

Decoupling PM_{2.5} Emissions and Economic Growth in China over 1998-2016: A Regional Investment Perspective

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Abstract : It is crucial to decouple economic growth from environmental pollution in China. This study aims to evaluate the decoupling degree between PM_{2.5} emissions and economic growth in China from a regional investment perspective. Using the panel data of 30 Chinese provinces for the period of 1998-2016, this study combines decomposition analysis with decoupling analysis to identify the roles of conventional factors and three novel investment factors in the mitigation and decoupling of PM_{2.5} emissions in China and its four sub-regions. The results show that China's PM_{2.5} emissions were weakly decoupled to economic growth during the period of 1998-2016, as well as in China's four sub-regions. At the national level, investment scale played the dominant role while investment structure had a marginal effect. In contrast, emission intensity was the largest driver in promoting the decoupling effect, followed by investment efficiency and energy intensity. The investment scale effect in the western region far exceeded those in other three sub-regions. At the provincial level, the investment structure of Inner Mongolia and investment scales of Xinjiang and Inner Mongolia had the greatest impacts on PM_{2.5} emission growth. Finally, several policy recommendations are raised for China to mitigate its PM_{2.5} emissions.

Keywords : decoupling, economic growth, investment, PM_{2.5} emissions

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