



“Gheorghe Asachi” Technical University of Iasi, Romania



UNEXPECTED LOCKDOWNS AND AIR POLLUTION: EVIDENCE FROM CHINA’S COVID-19 PREVENTION AND CONTROL PERIOD

Guangcheng Ma¹, Qiuming Li^{2*}

¹*School of Urban and Regional Sciences, Shanghai University of Finance and Economics, No. 777 Guoding Road, Shanghai, 200433, China*

²*College of Public Administration, Nanjing Agricultural University, No. 1 Weigang, Nanjing, 210095, China*

Abstract

This paper uses relevant daily data from January 1, 2019, to December 6, 2022, to estimate the impact of unexpected lockdowns on air quality caused by China’s COVID-19 prevention and control measures. Furthermore, this study systematically explored the mechanisms by which lockdowns affect air quality. The study’s results show that unplanned lockdown measures had a significant positive impact on air quality. It was further found that after the emergence of the more transmissible Omicron strain, the government took more stringent measures and improved air quality. Prevention and control measures are more effective in cities with lower consumption, lower government intervention, higher fixed capital investment, and better natural endowments. Most importantly, the results indicate that population migration, digital economy attention, and carbon market attention are identified as specific mechanisms through which lockdowns improve air quality. Therefore, this study offers practical insights that can inform the formulation of environmental policies to mitigate climate change in the post-epidemic era.

Key words: air quality, COVID-19, environmental policy, unexpected lockdowns

Received: April, 2024; Revised final: June, 2024; Accepted: July, 2024; Published in final edited form: August, 2024

* Author to whom all correspondence should be addressed: e-mail: qiumingli_160@yahoo.com; Phone: +86 18136852873