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## **INVESTMENTS IN THE GREEN ECONOMY INITIATIVES AND THEIR INFLUENCE ON THE PROFIT OF ECONOMIC SUBJECTS**

**Abstract:** *This article dwells on the interconnection between the processes of investing in the green economy and the financial results of economic subjects. Attention is paid to theoretical and methodological substantiation of the presence of this connection and the availability of different approaches to the treatment of expenditures for solving environmental problems through financial profit. The formation of a new paradigm, within which investing in green projects is considered a factor of new opportunities, development, and effectiveness, is noted.*

*The essence of the green economy and its components is considered, with an analysis of each component and its contribution to achieving the Sustainable Development Goals and green transition. The mechanism of the influence of environmental investments on the formation of financial results of economic subjects is determined, and the influence of investments by individual components of the green economy in expenses and revenues is identified. The volume and structure of investment expenditures on green economy initiatives are analysed, the need for such investments is established, and the necessity for raising the volume of investments to achieve zero emissions until 2050 is emphasized. Results of correlation analysis are given, which confirm the connection between the level of green economy development and the general level of economic development.*

**Keywords:** *Investments, Investing, Ecology, Green economy, Financial result, Profit, Sustainable development, Decarbonization, Green transition.*

### **1. Introduction**

Since the 1960s, environmental problems have become an object of public discussion. Numerous environmental movements began drawing attention to such phenomena as environmental pollution, climate change, depletion of natural resources, reduction of

biodiversity, etc. These issues became gradually institutionalised. Starting from protest measures and the creation of public organisations in the 1960s – 1970s, environmental activity continued in the political sphere.

Gradual dissemination of the environmental movement caused a need for adopting global

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environmental standards, which was first realised at the UN international conference in Rio de Janeiro. 1992 saw the adoption of the Rio Declaration on Environment and Development, which determined 27 key principles of sustainable development and environmental protection. These actions allowed for a transition to a new level of environmental activity through the consequent adoption of a range of other global regulatory acts and standards, such as the Kyoto Protocol (1997) (obligations on the reduction of greenhouse gas emissions). The next stage was the adoption of the Paris Agreement in 2015, which provided an impulse for international cooperation in tackling climate change and established countries' obligations in the reduction of emissions and adaptation to the consequences of climate change.

Since the 2000s, the environmental movement reoriented towards the concept of sustainable development. This was connected with the adoption of the UN Millennium Development Goals, which contains goals on environmental protection and the fight against poverty and discrimination. Thus, environmental problems received a context of equality and inclusiveness. However, from the beginning of the public discourse until early 2010, environmental problems and problems of sustainability were treated as alternative scenarios of development. They were poorly combined with economic processes and neglected the priority of profitability of business compared to other goals. This situation significantly limited the implementation of environmental projects and their economic attractiveness.

Since 2010, there has been a gradual formation of the "green economy", aimed at a combination of two important trends – economic growth and environmental sustainability. The importance of the economic foundation of environmental development and sustainability was manifested in different forms, from the growth of the value of environmentally

sustainable companies to the growth of the level of profitability of green investments. Thus, instead of the status of financial burdens, environmental projects in the context of the green economy received the status of financial and economic opportunities. The ability to identify and realise these opportunities still requires a lot of effort, but examples of the financial success of many environmental solutions and projects form a good level of motivation for all interested parties.

Despite this, the transition to the green economy still faces many problems, connected with a high level of initial investments, technological and administrative barriers, and the necessity to adapt business processes and strategies to new conditions. Therefore, the study of the problem of the influence of investments in the green economy on the level of economic subjects' profitability is a relevant scientific and practical task, which lies in the dimension of institutionalisation of sustainable development and commercialisation of environmental values. Understanding the mechanisms of formation of financial results in the conditions of investments in the green economy in the context of the research is one of the key factors of popularisation of green ideas and values and achievement of success in environmental transformation, decarbonization of the economy, tackling climate change, etc.

## **2. Methodological basis of the research**

The issue of the connection between investments in green initiatives and the level of economic subjects' effectiveness has a strong methodological basis, which goes back to the 1970s. This discussion was started by M. Friedman, who stated that investments in social responsibility distract the financial resources of the company from less profitable projects and lead to the reduction of investment effectiveness

(Friedman, 1970). This point of view was dominating in the business environment until the mid-1980s, when R. Freeman formed the Stakeholder Theory, which he substantiated the positive influence of environmental, social, and economic interaction of companies and their stakeholders on their long-term sustainability and an increase in market value (Freeman, 1984).

