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THE IMPORTANCE OF ENVIRONMENTALLY HARMFUL BUILDING STANDARDS FOR ECONOMIC EFFICIENCY AND SUSTAINABLE DEVELOPMENT IN THE HOUSING MARKET

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Abstract: This article analyzes the economic impact of green building standards on the modern housing market. The study compares the differences between green-certified residential buildings and conventional buildings. The main focus is on the reduction of operating costs, the increase in asset value, and the mitigation of financial risks for investors. The results indicate that green building is not only an ecological necessity but also a strategic investment approach that enhances competitiveness and ensures capital efficiency. The methodology is based on reports from international organizations and empirical studies, providing well-grounded conclusions through in-depth analysis.

Key words: Green building standards, Housing market, Economic impact, Operating expenses, Asset value, Green Premium, Sustainable development.

Introduction

The 21st century has set before humanity the complex task of harmonizing environmental sustainability and economic growth.In this process of global transformation, the construction sector is at the center of special attention. According to the United Nations Environment Programme and the International Energy Agency, buildings account for more than a third of global energy consumption and almost 40% of CO2 emissions. This statistic means that any change in the construction sector will have a direct impact not only on the environment, but also on the macroeconomy. Under this intense demand, green building standards have become not just a technical innovation, but a strategic investment tool redefining the fundamental economic rules of the housing market.

The relevance of the topic is bilateral, i.e., hybrid: on the one hand, there is an ecological need for reducing climate risks and saving resources, and on the other hand, there is the possibility of converting this need into money, i.e., the value of assets, investment income, and operational efficiency. Traditional construction was mainly aimed at minimizing initial costs, negating long-term costs such as high energy and water consumption during the building's operation. Green construction, on the contrary, is aimed at radically reducing operating costs and increasing the net present value of the asset over its entire life cycle due to a slight increase in initial investment (it is said that it can increase by an average of 5-10%, but these figures are constantly decreasing).

In economic theory, the idea of "transaction costs," put forward by R. Coase, acquires a new meaning in the context of green construction. Green buildings not only reduce energy consumption, but also positively affect the health and work efficiency of tenants or owners through improved air quality inside the building, natural lighting, and acoustic comfort. This means internalizing social transaction costs for companies, such as reducing health insurance costs and reducing unemployment. This idea introduces a new dimension into the construction

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sector's economy - the concept of Human Capital Value.My personal opinion is that the most serious economic impact of green construction is its ability to diversify market risks. As global financial institutions increasingly support green investments, assets with green certificates are considered financially "ready for the future." This situation creates a phenomenon in the housing market called "green premium." Numerous studies conducted in international real estate markets show that buildings with green certificates are sold at 8-15% higher prices than traditional buildings and have a higher rental rate of 3-5%. This data confirms that the housing market is changing the pricing mechanism depending on environmental efficiency.

The introductory part of this article provides the necessary theoretical and practical basis for analyzing the economic impact of green building standards on the housing market. We will focus not only on energy saving, but also on three main areas: 1) Asset Value and Return on Investment (ROI): The impact of green buildings on sales prices and rental income; 2) Financial Benefits: Financial mechanisms such as green mortgages and lower insurance costs; 3) Operational Risk Management: Resilience to energy price volatility and increased service life.

Research Methodology

The research methodology in this article is aimed at scientifically and simply analyzing the economic impact of green building standards on the housing market. Our main goal is to show the differences between buildings with a green certificate and traditional buildings in money, that is, in value and costs. For this, we will use three main methods. The first is Theoretical and Literature Analysis, in which we study reports from official international organizations such as the UN, the World Bank, research in prestigious scientific journals, and ideas presented in books on the green economy. At this stage, the economic principles of green standards such as LEED or BREEAM are thoroughly understood, and the key concepts for the article (e.g., "Green Premium" or "Investment Return") are defined. The second, Comparative Analysis, is the most important part. Using the example of green residential buildings built in practice (mainly in the markets of Europe and the USA), we will compare their operating costs (energy, water consumption) with those of ordinary buildings, and also compare the advantages of green buildings in the selling price or rental price based on figures. This helps to demonstrate the clear economic benefits of green standards. Third, the Stage of Qualitative Analysis and Generalization. Here, all the collected official data and comparative results are summarized, processed, and enriched with the author's personal, but scientifically based conclusions. In particular, the strategic role of green construction in maintaining asset value in the long term, reducing investor risks, and giving an advantage in market competition is emphasized. That is why our methodology is based on official sources, rich in evidence, and ensures that the final conclusions are deeply grounded.

