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INTERACTIONS BETWEEN OPTIMIZATION OF INDUSTRIAL STRUCTURE AND ENVIRONMENTAL POLLUTION: ANALYSIS BASED ON DYNAMIC SIMULTANEOUS EQUATIONS MODEL

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Abstract

Based on the statistical data of China from 2004 to 2018, dynamic simultaneous equations model was used to test the interactions between optimization of industrial structure and environmental pollution with regional heterogeneity taken into consideration. The results indicated that both industrial structure optimization and environmental pollution in the lag phase showed positive correlations with the those of the current phase. From the big picture, industrial structure optimization and environmental pollution in China were in a good bidirectional feedback relationship, with the interaction coefficients being significantly negative. The influence of environmental pollution on industrial structure optimization were stronger than that of industrial structure optimization on environmental pollution. Every 1% rise of the optimization level of industrial structures would lower the environmental pollution intensity by 0.102%, and every 1% increase of the environmental pollution intensity would bring down the optimization level of industrial structures by 0.165%. There were significant regional differences in the intensity and the direction of interactions between industrial structure optimization and environmental pollution. In the eastern and central regions, there was a significant symmetric relationship which was mutually inhibiting between industrial structure optimization and environmental pollution, while in western China, there was an asymmetric relationship. In the eastern region, there was no Environmental Kuznets Curve, but in the central and the western regions, the Curve existed.

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