There are many theories and concepts, which justify the positive influence of social and green initiatives on the economic state of economic subjects and their competitiveness. Thus, M. Porter and M. Kramer formed a vision of how the integration of social and environmental initiatives in their business strategy helps companies achieve double results, which is manifested in an increase in the level of profitability and improvement of long-term prospects (Porter and Kramer, 2011). Developing this vision, modern scientific works focus not only on the financial effectiveness of sustainable investments and reputational dividends but also on the creation of new opportunities (formation of the market of energy-efficient solutions and organic products, development of sustainable construction and renewable energy, etc.). Other important effects of investing in social and environmental initiatives are the acceleration of innovative development and the achievement of positive influence on society.

The green economy allows reconsidering traditional approaches to the formation of economic results, received due to investing in environmental and social initiatives. According to this, empirical studies confirm that companies that actively support green initiatives achieve much higher financial results. The reason for this is not only long-term reputational effects but the creation of new values through the influence on the environment of businesses and consumers. Other conceptual changes in companies' investments are manifested through the transformation of the investment paradigm. According to this, criteria of sustainability

are taken into account during the development and assessment of investment strategies in most companies in countries with a developed company. At the same time, insufficient attention to sustainability within the investing process leads to the deterioration of the investment attractiveness of such companies (Cimini and Kalantzis, 2024).

The positive influence of sustainable investments on the financial result of companies is often achieved due to quality technological innovations, such as the development of alternative energy, the formation of the opportunity to track carbon footprint along the entire course of formation of product value, reduction of material-intensity and energy-intensity of production, etc. In-depth analysis of the results of activities allows supplementing traditional models of effectiveness assessment with social and environmental criteria, which are considered from the position of improvement of the profitability level, which is achieved against the background of environmental initiatives implementation.

From the position of its influence on economic subjects' profits, the methodology of investing in the green economy combines different approaches to understanding the mechanisms of interaction between economic and environmental processes, based on the advantages of economic motivation in business or systemic understanding of economic activities of the economic subjects in the interconnection with environmental, climate, or social phenomena. Thus, the theoretical basis of the research combines views of political economy, management, public management, and investing, which are set on environmental, climate, social, and institutional pressure. This leads to the formation of concepts that rationally interpret the above processes within social responsibility, ESG management, or the green economy.

The institutional basis of investing in the green economy initiatives is founded on important elements of global and national policies, which supplement each other and cover the following:

- Creation of a favourable environment to attract capital necessary for financing green initiatives;
- Expansion of accessibility of data on the real influence of environmental investments on the economic results of activities;
- Using effective forms and tools of ESG reporting (Meino-Saum et al, 2020).

The main methods used in this research are based on the system approach, which allows studying them in the interconnection from the position of mutual dependence. They include the methods of analysis and synthesis, which allow studying individual elements of the investment process in the conditions of the green economy and its general impact on the profitability of business; methods of observation and comparison, which allow tracking changes in processes and assessing their scale; methods of generalisation and extrapolation, which allow determining cause-and-effect relationships between environmental and economic processes and forming conclusions and forecasts regarding further actions. A separate category is correlation analysis, which is a method of mathematical analysis and modelling and allows proving or disproving the connection between the mentioned factors.

### **3. Experimental setting and methods**

From the position of the dominating economic paradigm, financial results of economic subjects' activities are formed as a result of the comparison of profits and expenditures. An increase in profits leads to an improvement in the financial result, and an increase in expenditures is one of the

factors of its deterioration. In the conditions of acute environmental challenges and the dynamic development of technologies, this paradigm requires clarification and correction. According to this, factors of receiving profits and directions of expenditures are also included in the general methodology of determining the financial result through the lens of environmental risks and correspondence to general public values.

Given this, certain sources of profit, which are connected with the exploitation of natural resources, growth of emissions, or aggravation of the environmental situation, are interpreted as undesirable and require control. At the same time, expenditures for solving environmental problems, raising energy efficiency, and reducing resource spending are considered favourable for the final financial result.

Changes in the paradigm of financial result formation in the environment of economic subjects are connected with the development of the corresponding institutional environment, which is based on the concept of sustainable development, ESG reporting, green growth, and the green economy (Bogoviz and Sergi, 2018). They are based on the striving towards the popularisation and development of environmentally responsible activities at all levels through the use of the appropriate measures of motivation. Administrative methods at global, national, and local levels form the second level of motivation and involve the adoption and execution of regulatory acts, redistribution of financial resources, strict administration of the processes of using natural resources, interaction with the environment, etc. The problem with these methods is their reactive essence, due to which they require financial support, which is ensured through special funds, crowdfunding, targeted government financing, grants, etc.

