewable energy development. When considering greenhouse gas emissions (SDG 13), Sweden demonstrated a systematic downward trend, reducing per capita emissions from 5.8 tonnes of CO₂ in 2015 to 4.5 tonnes in 2024. Latvia also achieved a reduction, from 6.3 to 5.6 tonnes per capita, yet the pace of change proved slower. This suggests that increasing the share of renewable energy alone does not suffice to deliver substantial emissions reductions. Structural transformations in key sectors such as industry and transport are equally necessary in order to accelerate progress towards climate goals. The most striking difference between the two countries is observed in the green bond market. In Sweden, the share of green bonds in public debt reached 18% by 2024, placing the country among the global leaders in sustainable finance (Kommuninvest, 2024). Latvia, however, registered only 0.3%, which points to the absence of a developed capital market and limited investor engagement in sustainable instruments. This contrast underlines how institutional capacity and financial infrastructure shape the ability of green finance to effectively support the Sustainable Development Goals.

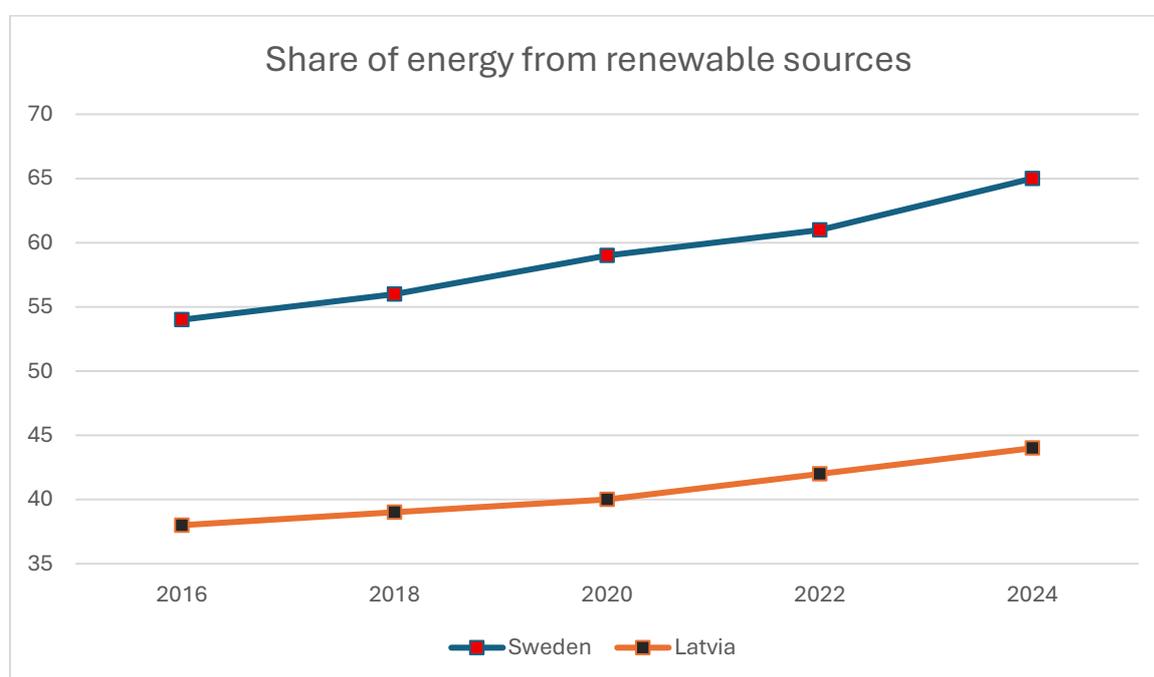
Trend analysis is a key element of this study. It allows to capture not only quantitative changes in the development of green finance and the implementation of the SDGs in Sweden and Latvia, but also to understand the dynamics of these processes in the context of broader economic and institutional conditions. Furthermore, trend analysis allows to identify consistent and inconsistent phenomena – those that may indicate a real impact of green finance on climate and

energy policy, but also those that reveal barriers and limitations. In this section, three key indicators will be analysed – the share of renewable energy (SDG 7), greenhouse gas emissions (SDG 13), and the share of green bonds in public debt. I then present interpretive reflections and synthetic conclusions, comparing the results with the literature and my own observations.

The renewable energy share indicator is one of the fundamental metrics for the energy transition. A high level of renewable energy not only reduces dependence on fossil fuels but also increases the economy's resilience to fluctuations in energy commodity prices.

Figure 1

Share of energy from renewable sources: Sweden vs Latvia, 2015–2024.



Source: Based on Eurostat (2025), European Environment Agency (2025).

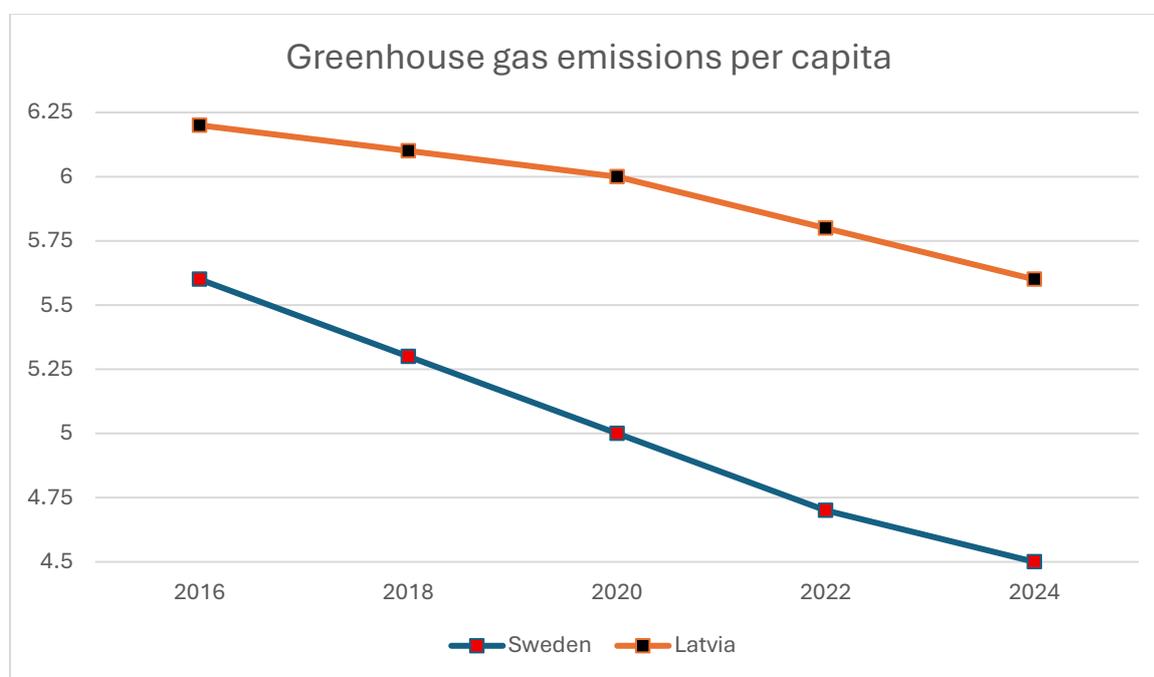
Data indicate that Sweden maintained one of the highest renewable energy share levels in Europe during the period under review – from 53% in 2015 to 65% in 2024. Importantly, the dynamics of this growth accelerated after 2020, which can be attributed to the implementation of the EU regulatory framework (EU Taxonomy) and the growing share of green bonds in financing energy investments. In my opinion, it is particularly important that Sweden not only developed traditional technologies (hydro, biomass) but also invested heavily in wind energy, including offshore wind. This indicates a long-term approach to the transition, not just the exploitation of natural resources. In Latvia, we are observing a much slower growth rate – from 37% in 2015 to 44% in 2024. The gap with Sweden systematically increased – from 16 percentage points to 21 percentage points. This proves that Latvia – despite having similar natural potential – has not

