

Can Ecological Civilization Construction Enhance Green Total Factor Productivity: Evidence from China's Prefecture-Level Cities

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Abstract: How to achieve the coordinated development of economic growth and environmental protection has aroused great concern in various countries. As a responsible major power, China has implemented a critical ecological civilization strategy. Objectively evaluating the impact and implementation outcomes of ecological civilization construction is crucial for accelerating the process of sustainable development and advancing the realization of a "Beautiful China." This paper reviews the national comprehensive pilot policies for ecological civilization construction implemented between 2010 and 2019. By comprehensively considering policy overlap effects, city-specific characteristics, and third-party evaluations, 283 prefecture-level and higher administrative regions in China were examined. From integrating and standardizing, 84 cities, representing the highest level of ecological civilization construction in China, were selected as the target group to construct the empirical model. The study first calculates urban green total factor productivity (GTFP) using the GML index. Then, the difference-in-differences (DID) method is employed to examine the impact of national ecological civilization construction on the GTFP of target cities. Additionally, the study explores the mechanisms through which this impact occurs, focusing on industrial structure optimization and green technological advancement. The study results show that: (1) The GTFP of prefecture-level cities exhibited a fluctuating upward trend during the study period, with regional growth rates ranking as East > Central > West. Each region experienced phases of initial growth, decline, and subsequent growth, with a trend toward convergence in recent years. (2) National ecological civilization construction significantly enhanced the GTFP of cities. This conclusion remains robust after parallel trend tests and a series of robustness checks. Heterogeneity analysis indicates that the degree of promotion varies by region, ranking as West > East > Central. (3) National ecological civilization construction can enhance city GTFP through industrial structure upgrades and green technological advancements. The mediating effects of advanced industrial structure and green technology innovation are confirmed, although the relationship between ecological civilization construction and the rationalization of industrial structures is not significant. (4) Based on these findings, the paper proposes policy recommendations for ecological civilization construction from the perspectives of balanced regional development, industrial structure adjustment, and technological progress, aiming to improve policy layout and management mechanisms