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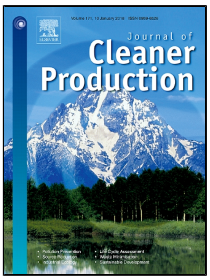

Does foreign direct investment drive environmental degradation in China? An empirical study based on air quality index from a spatial perspective

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Does foreign direct investment drive environmental degradation in China?

An empirical study based on air quality index from a spatial perspective

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Abstract: A growing literature on the pollution haven hypothesis has surged for decades. In this paper, we employ a city-level data set of 150 Chinese cities in 2014, take spatial spillovers into account by using spatial econometric models, to investigate whether foreign capital inflows drive environmental degradation in China. The results suggest that foreign direct investment is negatively related to air pollution in China, indicating evidence of pollution halo hypothesis. Moreover, foreign direct investment has significant spatial technological spillovers, improving air quality in China. This study also finds that there is no evidence of an inverted U-shaped curve between income and air pollution. As income levels increase, air quality continues to worsen. The development of the tertiary industry is found to have a positive effect on air pollution. Densely populated cities tend to demand for better environmental quality. From the above analysis, it follows that policies handles are urgently needed to improve air quality in China.
Key words: air quality index; $PM_{2.5}$; foreign direct investment; spatial spillover effects; spatial Durbin model; China

1. Introduction

China's economic success is attributed greatly to foreign capital because it is taken as a source of external capital to boost economic growth (Bustos, 2007; Chen et al., 2014). Foreign direct investment (FDI) inflows into China grew rapidly from about 2 billion US dollars in 1985 to 126.3 billion US dollars in 2015 (NBS, 2016), at an annual growth rate of approximately 15%. Among emerging countries all over the world, China has already been the largest FDI recipient country. The majority of FDI inflows into the industrial sector contributes significantly to China's industrial development at an unprecedented rate. Notably, the manufacturing has been the biggest FDI recipient sector in China, for example, in 2014 accounting for 33.4% of total FDI inflows.

Along with the rapid industrialization, economic growth and FDI inflows into China, China's environment has been worsening in recent years, since various pollutant emissions are generated by industries. This may be partly because pollution-intensive firms in form of foreign capital not only contributes to the industrial development and income levels, but also lead to pollutant emissions and drive the increase in environmental degradation in China, which becomes an influx of pollutants from developed countries. For example, China has already been the biggest carbon