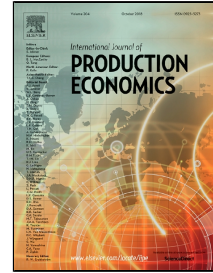


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## Impact of fiscal decentralization on green total factor productivity

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**Abstract:** Based on panel data from 2000 to 2015, this study estimates the green total factor productivity (GTFP) of each of the 11 provinces in the Yangtze River economic belt using z-slacks-based measure in data envelopment analysis model. The influences of fiscal decentralization and environmental regulation on GTFP are analyzed by calculating the environmental regulation intensity and degree of fiscal decentralization and by constructing a panel quantile regression model. The results indicate that fiscal decentralization can stimulate GTFP growth, but this effect declines when the quantile value increases. Appropriate fiscal decentralization can improve GTFP, while excessively strong fiscal decentralization becomes an obstacle to GTFP. This study also established a certain range within which local governments' fiscal freedom can be increased to stimulate GTFP growth. Finally, this study estimates the GTFP under the dual constraints of pollution emissions and economic growth and links the improvement of GTFP with environmental regulation and China's unique economic decentralization system, thereby providing practical support for the governance of environmental pollution in China.

**Keywords:** green total factor productivity; fiscal decentralization; environmental regulation; Yangtze River economic belt.

JEL classification: E62; H70; P48

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