implemented such a coherent and consistent renewable energy development strategy. Literature (OECD, 2022) emphasizes that the reasons include the lack of a stable regulatory framework, fragmented support programs, and insufficient development of the local capital market. I believe that the case of Latvia demonstrates the importance of the institutional framework for green investments. Natural potential is not enough – financial and political mechanisms are needed to transform this potential into viable projects.

GHG emissions per capita are one of the most measurable indicators for assessing climate policy. Their decline indicates a reduction in the economy's negative impact on the environment and improved compliance with EU climate goals.

Figure 2

Greenhouse gas emissions per capita: Sweden vs Latvia, 2015–2024.



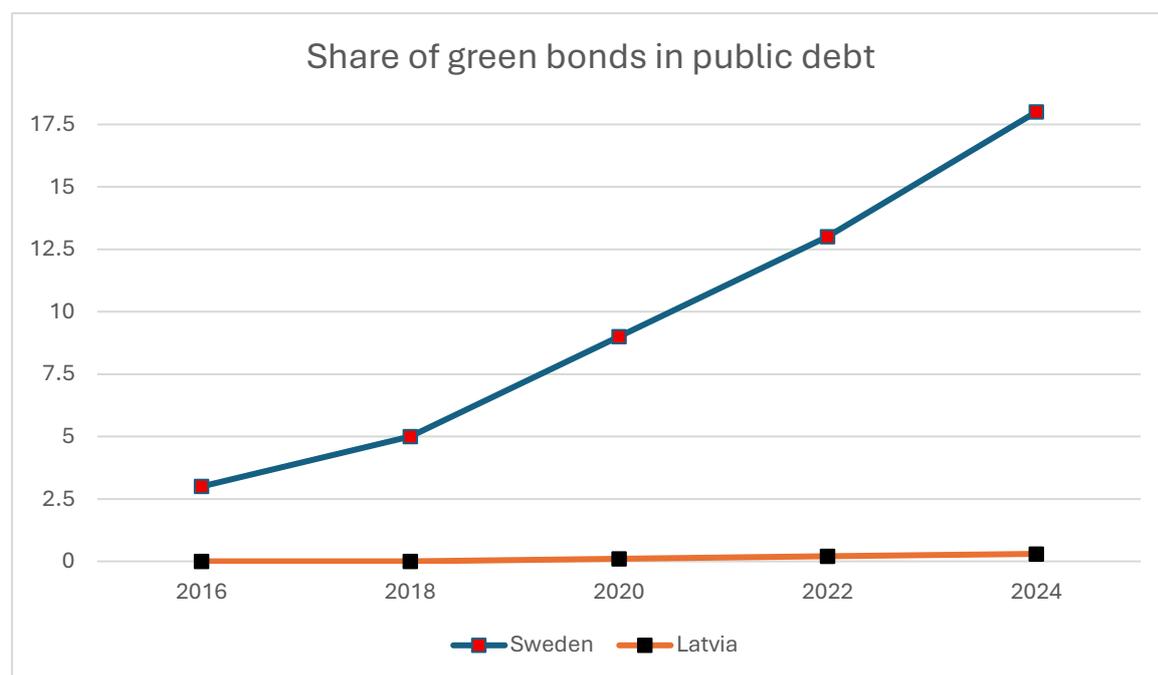
Source: Based on Eurostat (2025), European Environment Agency (2025).

In Sweden the emission reduction was significant – from 5.8 t CO₂ per capita in 2015 to 4.5 t in 2024, a 22% decrease. Literature (EEA, 2025) indicates that Sweden is one of the countries reducing emissions most rapidly, while simultaneously experiencing economic growth (GDP per capita is steadily increasing). This proves that so-called "decoupling" – decoupling economic growth from emissions growth – is possible. In my opinion, this is key evidence of the effectiveness of green finance policies in practice. In Latvia emissions reduction was much slower – from 6.3 tons to 5.6 tons per capita (an 11% decrease). In practice, this means that Latvia still emits more CO₂ per capita than Sweden, despite being a country with a lower level of

industrialization and lower GDP per capita. This shows that poor implementation of green finance policies and a lack of investment in low-emission technologies translate into a slower pace of emissions reduction. The difference between Sweden and Latvia is particularly telling for me: a wealthier and more industrialized country can reduce emissions faster than a less developed one. This indicates that green finance is not a luxury of wealthy economies, but a necessity – a tool enabling transformation in every context.

Figure 3

Share of green bonds in public debt: Sweden vs Latvia, 2015–2024.



Source: Based on OECD (2022), Kommuninvest (2024), European Environment Agency (2025).

In Sweden the share of green bonds in public debt increased from 8% in 2015 to 18% in 2024. Sweden has been a leader in this area for years – not only thanks to sovereign issuances, but also thanks to the activity of institutions such as Kommuninvest, which issues bonds to finance municipal projects. A 2024 report indicated that Kommuninvest's issuances contributed to reducing CO₂ emissions by over 1 million tons annually (Kommuninvest, 2024). On the other hand, in Latvia green bonds are practically non-existent in Latvia. The first issuances appeared only after 2019 and were marginal – the share of debt did not exceed 0.3% until 2024. In my opinion, this demonstrates that the lack of a developed financial market prevents the mobilization of capital on the scale necessary for transformation. The difference in the level of development of the green bond market is, for me, the most important message from this analysis. It clearly shows that access to capital (and the ability to mobilize it through green instruments) is a necessary condition for effective climate and energy policy.

