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Spatial Spillover Effects And Mechanisms Of Green Finance Supporting Low-Carbon, High- Quality Development In Manufacturing: Evidence From China

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Abstract

Amid global green development initiatives, this study investigates how green finance (GF) contributes to low-carbon, high-quality manufacturing development (LCHQM) in China from 2011 to 2022. A multidimensional measurement framework is constructed to evaluate both green finance and sustainable progress in manufacturing. To explore the underlying mechanisms, the study applies a spatial Durbin model (SDM) alongside mediation and moderation effect models. The findings show that green finance significantly enhances manufacturing's low-carbon, high-quality development, demonstrating substantial spatial spillover effects. Carbon productivity, technological innovation, and market financing are identified as the key transmission channels. Different types of environmental regulation have heterogeneous impacts: market-based regulation positively moderates the effect, while supplementary regulation plays a substitute role. The study's empirical results, based on a spatial-mediation-moderation framework, offer policy implications for advancing China's green finance framework, including improving the green finance system and implementing regionally differentiated policies.

Keywords: Green finance; Low-carbon; High-quality manufacturing development; Spatial Durbin model