A much higher level of motivation is seen in the economic factors of investing in green

initiatives. They are based on economic interest, which is achieved due to quality managerial actions aimed at the resolution of environmental problems with simultaneous achievement of economic effect. Despite the obvious advantage of this group's methods, there is a problem with the implementation of the corresponding projects due to difficulties with the identification of connections between environmental actions, financial expenditures, and financial results. To justify and confirm the presence of such a connection, it is necessary to conduct additional research, which would allow determining the presence, direction, intensity, and duration of the influence of economic motivation, implemented within the green economy, on the financial results of economic activities.

The information, theoretical, and methodological basis for such research is formed by the concepts of sustainable development, ESG investing, social responsibility of management, etc. which are most completely realised within the green economy. The concept of the formation of a comprehensive economic system, which functions based on the self-sufficiency of economic agents and the priority of environmental goals, is one of the concepts that allow achieving the Sustainable Development Goals in the most optimal and rational method. Due to the economic basis and value provisions, the green economy is an effective environment for the implementation of environmental projects. One of the conditions of success in this situation is the economic and investment attractiveness of such measures.

Thus, the research goal involves the identification of the character and mechanisms through which investments in green projects help not only solve the problems of sustainable development but also improve the financial state of economic agents. Therefore, the main hypotheses of this research are as follows:

Hypothesis 1. Success in the development of the green economy is closely interconnected with the financial and economic development of the country.

Hypothesis 2. Different tools and components of the green economy ensure the influence on the profitability of economic subjects, which have different natures and characters.

## **4. Results**

The future development and existence of our planet depend on present-day decisions. Our existence in the universe is a joint task of the entire mankind. Moreover, climate and environmental processes on the Earth do not have geographical boundaries. Fragmentary actions and measures in some regions might not bring important results without systemic and complex activities. Thus, green transition only in the countries of the Global West and China does not allow achieving the goals of decarbonization, adopted for the period until 2050. Moreover, if consumption rates in developing economies exceed expectations, the environmental situation will significantly worsen (Kuper, 2023).

Triple crisis at the scale of the planet, which covers climate change, environmental pollution, and loss of biodiversity, requires the identification of causes of this state and factors that lead to the current problems and risks. Turning these risks into the form of expenditures required for their elimination is one of the tools for their identification and control. This approach allows determining the real cost of emissions and used resources with their simultaneous inclusion in the models of management decision-making. This vision is an important tool for moving environmental problems into the economic dimension.

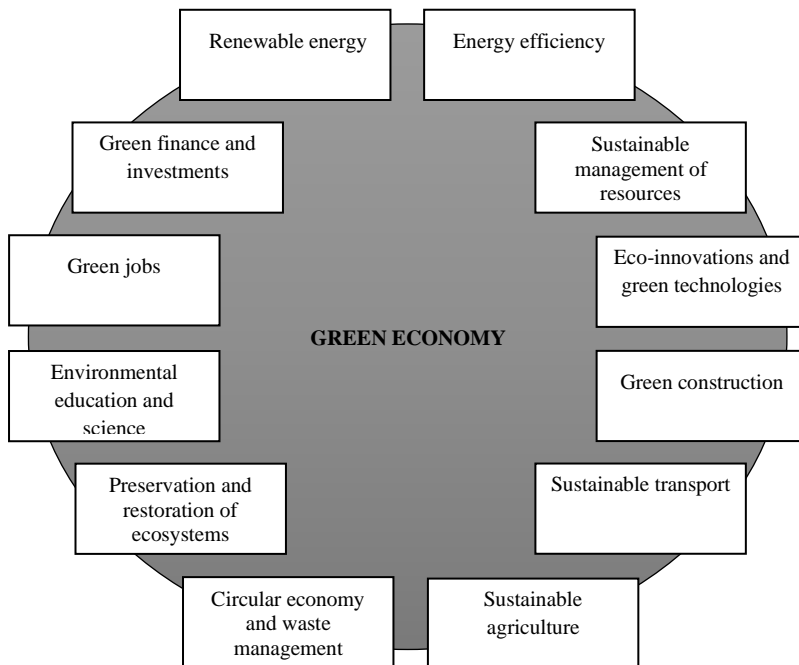
The world economy depends on global climate processes. According to the World Economic Forum, more than half of the world's GDP (around \$ 44 trillion) moderately or strongly depends on climate

and natural factors (Tsao, 2024). Given this, investing in green initiatives is treated not only as a charity initiative but also as a contribution to operational risk management. The green economy is a model of mankind’s economic development. It is based on the realisation of the connection between environmental and economic processes. One of the main stages in the establishment and popularisation of the concept was the publication of the Blueprint for a Green Economy report by D. Pearce. Later this definition was clarified, and the green economy was treated as an economy capable of self-reproduction, which is done on a stable constant basis.