The trend analysis reveals a strong internal consistency between the key indicators in Sweden. The steady increase in the share of renewable energy sources, the systematic reduction of greenhouse gas emissions, and the dynamic expansion of the green bond market clearly evolve in parallel. This convergence of trends constitutes persuasive evidence that green finance exerts a tangible impact on both economic development and climate transformation. In the Swedish case, green finance functions not merely as an auxiliary instrument, but as a central mechanism accelerating the achievement of climate and energy-related SDGs. In contrast, the Latvian trajectory demonstrates a lack of such coherence. The share of renewable energy sources has increased only gradually, the reduction in greenhouse gas emissions has been modest, and the green bond market has remained virtually non-existent throughout the analysed period. Although EU-funded projects have been implemented, their effects do not appear to translate into systemic transformation at the national level. This discrepancy underscores the conclusion that green finance is not only a statistical “indicator” of development but also a necessary precondition for the effective implementation of the SDGs. The comparison between Sweden and Latvia thus highlights a fundamental distinction: while Sweden has successfully integrated green finance into its economic and environmental policy framework, Latvia continues to face structural barriers. Beyond the mere absence of financial instruments, the Latvian case reflects deeper challenges, including a lack of investor confidence and the limited credibility of public institutions. These institutional weaknesses may constitute a critical bottleneck, preventing the emergence and consolidation of a domestic green finance market, irrespective of the country’s natural potential for renewable energy expansion.

2.5. Synthetic Conclusions

The analysis of trends in renewable energy, greenhouse gas emissions per capita, and the development of the green bond market makes it possible to formulate a series of conclusions that are both empirical and theoretical in nature.

The results for Sweden point to a high degree of coherence between the development of the green finance market and progress towards the Sustainable Development Goals. The observed increase in the share of renewable energy sources by 12 percentage points, the reduction in CO₂ emissions per capita by 22%, and the expansion of green bonds to 18% of public debt in 2024 collectively portray an economy in which financial and climate policies operate in close synergy. This alignment may be interpreted as empirical confirmation of the thesis that green finance functions not merely as a financial instrument but as a genuine catalyst for systemic transformation. In Latvia, however, the analysis revealed a lack of such consistency. Although the

share of renewable energy rose from 37% to 44% and emissions decreased by 11%, the green bond market remained marginal, accounting for only 0.3% of public debt. These findings indicate that, while incremental improvements occur in the areas of energy and emissions, they are not underpinned by domestic financial mechanisms. From the perspective of development theory, Latvia continues to rely heavily on external resources, particularly EU funds, rather than mobilising internal capital markets to drive sustainable transformation.

The comparison between Sweden and Latvia underscores that the decisive factor is not GDP per capita or natural potential but the quality of institutions and the robustness of the regulatory environment. Sweden's institutional landscape, strengthened by entities such as Kommuninvest and rigorous ESG reporting standards, has facilitated the creation of a market built on trust, attracting both institutional and private investors. Latvia, despite EU membership and access to the same regulatory framework, has yet to establish institutions capable of mobilising significant capital for green projects. This divergence reflects a broader pattern of development asymmetry within the European Union. While Scandinavian countries stand at the forefront of green finance innovation, many Baltic and Central European states are still at an embryonic stage of implementation. As a result, EU policies such as the Taxonomy Regulation exhibit differentiated effectiveness: in advanced economies, they reinforce and accelerate existing processes, while in less developed contexts, they risk remaining largely symbolic. The interdependence of indicators further illustrates the dynamics of this asymmetry. In Sweden, the growth of green bond issuance mobilised capital for renewable energy investments, which in turn facilitated reductions in greenhouse gas emissions. Latvia, lacking such a mechanism, has progressed much more slowly. This finding confirms previous research (Flammer, 2021; Ziolo et al., 2021), which argues that the effectiveness of green finance depends on its capacity to generate multiplier effects across the economy. Equally significant is the role of trust and transparency, which emerge as central determinants of success in the Swedish case. Investor confidence, underpinned by clear and reliable reporting of environmental outcomes, proved crucial in sustaining demand for green instruments. In Latvia, by contrast, the absence of comparable mechanisms undermines the credibility of green finance and limits its attractiveness to potential investors. This highlights that trust and transparency are not merely normative ideals but essential economic preconditions for the functioning of sustainable finance markets. From a theoretical standpoint, these findings resonate with the concept of ecological modernization (Mol & Sonnenfeld, 2000), which posits that technological innovation and financial instruments can enable emission reductions without impeding economic growth. Sweden represents a successful example of this trajectory, while Latvia exemplifies the institutional barriers that can hinder it.

From a practical perspective, the results emphasise that climate and financial policies must reflect varying degrees of institutional readiness across countries if they are to be effective.

In summary, the synthetic conclusions drawn from the trend analysis may be condensed into three overarching insights. Sweden demonstrates a coherent model in which green finance acts as a driver of climate transformation, yielding visible and measurable outcomes. Latvia illustrates the limitations of progress in the absence of supportive financial institutions, investor trust, and effective mechanisms, despite favourable natural potential and the existence of EU-level regulations. At the European level, the comparison of these cases highlights that uniform regulatory frameworks alone are insufficient: differentiated policies, adapted to national market maturity, are necessary to ensure more balanced development. Ultimately, the evidence confirms that green finance can be a powerful instrument for advancing the SDGs, but only under conditions of institutional maturity, transparency, and investor confidence. Where these conditions are absent, its potential impact remains negligible.

2.6. Testing the Research Hypotheses

The first hypothesis assumes that a higher level of green finance development positively impacts the achievement of the Sustainable Development Goals, with particular emphasis on SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). Empirical evidence from Sweden strongly supports this hypothesis. Between 2015 and 2024, the share of green bonds in public debt increased from 8% to 18%. Over the same period, the share of renewable energy in final energy consumption grew by 12 percentage points, from 53% to 65%, while greenhouse gas emissions declined by 22%, from 5.8 to 4.5 tonnes per capita. The simultaneous expansion of green finance and improvement in environmental indicators suggests a strong positive correlation: the greater the capital mobilised through green financial instruments, the better the outcomes in achieving climate- and energy-related SDGs. In contrast, Latvia provides little empirical support for the hypothesis. The green bond market remained virtually non-existent during the analysed period, with a maximum share of only 0.3% of public debt. Environmental progress was modest: the share of renewable energy increased by 7 percentage points (from 37% to 44%) and GHG emissions fell by 11%. The absence of a functional green finance market meant that improvements relied almost exclusively on EU grants, without the multiplier effects associated with domestic capital mobilisation.