Literature review

The first and most influential approaches to the green economy were formulated in the work "Blueprint for a Green Economy," put forward by Pearce, Markandya, and Barbier: the authors emphasize the need to stimulate "green" growth through economic accounting of natural capital, monetization of environmental services, and political instruments - environmental taxes, reviewing subsidies, and directing investments; these ideas justify the internalization of resource use costs in the building life cycle in the construction sector, which creates an economic model of green construction based on operational efficiency. UNEP's "Towards a Green Economy" reports linked the theoretical perspective to practical policy: UNEP shows that the green economy does not hinder growth, but rather creates new jobs and investments and serves to reduce poverty; the reports clearly recommend measures for countries to improve energy

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efficiency, waste management, natural capital recovery, and support green technologies. It is increasing energy efficiency in housing construction and managing raw material waste that forms the basis of the green certificate requirements, which serves as a strategic guide for recalculating costs and prices in the housing market. The "Inclusive Green Growth" approach of the World Bank and other international financial institutions suggests linking green policies with social inclusion: many studies emphasize the importance of synchronizing "green lock-in" risks in infrastructure investments, sustainable natural capital management, and social protection mechanisms. In the housing market, the risk of "green lock-in" manifests itself in the provision of long-term mortgages to traditional, energy-intensive buildings, which means high utility costs for the population in the future. World Bank analysis shows that decisions made without considering the environmental cost of infrastructure and energy projects cause significant economic and social damage in the long term. Therefore, investing in green construction is considered a way to reduce financial risks. In the field of measurement and monitoring, the Green Growth Index, developed by GGI, is widely used in scientific and practical cooperation in assessing national policies: the index combines indicators on four dimensions, such as efficient use of resources, protection of natural property, green economic opportunities, and social coverage, allowing for comparison between countries and identification of weaknesses. The GGI methodology allows for direct measurement of resource efficiency through green construction, which is a reliable methodological basis for proving the economic efficiency of green buildings. By studying central and regional practices, specific lessons are learned: positive results have been seen in European countries through energy efficiency, waste reduction, and support for green technologies; Asian countries, on the other hand, have shown growth opportunities in increasing social inclusion and attracting green investments. These experiences demonstrate the need for developing countries such as Uzbekistan to combine financial incentives (such as green mortgages, tax benefits) and inter-institutional coordination in the housing market.In the context of Uzbekistan, Presidential Decree PP-4477 (2019) - "Green Economy Transition Strategy for 2019-2030" is a national response that sets specific goals such as increasing energy efficiency, increasing the share of renewable energy, and climate adaptation; this strategy is the main national policy document for analyzing the economic impact of green construction standards on the domestic housing market. However, the literature and international experience show that the success of the strategy should be strengthened through a monitoring system, financial mechanisms, and instruments for accounting for natural capital. Therefore, my scientific opinion is that the literature recommends an integrated approach to the implementation of green standards in the housing market - combining economic-environmental valuation, inclusive policy, and indicator-based monitoring.

Analysis and Results

According to the Green Growth Index published by GGGI, Uzbekistan ranked 33rd in 2019 with a total score of 25.83 and made some progress by increasing the GGI indicator from 19.87 to 25.83 between 2005-2019.However, the country's results on four dimensions of the index are uneven: while social inclusion showed high values, there are significant weaknesses in the effective use of resources and protection of natural property. From a housing construction perspective, these vulnerabilities in efficient resource utilization directly stem from energy and water losses in buildings, which means there is a great need to reduce OPEX in the housing market through the implementation of green construction standards (such as high thermal insulation and energy-efficient systems). Results of document and strategy analysis. The document "Strategy for the transition of the Republic of Uzbekistan to a "green" economy for 2019-2030" dated October 4, 2019 No. PP-4477 defines the official direction of the country's development: such priority areas as increasing energy efficiency, diversifying energy supply, and increasing the share of renewable energy. This is the main political will for the implementation