The main features of the green economy lie in its ability to raise the effectiveness of using natural resources and energy to gain profit. The emphasis in the study of the connection between these processes is often put on the confirmation of the fact of the slowdown of the rates of resource

consumption from the position of the growth of economic indicators (Nurgissayeva and Tamenova, 2020). This result is achieved due to active investing in the leading innovative technologies and the attraction of strong financial donors.

The scientific community and experts treat the green economy as a complex multi-dimensional concept, which includes different economic activities. Each of them influences sustainable development and green transition. There are different approaches to the identification of the components of the green economy, but the most general classification sees its components as the energy block and sustainable management of resources; the innovative and technological block; sustainable sectors (transport and agriculture); nature protection and development of ecosystems; and infrastructural block (Figure 1).



**Figure 1.** Key components of the green economy

Source: Formed by the authors based on (Nurgissayeva & Tamenova, 2020; Merino-Saum, et al, 2020; United Nations Environment Programme, 2017

All components of the green economy are closely integrated. They cooperate to achieve a complex effect, which includes environmental sustainability and social justice, which are achieved through economic growth. The contribution of each component to the general result is different and forms its unique characteristics. Thus, renewable energy involves the development and implementation of the technologies of generation, accumulation, and rational use of wind, solar, geothermal, and biological energy. Its task is the key one, for replacement of fossil fuels is the main factor in decarbonization. Energy efficiency also contributes to decarbonization through the search for solutions to optimisation of energy consumption, increase in energy efficiency of production, and improvement of energy saving in all economic sectors. The main task in the sphere of the energy block is the formation of demand for energy-efficient solutions and the achievement of economic effectiveness of energy saving. A similar task is peculiar to sustainable management of resources, which includes aspects of water use, land use, and minerals use and is aimed at the reduction of the level of resource consumption per unit of produced products or consumer services.

Energy- and resource-saving is ensured in different sectors of the economy and everyday life, but it is based on different directions of the green economy. Green construction helps reduce the volumes of energy and resources used for heating and cooling of buildings, as well as consumption of water and other resources. Eco-innovations and green technologies are the basis for quality support of all changes. The circular economy and waste management ensure waste reduction and a decrease in resource consumption.

Sustainable transport and agriculture are among the most important sectors in the green economy, for they have the highest potential in decarbonization and reduction of anthropogenic influence on the environment and are characterised by a high level of

investment attractiveness in the context of the use of eco-innovations. From the position of economic motivation, the preservation and restoration of ecosystems is rather difficult. However, activities aimed at the recovery of forests and water resources allow increasing the general resource support of the economy and have good long-term prospects.

In this context, green finance and investments play one of the key roles, for they offer a range of financial tools to achieve environmental projects, including green bonds, carbon loans, etc. Additional elements of the green economy infrastructure are the sectors of education, science, and employment. All of them form intellectual potential and provide a basis for the functioning and development of the green economy.

On the whole, the green economy is viewed as a factor in the achievement of the Sustainable Development Goals, which is realised through the search and application of the economic mechanisms of stimulation. The basis for such mechanisms is financial results and profit, which companies receive through investments in green initiatives. Each of the directions of the green economy offers such motivation, influencing expenditures and profits of companies and offering a long-term perspective.

The main mechanisms of achieving economic effectiveness within the green economy are as follows:

- Reduction of operational expenses;
- Increase in productiveness;
- Diversification of revenues due to the change of business models in the conditions of the use of new types of energy, materials, and technological solutions;
- Growth of competitiveness, according to the global environmental context and a high level of investors and consumers' attention to the environmental activities of companies;

- Reduction of the level of risks; and economic problems due to financial subsidies.
- Long-term stability, which is ensured through care for the environment, conditions of production activities and consumers, and improvement of the population's quality of life; On the whole, apart from the environmental influence, the key directions of the influence of green investing on economic subjects' profit in the context of the components of the green economy are given in Table 1.
- Accessibility of green financing, which allows solving environmental