These findings are consistent with the literature, which emphasises that green finance acts as a catalyst for sustainable development only when it achieves sufficient scale (Flammer, 2021; Ziolo et al., 2021). In Sweden, this was made possible by the presence of well-functioning

financial institutions, notably Kommuninvest, and by high levels of investor confidence. The issuance of green bonds was tied to specific projects, such as the modernisation of public transport and investments in wind energy, which produced measurable reductions in emissions. In Latvia, the absence of comparable institutional mechanisms and the reliance on external funding constrained the potential for green finance to deliver systemic effects. A critical reflection on these results indicates that the presence of green finance alone is insufficient; both its scale and quality are decisive factors. Sweden illustrates how a developed green bond market can contribute directly to the energy transition and emissions reduction. Latvia, by contrast, demonstrates that without appropriate financial instruments, natural potential remains underutilised and progress is slow. Moreover, the Swedish experience suggests that the impact of green finance on SDG outcomes exhibits a time lag: bonds issued in 2015–2018 only translated into significant environmental effects several years later. This observation aligns with the findings of Banga (2019), who emphasises the long-term character of climate investments.

In conclusion, Hypothesis H1 is fully confirmed in the case of Sweden, where the development of green finance correlates strongly with progress towards SDG 7 and SDG 13. In Latvia, however, the hypothesis must be rejected, as the domestic green finance market remains too small to exert a significant impact. The results therefore point to a conditional relationship: green finance supports the implementation of the SDGs only in countries that have achieved a sufficient degree of institutional and financial maturity.

The second hypothesis assumes that the effect of green finance is stronger in countries with more developed financial markets, such as Sweden, than in less advanced markets, such as Latvia. The comparative analysis of both countries strongly supports this assumption. In Sweden, the green bond market expanded rapidly, with the share of green bonds in public debt rising from 8% in 2015 to 18% in 2024. Over the same period, significant improvements were recorded in sustainability indicators: the share of renewable energy in final energy consumption grew by 12 percentage points, while greenhouse gas emissions fell by 22%. Latvia, by contrast, exhibited negligible progress in green finance. The share of green bonds in public debt never exceeded 0.3%, and improvements in environmental outcomes were markedly slower. The share of renewable energy increased by only 7 percentage points, while emissions declined by just 11%. These figures clearly demonstrate that the absence of a developed capital market and the marginal role of green instruments translated directly into weaker environmental performance. The qualitative evidence reinforces this interpretation. According to the OECD (2022) and Raman et al. (2025), the effectiveness of green finance depends not only on the volume of issuance but also on the quality of institutions. Sweden is characterised by a stable regulatory environment, a transparent reporting

system, and a high degree of investor confidence. These conditions ensured that capital raised through green bonds was effectively channelled into projects directly supporting the SDGs, including investments in public transport, renewable energy infrastructure, and energy efficiency in buildings. In Latvia, however, the institutional infrastructure necessary to translate green finance into tangible effects is largely absent. As highlighted in the OECD (2022) report, key obstacles include the limited development of the domestic bond market, the lack of specialised institutions such as Kommuninvest, and insufficient governmental experience in thematic bond issuance. As a result, green finance in Latvia remains a theoretical possibility rather than a practically utilised instrument. The broader implications of these findings confirm that green finance cannot be regarded as a “one-size-fits-all” solution. Its effectiveness is highly context-dependent and shaped by the interaction between financial development and institutional quality. Sweden, with its mature capital market and strong institutional framework, demonstrates how green bonds can function as a powerful tool of economic and climate transformation. Latvia, lacking such conditions, has been unable to translate the concept of green finance into meaningful environmental benefits. Importantly, this divergence cannot be explained solely by differences in wealth. While Sweden’s GDP per capita in 2023 was approximately EUR 55,000 compared to EUR 23,000 in Latvia, qualitative factors proved equally decisive. Investor confidence, regulatory transparency, and the ability to design and issue credible thematic bonds emerged as key elements underpinning Sweden’s success.

In conclusion, Hypothesis H2 is clearly confirmed. The effect of green finance is demonstrably stronger in institutionally advanced countries such as Sweden than in less developed ones such as Latvia. These findings are consistent with prior studies (OECD, 2022; Ziolo et al., 2021), which underline the importance of the institutional environment in determining the effectiveness of sustainable finance.

The third hypothesis assumes that the implementation of the EU Taxonomy in 2020 strengthened the link between green finance and the achievement of the Sustainable Development Goals. The empirical evidence suggests that this hypothesis is only partially supported. In Sweden, the adoption of the EU Taxonomy coincided with a clear acceleration in favourable trends. Between 2020 and 2024, the share of renewable energy in final consumption rose from 59% to 65%, CO₂ emissions declined from 5.0 to 4.5 tonnes per capita, and the share of green bonds in public debt increased from 14% to 18%. These developments indicate that the standardisation of definitions and the improvement of transparency enhanced investor confidence and contributed to the expansion of the green bond market. In Latvia, by contrast, the introduction of the EU Taxonomy did not produce a discernible effect. The share of renewable energy rose by only three

percentage points (from 41% to 44%), CO₂ emissions decreased marginally from 6.0 to 5.6 tonnes per capita, and the share of green bonds remained stagnant at 0.2–0.3%. This outcome reflects the fact that, while the regulation was formally transposed, it was not effectively implemented in practice due to the absence of mature institutions, underdeveloped financial infrastructure, and limited investor engagement. These findings are consistent with the intended role of the EU Taxonomy, which was designed to establish a harmonised definitional framework for sustainable investments (European Union, 2020). In Sweden, the regulation was quickly and effectively operationalised: banks, funds, and public institutions began reporting according to the new criteria, which increased market transparency and encouraged a higher volume of green issuances (EEA, 2025). In Latvia, however, the regulatory framework remained largely declaratory. Without institutional readiness and adequate market tools, the Taxonomy could not generate substantive effects. The broader implication of these results highlights a paradox of EU policy: the same regulation may produce significant benefits in advanced economies, while remaining almost ineffective in less developed ones. Sweden reaped the advantages of the Taxonomy because its financial market was already mature and in need of consistent standards. Latvia, on the other hand, lacked the institutional and financial capacity to utilise the regulation effectively. Consequently, the EU Taxonomy reinforced the link between green finance and SDG achievement in Sweden but had only marginal influence in Latvia.

In conclusion, Hypothesis H3 is partially confirmed. The results demonstrate that the effectiveness of supranational regulation is conditional on institutional capacity and market maturity. This interpretation is consistent with the literature, which underlines the critical role of institutional frameworks in the successful implementation of climate and sustainability regulations (Raman et al., 2025). From a policy perspective, the findings suggest that EU regulations should not be entirely uniform: while advanced economies may benefit from ambitious standards, less developed markets require complementary measures, including technical and financial support, to enable practical implementation.

