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Greening urban economies as an integrated process in territorial policy – analysis of the coincidence of spatial and financial instruments in urban functional areas (the example of Poland).

The greening of the urban economy is one of the key challenges of contemporary urban development in the context of sustainable development and the implementation of territorial policy. Climate change, urbanization pressure, and growing social demands in terms of environmental quality, as well as systemic requirements and those resulting from local policies, necessitate the integration of pro-environmental measures in both the spatial and financial spheres of cities. The literature on the subject shows a growing interest in research on the greening of the urban economy, but previous analyses have focused primarily on selected aspects, such as spatial planning, transport policy, and greening. However, it is crucial to integrate these activities, both in terms of subject area and territory, and the research undertaken is related to this context. It takes into account the simultaneous (synergistic) use of spatial and financial management instruments in creating the greening of the urban economy, which is a new research approach. The identified research gap is also extended to include the identification of the consistency of greening activities in the context of the size of the city and its function in urban functional areas, as well as the implementation of territorial policy objectives.

Poland is an important area for the implementation of territorial policy and the process of greening the economy of cities, which is why Polish cities and their functional areas were selected as a case study. The study used a survey method addressed to local government units responsible for spatial planning and financial policy. In total, surveys were conducted in 135 cities, from which those falling within the territorial scope of urban functional areas were selected for analysis. In order to ensure the completeness of the data, cities from the functional areas of Warsaw, the Tri-City, Katowice (Central Silesian Subregion), and Wałbrzych were included in the study. The proposed functional areas represent their diversity in terms of type (metropolitan and agglomeration), size, and function of the central center in the regional system, and geographical location.

The article aims to identify the scope of coincidence of greening activities in the spatial and financial economy of Polish cities and their functional areas. The study used a **survey method** addressed to local government units responsible for spatial planning and financial policy. The questionnaire included questions about the instruments used for greening in spatial and financial management, including planning activities, investments in environmental infrastructure, sustainable budgeting, environmental taxes and fees, and support mechanisms for pro-environmental activities.

The article adopts the concept of the coincidence of greening instruments, understood as coexisting/related and coherent spatial and financial activities that mutually support the achievement of environmental objectives. The operationalization of coincidence included both the identification of instruments used simultaneously/in parallel in both spheres of the urban economy, as well as their mutual relationships and dependencies in terms of effectiveness and environmental results. The analysis also took into account differences depending on the size of the city and its functions in functional areas, which allowed for the identification of diverse models of urban greening. In addition, the compliance of the actions taken and the expected results with the territorially oriented policy and implemented through territorial instruments was verified.

The results of the study indicate that the overall level of greening in spatial and financial management in the cities and their functional areas under study varies, as does the consistency of actions expressed by the coincidence of instruments. Large cities and metropolises show a higher coincidence of actions, manifested, among other things, in the harmonious combination of spatial planning with financial investments in ecological infrastructure, low-emission transport systems, the development of green areas, and the implementation of budgetary instruments supporting environmental projects. In medium-sized and small cities that are part of the urban functional area, the consistency of actions is lower, and spatial and financial initiatives are rarely coordinated in a comprehensive manner. To a small

extent, actions taken in medium-sized and small cities to green their economies are in line with the policies of functional areas and are consistent with the actions implemented by central authorities. This leads to the conclusion that within urban functional areas, the coincidence of the green and financial economies is low, and actions are scattered. This phenomenon does not contribute to increasing the coherence and integration of urban functional areas. Barriers limiting the coherence of activities have also been identified, including a shortage of financial resources, a lack of instruments supporting the integration of activities, fragmented strategic plans, and low awareness of the importance of comprehensive greening among decision-makers.

The conclusions of the study are theoretical in nature and expand knowledge about the greening of the urban economy. It was assumed that the greening of the urban economy should be understood as an integrated process, combining spatial and financial activities, rather than a set of independent initiatives. The results indicate that the consistency of actions is, however, varied, which may provide a basis for further research in the field of urban and regional policy design in Poland and other countries with a similar settlement structure and development challenges. The article also discusses the practical implications of the analysis of coincidence. High consistency of greening instruments allows for more effective use of urban resources, accelerates the achievement of sustainable development goals and increases the degree of integration of functional areas. On the other hand, the lack of integration of activities leads to the dispersion of ecological effects and hinders the implementation of a coherent territorial policy. The research has shown that in order to improve the coherence of greening activities, it is necessary to introduce coordination mechanisms and strengthen cooperation between the departments responsible for spatial planning and financial policy. In summary, the results of the study indicate that effective greening of the urban economy requires an integrated approach in which spatial and financial instruments are interlinked and decisions taken in one area take into account the consequences in the other. An analysis of the coincidence of instruments in selected Polish cities shows that the coherence of actions varies and allows for the identification of cities and urban areas with a high and low degree of integration of pro-environmental actions.

Keywords: greening of cities, spatial management, financial management, coincidence of actions, territorial policy, urban functional areas, sustainable development, Poland.

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