**Table 1.** Key economic effects of investing in the green economy initiatives

Direction of investing	Influence on expenditures	Influence on revenues	Long-term effect
Renewable energy	Reduction of expenditures for energy consumption	Possibility of receiving revenues from energy sales	Energy independence
Energy efficiency	Reduction of operational costs	Increase in effectiveness and competitiveness	Optimisation of production processes
Green construction	Reduction of exploitation costs	Growth of real estate value	Improvement of the quality of life and labour conditions
Electric transport	Reduction of fuel and maintenance costs	Additional subsidies, free working capital	Diversification of transport network
Circular economy	Reduction of expenditures for resources and waste disposal	Additional revenues from resource processing	Resource resilience
Green innovations	Potential initial increase in R&D costs	Revenues from selling new products and forming new markets	Technological leadership

Source: Formed by the authors based on (Cimini & Kalantzis, 2024; Kuper, 2023; Mealy & Teytelboym, 2022; Simonin et al., 2022).

Against the background of these effects, it should be noted that the volume of investments in the green economy grows annually. One of the main directions of this investment is energy transition. Investments in energy with low carbon share equalled \$1.77 trillion in 2023, of which 36 % accounted for the sector of electric transport, 35 % - for renewable energy, and 17.5 % - for electric networks and infrastructure. In the geographical structure of investments, the first position belongs to China, which invested \$670 billion. The USA, the EU, and the UK invested \$737 in total. New directions of investing include activities in the sphere of hydrogen alternative energy, carbon capture, and energy storage. At the same time, the current volumes of investing

are insufficient to achieve zero level of carbon emissions until 2050 (Bloomberg Finance, 2024).

The main factor in the fight against climate change is the decarbonization of the economy and consumption. According to the SDGS, zero carbon emissions should be achieved by 2050.

Reports by McKinsey provide an approximate assessment of the volume of investments necessary for the achievement of the required level in time. This is \$3.5 trillion annually (Broom, 2022). This sum exceeds the real volume of investing by 60 %, accounts for 7 % of global expenditures of households, and 50 % of corporate revenues. Countries that implement the principles of the



environmental economy, must substantially transform the global economy, business models, and the labour market. Thus, active investing in environmental initiatives requires larger volumes and more decisive and quality actions for the transformation of the modern economy's business models.

An increase in investment activities in the sphere of decarbonization of the world economy will influence many processes and sectors, leading to transformation of the labour market, change in the sources of profit formation, etc. (Broom, 2022). To ensure a quality transition, company managers must see not limitations and risks in decarbonization but opportunities for the development and improvement of the financial state. This approach will allow them to invest more effectively, achieving the results of decarbonization together with the receipt of financial profit.

Assessing the impact of green investments on sustainable economic growth, scholars offer models that confirm the existence of such a connection, which is manifested not only in the reduction of environmental risks and increase in the level of sustainability but also in the improvement of companies' financial results (Steblyanskaya et al., 2020). Another important aspect is the achievement of effects in the sphere of product quality, increase in regional sustainability and improvement of living conditions (Savovic et al., 2016).

Attention to the transformation of business processes, with active investing in the environmental sphere, is very important. In this context, emphasis is made on many aspects of ensuring quality management, which could be achieved due to the implementation of the continuous improvement concept (Sesar, 2024), active use of the digital tools of analytics and governance (Cimini and Kalantzis, 2024),

development of green investment market, etc.

The aggregate indicator, which characterises the state of development of the green economy of countries is the Global Green Economy Index (GGEI). This index assesses the effectiveness of countries by such directions of the green economy development as political leadership and changes and improvement of the environmental situation and investment attractiveness of the clean energy market. The basis for calculating the integrated (GGEI) Overall Indicator is two components – Progress result and Distance result. The first one assesses the percentage of executed actions and measures necessary for the achievement of the environmental goal. The second one assesses the proximity to the goal. The values of both indicators are evaluated from zero (0.0), when the research object is at the initial stage, to absolute (1.0), when the object fully reaches the designated environmental goals. As of May 2024, the leader in progress was Ireland (0.675), and the leader in distance to the goal and the general indicator was Sweden (0.888 and 0.799, respectively). On the whole, the GGEI ranking includes 160 countries and varies from 0.262 to 0.799.

To check the hypothesis on the dependence of success in the development of the green economy on the financial and economic development of countries, a correlation analysis for 154 countries of the sample was performed. From the official sources for all sources of the sample, indicators characterising the indicators characterising the indicators of the index of green economy development and indicators of GDP per capita (current US\$) were selected. The results of the correlation analysis are given in Table 2.