2.7. Qualitative Analysis

Quantitative analysis revealed significant differences between Sweden and Latvia in terms of the effectiveness of green finance. However, statistical indicators alone do not fully explain why some countries achieve success while others stagnate. For this reason, it is necessary to complement the analysis with a qualitative perspective that takes into account institutional, cultural, political, and social factors. Sweden is widely recognised as a pioneer and leader in green finance (Flammer, 2021; EEA, 2025), whereas Latvia remains an example of a country in which

this market has remained virtually undeveloped (OECD, 2022). A comparative discussion of these two cases allows us to identify both the key success factors that facilitated Sweden's leadership and the barriers that hindered Latvia's development.

In Sweden, the success of green finance can be attributed to several mutually reinforcing elements. One of the most important has been the role of strong public and municipal institutions. A central example is Kommuninvest, a cooperative financial institution representing more than 90% of Sweden's municipalities and regions, which has played a crucial role in issuing green bonds to finance local infrastructure projects such as public transport modernisation, building retrofitting, and renewable energy development (Kommuninvest, 2024). Strong institutions act as guarantors of stability, building investor confidence, which, as North's institutional theory (1990) argues, forms the foundation for financial market development. Equally important has been the high level of transparency and reporting standards. Each Swedish green bond issuance is accompanied by a detailed report documenting actual outcomes, including energy savings and CO₂ emission reductions. This transparency reassures investors that their funds translate into tangible results, eliminating a barrier often cited in emerging markets, where insufficient reporting deters capital mobilisation (Banga, 2019). Another success factor lies in Sweden's culture of trust and social participation. Levels of citizen trust in government exceed 60%, compared to the EU average of around 45% (OECD, 2022). This strong social capital fosters acceptance of new financial instruments and encourages investment in long-term projects. It also ensures that local projects financed through green bonds enjoy broad social legitimacy, reducing the risk of opposition to transformative initiatives. Finally, Sweden's ambitious climate strategy, which commits the country to climate neutrality by 2045 (Riksbank, 2021), ensures close alignment between climate and financial policies. According to the theory of ecological modernisation (Mol & Sonnenfeld, 2000), such policy coherence is essential for effective ecological transformation, and Sweden provides a compelling empirical example of this dynamic.

In Latvia, by contrast, several barriers have prevented the emergence of a comparable green finance market. The absence of sovereign green bond issuances until 2024 has had both symbolic and practical consequences. Symbolically, it signalled to investors that the government was not prepared to adopt sustainable finance standards, while practically it limited the ability of the capital market to finance green projects (OECD, 2022). Unlike Lithuania and Estonia, which initiated small but significant sovereign issuances, Latvia remained behind, missing an important opportunity to stimulate market development. Weak financial institutions further constrained progress: there is no Latvian equivalent of Kommuninvest to coordinate local government financing, which means renewable energy projects continue to rely primarily on EU funds. This

dependence limits domestic ownership of investment processes and prevents the formation of a self-sustaining national green finance ecosystem (Raman et al., 2025). Structural limitations of the Latvian capital market present another major barrier. The bond market is one of the least developed in the European Union, with corporate and municipal bond issuance as a share of GDP several times lower than in Sweden or even in Estonia (OECD, 2022). Low market liquidity increases risks for investors, who face uncertainty about whether they will be able to sell securities when needed. This discourages engagement in thematic issuances, which by nature are niche and require a stable secondary market. Finally, low levels of trust and limited transparency compound these challenges. Public trust in Latvian institutions is among the lowest in the EU (Eurobarometer, 2023), undermining investor confidence in the efficient and transparent use of funds. The absence of mandatory environmental reporting standards further exacerbates the perception of risk, raising concerns that potential green bond issuances could be dismissed as greenwashing.

Taken together, these contrasting cases demonstrate that the effectiveness of green finance depends on a complex interplay of institutional, cultural, political, and social factors. Sweden's success has been built on strong institutions, transparency, trust, and coherent strategies, while Latvia's stagnation reflects weak financial infrastructure, low trust, and insufficient regulatory implementation. These differences highlight the importance of institutional maturity as a prerequisite for green finance to function as an effective instrument for achieving the Sustainable Development Goals.

2.8. Critical Reflections and Conclusions

The qualitative analysis makes it possible to go beyond the compilation of quantitative data and to reflect on the deeper mechanisms behind Sweden's success and Latvia's stagnation in the field of green finance. The first key observation is that the development of green finance appears to be a result of institutional maturity rather than its cause. The Swedish case demonstrates that effective green finance markets emerge only in contexts characterised by strong institutions, transparent legal systems, and high levels of social trust. This implies that green finance cannot be regarded as a simple tool that can be implemented uniformly across countries; its effectiveness is historically and institutionally conditioned. A second dimension concerns the role of social capital and political culture. Research has long emphasised that Nordic countries exhibit higher levels of social trust in public institutions (Putnam, 2000). In Sweden, this trust translates directly into investor confidence that financial resources will be used as promised. Latvia, where public trust is among the lowest in the EU (Eurobarometer, 2023), presents the opposite case: without additional guarantee mechanisms, it is difficult to expect the green finance market to attract

sustained participation. The third reflection relates to the European policy framework. The EU Taxonomy was designed to provide a harmonised system for classifying sustainable investments, but its implementation demonstrates the risks of assuming homogeneity across member states. In Sweden, the regulation reinforced existing processes and enhanced market transparency, whereas in Latvia, it remained largely dormant. This discrepancy highlights the need to adapt EU-level policies to diverse national contexts and levels of institutional maturity. Another issue is the risk of greenwashing and the instrumentalization of green finance. Sweden, as a market leader, faces the challenge of ensuring that rapid growth in green bond issuance does not undermine credibility by financing projects that only partially meet environmental criteria (Rasche, 2021). Latvia, on the other hand, risks that its first issuances could be perceived as symbolic or insincere, which would further discourage investor engagement. Green finance also has a clear political dimension. In Sweden, it is closely integrated into the national climate neutrality strategy, which sets a target of net-zero emissions by 2045. In Latvia, by contrast, the absence of comparable strategic commitments results in the marginalisation of green finance. These observations support the view that green finance should be seen not only as an investment tool but also as an expression of political will. While Sweden represents a success story, it also faces potential risks. The increasing financialization of the climate transition may lead to benefits being concentrated in the financial sector rather than in the real economy (Krueger et al., 2020). Furthermore, the rapid growth in demand for green bonds could incentivize issuers to lower standards, thereby reducing the quality of financed projects. Latvia, in turn, risks entrenching its dependence on EU funds, which may hinder the development of a self-sustaining domestic green finance market and limit its financial independence in the transition to renewable energy. These reflections lead to several broader conclusions. First, green finance is not a universal solution but a conditional tool that can support the achievement of the SDGs only in countries with adequate institutional and social development. Sweden shows that strong institutions and high levels of trust can transform green bonds into an engine of systemic change, while Latvia illustrates that without these conditions, the instrument remains ineffective. Second, the analysis confirms that success is determined less by income levels or natural resources than by institutional quality and governance. Strong financial institutions, reporting standards, and transparent procedures are indispensable prerequisites for a thriving green finance market. Third, the divergence between Sweden and Latvia highlights the asymmetry of development within the European Union. Uniform regulations, such as the EU Taxonomy, do not guarantee uniform results, which implies that climate and financial policy must be differentiated: advanced economies may benefit from standardization, while less developed markets require targeted institutional and guarantee support. A further conclusion concerns the centrality of transparency and trust. In Sweden, high levels of disclosure and reporting underpin investor