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of such instruments as financing green construction in the housing market, "green mortgages," with the goal of increasing energy efficiency. However, the text of the strategy shows that the specific financial mechanisms, institutional monitoring model, and national methods for assessing natural capital are not sufficiently detailed for the implementation of the goals set; that is, despite the presence of political will in the document, additional measures are required regarding funding sources and methods for assessing "Green Premium" for greening housing construction. Achievements and gaps in energy and renewable sources. Official statements and international analyses show that Uzbekistan is taking steps to increase the share of renewable energy. The government previously set a goal to increase the share of renewable energy sources in electricity to 25% by 2030. This goal directly affects the housing market, as green building standards require the use of renewable energy when connecting buildings to energy sources and increase their market value. At the same time, there is a shortage of practical projects and investment tools, as well as issues of intersectoral integration (for example, infrastructure for connecting solar panels installed on the roofs of residential buildings to a common network), which can slow down the achievement of goals. In-depth analysis by indicators: strengths and weaknesses. Analysis of the indicators showed that: (i) the elements of social coverage are relatively positive - green construction strengthens the element of social coverage by improving the health of the population, increasing the quality of air and comfort inside the building; (ii) low resource efficiency in water and irrigation systems and agriculture; (iii) investment and technological modernization are required in the areas of waste recycling and industrial energy efficiency. These last two weaknesses should be addressed precisely through energy saving and waste management in housing construction. In line with GGI and UNEP recommendations, a central role in addressing these vulnerabilities is played by financial instruments (green mortgages, loan guarantees), the redirection of taxation and subsidy systems, and an institutional complex that supports them. International experience and national adaptation. The main lesson from the studied international cases is that the effectiveness of the green transition lies in the integration of politics. In the case of Uzbekistan, the analysis also showed that, although there are strategic texts, the following elements should be strengthened to transform them into practical projects: calculation of natural capital at the national level, clear financial guidelines for attracting green investments, and an indicator-based monitoring system. This directly helps to calculate the economic benefits of green construction projects and assess the risks of green mortgages for banks, which improves the investment climate in the housing market. Practical results and policy recommendations. The analysis shows that: (1) Uzbekistan has a strong position in some social indicators during the green transition, but there are significant vulnerabilities in the housing sector in terms of resource efficiency and energy efficiency; (2) there are strategic documents, but additional measures on financing instruments that stimulate green construction investments are needed; (3) the introduction of monitoring based on international indicators, the introduction of methods for monetizing natural capital in the housing sector, and the creation of a national "roadmap" for green investments are priority measures for implementation. During the analysis, the main limitation was the limitation of the national database on some indicators. Therefore, a recommendation for further research: it is necessary to empirically assess the effectiveness of green construction policy by testing green financial instruments in the housing market, such as green bonds, guaranteed credit lines.In general, the analysis of indicators and documents clearly defines the strategic directions for Uzbekistan: technological and infrastructure projects to improve resource efficiency in the housing market, the introduction of natural capital calculation and monitoring systems, as well as the creation of sustainable financial mechanisms for green investments are key factors in the implementation of the country's green transition tasks.

Conclusion

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This study confirmed that green building standards have not only an ecological but also a profound economic impact on the housing market. The conclusion is that residential buildings with green certificates, despite being slightly expensive in initial investment, have significant economic advantages in the long term. Firstly, they significantly reduce energy and water consumption, minimizing operating costs. Secondly, global empirical evidence indicates the presence of a “green premium” in the sale and rental prices of green buildings, which indicates a high value of the asset. Thirdly, green buildings reduce market risks for investors, as they are more resilient to future energy price changes and climate regulation. Therefore, green construction is not only a social responsibility, but also a strategic investment approach that increases capital efficiency, is competitive, and brings long-term benefits.

List of references:

1.Vakhabov A. V., Khajibakiyev Sh. X. Green Economy: Theory, Practice and Prospects. Economics textbook. (2020)

2.Gulyamov S. S., Alimardonov M. K. Modern Methods of Real Estate Valuation. Study Guide. (2018)

3. Decree of the President of the Republic of Uzbekistan dated October 4, 2019 No. UP-5847 "On Approving the Strategy for the Transition of the Republic of Uzbekistan to a "Green" Economy until 2030." (2019)

4.World Green Building Council (WGBC). The Business Case for Green Building: A Review of the Costs and Benefits for Developers, Occupants, and the Environment. Official Report. (2013).

5.Eichholtz P., Kok N., Quigley J. M. The Economics of Green Building. Review of Economics and Statistics, Vol. 95, No. 1, pp. 50-63. (2010)

6.UN Environment Programme (UNEP). Global Status Report for Buildings and Construction: Towards a Zero-Emission, Efficient and Resilient Buildings and Construction Sector. Annual Publication. (2023)

7.Newell G., MacFarlane J. Green Building Certification and Commercial Property Returns. Journal of Property Investment & Finance, Vol. 33, No. 1, pp. 31-48. (2015).

8.International Finance Corporation (IFC). EDGE Standard: Certification System for Resource-Efficient Buildings. Technical Guide. 2021

9.World Bank (World Bank). Financing Energy Efficiency in Buildings: The Role of Green Mortgages and Financial Incentives. Policy Research Working Paper. (2019)

10. O'rinboyev R. M. Economic Mechanisms for Increasing Energy Efficiency in Construction. Journal of Economics and Innovative Technologies, No. 5. 2022

11. Katz G. Costs and Benefits of Green Building. Report to the California Sustainable Building Task Force. (2003)