**Table 2.** Results of the correlation analysis of the green economy development and GDP per capita

Indicators	Progress result (percentile)	Distance result (percentile)	Overall Indicator (percentile)	GDP per capita (current US\$)
Progress result (percentile)	1			
Progress result (percentile)	0.252	1		
Distance result (percentile)	0.446	0.978	1	
GDP per capita (current US\$)	0.255	0.557	0.570	1

Source: Calculated by the authors based on (Dual Citizen, 2024; World Bank Group, 2024).

On the whole, the results of the analysis showed a medium connection between the level of economic development and the achievement of environmental goals by countries of the world ( $r=0.570$ ). The integral indicator (Overall Indicator) has the highest correlation with GDP per capita. The distance result has a weaker correlation ( $r=0.557$ ), and the Progress result demonstrates a low level of correlation with this indicator ( $r=0.252$ ). Such results allow stating the existence of a rather high correlation connection between the state of economic and green development of the economies of countries of the world. The conclusions obtained strengthen the arguments in favour of the necessity for further investing in green economy initiatives to achieve economic and environmental results and reduce risks connected with climate change and the deterioration of the environmental situation. It is also necessary to mention the fact that European countries dominating in the development of the green economy. The key factors determining the success of the region's countries in green initiatives development are programmes and quality tools for investing in economic decarbonisation. At the same time, the current energy crisis predetermines processes that form new challenges for Europe's green transition. Thus, the relevance of energy saving and energy efficiency is set onto new technological solutions, raising the attractiveness of green energy. Together with this, rates of such investing and its return are insufficient to achieve the planned goals. In this context,

most European companies invest in the reduction of emissions but do not have sufficient resources for investments in the adaptation of infrastructure, relying on the government's support in this issue (European Investment Bank, 2024).

## 5. Discussion

Most studies on the existence of the connection between investments in green economy initiatives and the effectiveness of economic subjects were conducted based on the data on developed countries. Results showed the presence of a direct connection between these processes, especially in the case of ensuring a sufficient level of investment for quality changes. At the same time, the issues of sufficiency of investments required for substantial results of the environmental transition and achievement of the positive influence on the financial results of companies that invest in these measures are not elaborated enough and require more in-depth and comprehensive research. This task is particularly relevant for countries with low and medium levels of income per capita, for there are the highest expectations of the positive influence of green investments on economic development in these countries.

Other important problems requiring further research include the application of green investments. It is necessary to combine green and digital investments to achieve a favourable effect and development of the green economy and financial state of companies. Other directions of green

investing also require more detailed study from the position of ensuring a positive effect on green transition and achievement of high financial results.

A separate aspect of the discussion is the determination and description of the mechanism of the influence of investments aimed at the resolution of environmental problems on the financial results of economic subjects' activities. This problem requires the formation of a large array of information and creation of appropriate models that would allow proving this connection and identifying its nature and intensity. Solving the problem of modelling these links between investments in the green economy and financial results might give an additional impulse for the acceleration of the green transition.

## **6. Conclusions**

There exists empirical proof of the fact that investments in green economy initiatives positively affect the financial results of economic subjects. The basis for this connection is the corresponding mechanisms through which investments ensure the reduction of operational costs, facilitate an increase in productivity, diversification of incomes, and growth of the level of companies' competitiveness. Each direction of the green economy, including renewable energy, energy efficiency, green construction, electric transport, the circular economy, and green innovations, offers specific economic benefits in the short and long term. According to this, the achievement of environmental effects is

combined with economic results, which allows strengthening the positive effect of environmental investments in the conditions of the green economy.

The results of the correlation analysis confirmed the presence of a medium connection between the level of countries' economic development and their achievement of environmental goals. This is a sign of countries with higher levels of GDP per capita demonstrating better indicators in the green economy development. At the same time, to achieve the global goal of decarbonization by 2050 it is necessary to significantly increase the volume of investments in green initiatives. Given this, a better understanding of the mechanisms of the influence of green investments on the level of profitability of economic subjects will allow raising the attractiveness of green projects and socially responsible behaviour of economic subjects.

This research demonstrated the necessity for further study of the issues of sufficiency of green investments to receive positive economic effects, especially for countries with medium and low levels of income. Another relevant issue is the optimal application of green investments and their combination with digital technologies to maximise the positive effect on companies' financial results and accelerate the green transition of the economy on the whole. Further studies in this sphere will help better understand and model the links between green investments and economic effectiveness.

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