confidence, while in Latvia, the lack of comparable mechanisms has led to market stagnation. This suggests that transparency is not merely a desirable feature but a necessary condition for the functioning of sustainable finance. Finally, the integration of green finance with public policy emerges as a decisive factor. In Sweden, green bonds are a core element of the climate neutrality strategy, while in Latvia they remain peripheral and disconnected from broader policy objectives.

In sum, the qualitative analysis demonstrates that green finance does not develop spontaneously but is the product of institutional, social, and political conditions. Sweden exemplifies how these conditions can foster the dynamic growth of a green bond market with measurable impacts on the SDGs. Latvia, conversely, highlights the barriers posed by weak institutions and low trust, which prevent green finance from contributing to the climate transition. The key implication is that green finance is less a tool to be transplanted universally than a product of mature markets and robust institutions. For EU policy, this means that simply introducing regulations is insufficient; what is required is sustained investment in building the institutional and social foundations necessary for their implementation.

2.9. Results

The results of the empirical analysis, encompassing both quantitative and qualitative sections, allow us to formulate a number of conclusions regarding the role of green finance in achieving the Sustainable Development Goals and identify differences between countries with different levels of institutional development. The cases of Sweden and Latvia provide an interesting point of reference in this context, as both countries are part of the European Union and formally subject to the same regulations, particularly those related to the EU Taxonomy. However, their development paths in the area of green finance have proven to be diametrically opposed. Therefore, the discussion of the results should include not only a summary of the numerical data but also an attempt to place them in a broader theoretical and practical context. In the case of Sweden, we observe a clear connection between the development of the green bond market and the achievement of climate and energy goals. The increasing share of renewable energy sources in the energy mix, the significant reduction in greenhouse gas emissions per capita, and the systematic increase in the share of green bonds in public debt demonstrate that the mechanism of financialization of the climate transition, described by Krueger, Sautner, and Starks (2020), among others, is being practically confirmed. Green finance in Sweden is not treated as a niche financial product but as an integral element of economic and climate policy. The example of Kommuninvest, which plays a central role in capital mobilization at the local level, demonstrates that appropriate institutions can transform the financial market into a tool supporting the

achievement of public goals. In this sense, the empirical results support Flammer's (2021) thesis that the effectiveness of green bonds lies not only in mobilizing funds but, above all, in linking them to clearly defined projects that are assessed for measurable environmental effects. Latvia, on the other hand, remains an example of a country where a lack of institutions and an underdeveloped financial market have prevented the use of green finance as a transformation tool. The lack of sovereign green bond issuance until 2024, the marginal scale of private issuance, the low liquidity of the bond market, and the lack of transparent reporting mechanisms make this market ineffective. Although the share of renewable energy in the energy mix is slowly increasing and emissions are declining, these processes are primarily the result of external financing through EU funds, not the mobilization of domestic capital. This situation is consistent with the conclusions of Bang (2019), who notes that in emerging economies, green bonds may play a marginal role if appropriate institutions supporting their issuance and distribution are lacking. These results suggest that the effectiveness of green finance is not universal but depends on the institutional context and the level of market development.

A comparison of Sweden and Latvia highlights the importance of social capital and trust in institutions. Literature indicates that in Nordic countries, trust in public institutions is among the highest in Europe (Putnam, 2000; OECD, 2022). High levels of trust encourage domestic and foreign investors to engage in financing long-term projects, and society accepts the changes associated with the energy transition. In Latvia, however, the low level of social trust, regularly confirmed by Eurobarometer surveys (2023), constitutes a significant barrier to market development. In practice, this means that even if the first green bond issues were to occur, their effectiveness could be limited by a lack of trust and fears of greenwashing. Theoretically, the research findings align with the concept of ecological modernization (Mol & Sonnenfeld, 2000), which assumes that technological and financial innovations can contribute to reducing environmental pressures without necessarily slowing economic development. Sweden is an example of successful implementation of this concept – greenhouse gas emissions are falling even as GDP per capita continues to rise, demonstrating effective decoupling of economic growth from emissions. Latvia, on the other hand, despite its lower level of industrialization, has not achieved comparable results, demonstrating that decoupling is not possible without the appropriate institutional and financial framework. The empirical results should also be considered in the context of EU regulations. The EU taxonomy was intended to strengthen the role of green finance by standardizing the definition of sustainable investments and increasing market transparency. In Sweden, this regulation worked as expected – it increased transparency, reduced the risk of greenwashing, and contributed to an increase in bond issuance. In Latvia, however, the regulation

remained a dead letter – a lack of institutions and low market liquidity prevented its effective implementation. This demonstrates that EU regulations are not neutral – their effectiveness depends on the implementation capabilities of individual countries. In practice, this means diversifying EU policies and adapting instruments to the development level of member states. The issue of greenwashing also deserves particular attention. The more popular green bonds become, the greater the risk that some issuances will be merely formal, and that the financed projects will not deliver real environmental benefits (Rasche, 2021). In Sweden, this risk is mitigated by detailed environmental reports documenting emission reductions and other effects. In Latvia, the lack of such mechanisms makes the risk of greenwashing particularly high for initial issuances. This demonstrates that transparency and reporting are not merely an adjunct but a fundamental part of the functioning of the green finance market. From a public policy perspective, research findings indicate that green finance can be an effective tool for implementing climate policy, but only when it forms part of a coherent strategy. Sweden has included green bonds in its 2045 climate neutrality strategy, ensuring that the financial mechanism supports public goals. Latvia, on the other hand, treats green finance as an external regulatory requirement, not an integral element of national policy. This leads to the conclusion that the effectiveness of green finance depends on the degree of integration of finance with the state's development policy. It's also worth noting the paradox of the European Union's climate policy. On the one hand, it strives to create a single market for green finance, but on the other, the structure of the community itself is deeply asymmetric. Sweden, as a developed country, benefits from regulations and strengthens its market, while Latvia remains passive, lacking the tools for implementation. This means that a uniform policy, instead of redressing differences, may actually exacerbate them.

The results of the discussion show that green finance is an effective, but conditional, tool. In developed countries, such as Sweden, it contributes to real energy transformation and emission reductions, confirming its role in achieving the SDGs. In less developed countries, such as Latvia, its impact remains marginal due to institutional barriers, low trust, and limited market liquidity. EU regulations strengthen processes where markets already exist, but do not create them where they do not. This implies that effective climate and financial policy must be differentiated and tailored to the specific circumstances of individual countries.

The empirical and qualitative analysis, as well as the discussion of the results, allow us to formulate a number of practical recommendations applicable to the studied countries and the European Union as a whole. The most important conclusion is that green finance does not operate in a vacuum and cannot be treated as a standalone climate policy tool, but should be part of a broader strategy integrating institutional, economic, and social measures. The example of Sweden

demonstrates that success is possible when the development of the green bond market aligns with the country's long-term climate policy and is accompanied by high transparency and investor confidence. The case of Latvia, on the other hand, demonstrates that the lack of such conditions leads to stagnation, or even the complete omission of green finance from the financing structure of the energy transition.

In the Latvian context, the most important recommendation is the need to create an institution that could perform a function similar to the Swedish Kommuninvest—coordinating green bond issuance at the local and regional levels and guaranteeing transparency and credibility for investors. Such an institution would build trust and gradually develop a market that is currently practically non-existent. Following this, the first state issuance of sovereign green bonds, even if small, would be essential to send a signal to domestic and international investors that Latvia is embarking on a path to sustainable finance. Simultaneously, it is necessary to implement reporting standards consistent with the EU Taxonomy and improve competencies within the public administration and banking sector. Without educational and institutional initiatives, the initial issuances could be perceived as greenwashing and fail to fulfil their intended purpose.

Sweden, however, a leader in the development of green finance, now faces entirely different challenges. Its priority is no longer simply launching the market, but rather consolidating it, maintaining a high level of transparency, and combating the growing risk of greenwashing. As the volume of emissions increases, there is a risk that some projects will be financed under the banner of greenness, even though their actual environmental impact will be limited. Therefore, Sweden must strengthen reporting standards and independent verification to maintain its reputation as a leader. At the same time, the country is recommended to diversify its financial instruments – alongside green bonds, it should develop bonds linked to sustainable development, green mortgages, and investment funds focused on innovation in the cleantech sector. This broadening of the range of instruments will increase market flexibility and allow it to reach new investor groups. Integrating climate and social goals is also an important direction, for example, by financing projects that alleviate energy poverty. Only such an approach will ensure broad public acceptance for further transformation.

From the European Union's perspective, it is necessary to move away from a uniform regulatory model and toward a policy that differentiates support based on the level of development of individual countries. The EU taxonomy and other regulations function well in developed countries like Sweden, but remain a dead letter in countries like Latvia. The EU should therefore create guarantee instruments and institutional support for less developed countries to enable them to take their first steps in developing green finance. A good solution could be the establishment of

regional knowledge centres in the Baltic states, which would support the administration and financial sector in preparing issuances and reporting on their results. In the long term, the EU should strive to finance a significant portion of the EU's public debt with green instruments, but to achieve this, it must equalize the starting conditions between highly developed countries and those just starting out. These recommendations are multi-level and complementary. Latvia must build a market from scratch, Sweden should maintain quality and diversify its instruments, and the EU must create a framework that not only regulates but also supports. The common denominator across all actions remains transparency, trust, and the integration of financial policy with climate policy. Only then will green finance be able to serve as an effective tool for transformation across Europe.

3. Conclusions and Recommendations

This study aimed to examine the role of green finance in achieving the Sustainable Development Goals, with particular emphasis on the goals of energy transition and climate action. A comparative analysis of Sweden and Latvia, two countries formally operating under the same EU regulations but representing completely different levels of institutional and market development, revealed contrasts in the effectiveness of green financial instruments and identified factors determining their efficiency. The study's conclusions have both theoretical and practical implications, and also suggest directions for further research on sustainable finance in Europe. The most important finding is that green finance is an effective tool, but not universal. The results for Sweden show that under favourable institutional conditions, in an environment of high social trust, and with the existence of strong public institutions such as Kommuninvest, green bonds can become a catalyst for energy transformation. The increasing share of renewable energy in the energy mix, the reduction of greenhouse gas emissions, and the increasing role of green bonds in the financing structure of public debt are clear evidence that green finance in Sweden is not a marginal element of the capital market, but an integral part of climate and economic policy. Latvia, on the other hand, represents the opposite of this model. The lack of sovereign green bond issuance, low market liquidity, and insufficiently developed institutions mean that green finance plays a virtually non-existent role. The climate transformation in this country relies primarily on external funds, primarily EU funds, confirming that in a weaker institutional environment, green finance remains a potential, not a real, instrument. This stark contrast leads us to reflect that the effectiveness of green finance stems not from the mere presence of regulations or instruments, but from their embeddedness in a broader institutional system. It is not the level of national income or access to natural resources that differentiates Sweden and Latvia, but rather the quality of institutions, political culture, and the degree of transparency and trust. Sweden has developed a

model in which green finance is linked to a long-term climate neutrality strategy, and each instrument is subject to rigorous evaluation and reporting. Latvia, on the other hand, treats green finance as an external requirement rather than a tool of internal development policy, resulting in its marginalization. In this sense, the study confirms the thesis of institutional theory, according to which the quality of institutions, not the instruments themselves, determines the effectiveness of economic and social policies. The conclusions from the analysis also fit into the broader debate on ecological modernization. By reducing greenhouse gas emissions while simultaneously increasing GDP per capita, Sweden confirms the possibility of decoupling economic growth from environmental pressures. Latvia, on the other hand, demonstrates that such a process does not occur automatically but requires appropriate financial and institutional support. Therefore, green finance can be interpreted as a tool enabling the implementation of ecological modernization, but only in countries that have reached a certain threshold of maturity.

The practical implications of this work are multi-level. For Latvia, the most important task is to create institutions capable of coordinating the issuance of green bonds and ensuring transparency in their use. The first issuance of sovereign green bonds should be conducted, even on a limited scale, to build investor confidence and send a signal that the country is entering the green finance market. For Sweden, the key challenge is maintaining a high-quality market by further strengthening reporting standards, diversifying financial instruments, and integrating social and climate goals. Only such an approach will avoid the risk of greenwashing and ensure continued public acceptance of the transition. In turn, the European Union should move away from a single policy and diversify its support instruments. Developed countries need standardizing regulations, while less developed countries need institutional support and guarantee mechanisms that would reduce the risk of initial issuances. However, the study's limitations should also be emphasized. The analysis focused on two countries, limiting the generalizability of the results across the European Union. Furthermore, the study was primarily macroeconomic and institutional in nature, meaning it did not consider microeconomic perspectives, such as the role of individual enterprises or commercial banks. Quantitative data were based on available sources, which, while reliable, are characterized by certain methodological limitations. Finally, the relationships analysed are correlational in nature and do not clearly prove causality. Nevertheless, the study identified key mechanisms that could be verified in future research. The prospects for further research are manifold. First, it is worthwhile to expand the analysis to include other Nordic and Baltic countries to better grasp the dynamics of the region and the diversity of transition financing models. Second, microeconomic studies focusing on the role of banks, investment funds, and enterprises in mobilizing green capital are recommended. Third, quantitative research using

econometric methods should be developed, which could allow for establishing causality between the development of green finance and progress in achieving the SDGs. Finally, research on the risk of greenwashing, which is one of the greatest threats to the credibility and effectiveness of green finance, seems particularly important.

In summary, this work demonstrates that green finance is a key tool of contemporary climate policy, but its effectiveness requires meeting specific institutional and social conditions. Sweden is an example of a country where all these conditions have been met, which has translated into a real impact on SDG implementation. Latvia, on the other hand, demonstrates that a lack of institutions and trust causes stagnation, despite the formal application of the same regulations. From an EU policy perspective, this means diversifying support and taking into account asymmetries between member states. From a theoretical perspective, the work confirms the importance of institutions and social culture in the effectiveness of financial instruments. From a practical perspective, it provides guidance for policymakers, financial institutions, and investors. Ultimately, green finance should not be treated as a universal cure-all for climate problems, but as a tool whose effectiveness depends on contextual conditions. This message constitutes the work's most important contribution to the debate on the role of finance in the transition towards sustainable development.

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Summary in Lithuanian

Magistro baigiamasis darbas susijęs su augančiu žaliųjų finansų vaidmeniu įgyvendinant darnaus vystymosi tikslus ir jų svarba šiuolaikinių aplinkos ir ekonomikos iššūkių kontekste. Klimato krizės akivaizdoje ir būtinybei paversti ekonomiką į mažai teršiančią, žalioji finansavimas tampa pagrindine priemone, remiančia ekologinius projektus, tokius kaip atsinaujinančių energijos šaltinių ar tvarios infrastruktūros plėtra. Empirinė dalis grindžiama dviejų šalių, turinčių skirtingą žaliųjų finansų rinkos išsivystymo lygį, lyginamąja analize: Švedijos – šios srities pradininkės ir pasaulinės lyderės – bei Latvijos, kurioje ši rinka vis dar menkai išplėta. Tyrime suformuluotos trys hipotezės dėl žaliųjų finansų poveikio DVT įgyvendinimui, priemonių veiksmingumo skirtumų tarp labiau ir mažiau išsivysčiusių rinkų bei ES taksonomijos įgyvendinimo svarbos. Tyrimo metodologija paremta duomenų trianguliacija, derinant kiekybinę ir kokybinę analizę. Statistiniai duomenys (atsinaujinančiosios energijos dalis, ŠESD išmetimas vienam gyventojui, žaliųjų obligacijų dalis valstybės skoloje) gauti iš „Eurostat“, EEA ir Klimato obligacijų iniciatyvos duomenų bazių, o kokybiniai – iš institucijų ataskaitų (įskaitant „Kommuninvest“ ir Latvijos finansų ministeriją) bei ES strateginių dokumentų. Kiekybinė analizė atskleidė tendencijas 2015–2024 m., o kokybinė – nustatė sėkmės veiksnius ir kliūtis, tokias kaip institucijų vaidmuo, pasitikėjimo kultūra, atskaitomybės skaidrumas ir viešosios politikos nuoseklumas. Rezultatai rodo procesų darną Švedijoje – žaliųjų obligacijų rinkos plėtra vyksta kartu su atsinaujinančių energijos šaltinių dalies augimu bei CO₂ emisijų mažėjimu, o tai patvirtina žaliųjų finansų veiksmingumą kaip transformacijos katalizatoriaus. Latvijoje, priešingai, išvystyto finansų rinkos mechanizmo nebuvimas ir žemas institucinio pasitikėjimo lygis reiškia, kad net esant palankioms gamtinėms sąlygoms ir prieigai prie ES fondų, poveikis DVT išlieka ribotas. Kritinė refleksija leidžia daryti išvadą, kad žalieji finansai yra sąlyginė priemonė – veiksminga tik brandžių institucijų, aukšto skaidrumo ir socialinio pasitikėjimo sąlygomis. Straipsnyje pateikiamas teorinis indėlis, parodant žaliųjų finansų plėtros ir institucijų kokybės ryšį, bei praktinis indėlis, pabrėžiant, kad ES reglamentai reikalauja diferencijuoto požiūrio: standartizacijos išsivysčiusiose šalyse ir institucinės bei garantinės paramos mažiau išsivysčiusiose valstybėse.

Summary in English

The master's thesis concerns the growing role of green finance in the implementation of the Sustainable Development Goals (SDGs) and their importance in the context of contemporary environmental and economic challenges. In the face of the climate crisis and the need to transform economies into low-emission ones, green finance is becoming a key tool supporting ecological projects, such as the development of renewable energy sources or sustainable infrastructure. The empirical part is based on a comparative analysis of two countries with different levels of green finance market development: Sweden – a pioneer and global leader in this field – and Latvia, where this market remains underdeveloped. The study formulates three research hypotheses regarding the impact of green finance on the achievement of the SDGs, differences in the effectiveness of instruments between developed and less developed markets, and the importance of implementing the EU Taxonomy. The study's methodology is based on data triangulation, combining quantitative and qualitative analysis. Statistical data (the share of renewable energy, GHG emissions per capita, and the share of green bonds in public debt) were drawn from Eurostat, EEA, and Climate Bonds Initiative databases, while qualitative data came from institutional reports (including Kommuninvest and the Latvian Ministry of Finance) and EU strategic documents. Quantitative analysis captured trends from 2015 to 2024, while qualitative analysis identified success factors and barriers, such as the role of institutions, a culture of trust, transparency in reporting, and the coherence of public policies. The results indicate a coherence of processes in Sweden – the development of the green bond market goes hand in hand with an increase in the share of renewable energy sources and a decrease in CO₂ emissions, confirming the effectiveness of green finance as a catalyst for transformation. In Latvia, the lack of a developed financial market and low institutional trust mean that even with favorable natural conditions and access to EU funds, the effects on the SDGs are limited. Critical reflection leads to the conclusion that green finance is a conditional tool – effective only in an environment of mature institutions, high transparency, and social trust. The paper makes a theoretical contribution by demonstrating the relationship between the development of green finance and the quality of institutions, and a practical one by pointing out that EU regulations require a differentiated approach – standardization in developed countries, and institutional and guarantee support in less developed countries.