



The Extraordinary Success of China's War on Pollution

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Summary of the Impact

- Dr. He's engagement in the KE activities has played important roles in explaining and promoting China's extraordinarily successful "war against pollution," and has achieved significant social impacts in the following ways:
 - Promoting the understanding and awareness of China's success in its "war on pollution" and how improvement in environmental quality will affect health, productivity, and social welfare in China.
 - Offering insights on how China managed to reduce pollution at an unprecedented scale at a short time and supporting public sectors in dealing with the environmental challenges
 - Enhancing environmental data quality and availability, which matter for researchers, policymakers, and citizens
 - Helping other polluted countries to learn from China's strategies to control pollution

Underpinning Research

- Background of Dr. He's Research:
 - China's unprecedented economic growth, heavy reliance on fossil fuels, and lax environmental regulations have significantly degraded the country's environmental quality during the past decades.
 - Starting from 2014, the Chinese government shifted away from its long-standing strategy of prioritizing economic growth over environmental concerns and launched the "war on pollution."
 - Seven years later, China has made significant progress in improving air quality.
 - Dr. He conducted multiple studies trying to understand what have been achieved, the costs and benefits of doing so, and what lessons can be learnt from China's experience.

Underpinning Research

- Related Publications:
 - “Can Technology Solve the Principal-Agent Problem? Evidence from China’s War on Air Pollution,” (with Michael Greenstone, Ruixue Jia, and Tong Liu). *American Economic Review: Insights*, 2022, 4(1): 54-70.
 - “China’s War on Pollution: Evidence from the First Five Years,” (with Michael Greenstone, Shanjun Li and Eric Zou.) *Review of Environmental Economics and Policy*, 2021, 15(2), 281-299.
 - “Short and Medium-Term Impacts of Strict Anti-Contagion Policies on Non-COVID-19 Mortality in China,” (with Jinlei Qi et al.) *Nature Human Behaviour*, 2021, <https://doi.org/10.1038/s41562-021-01189-3>.

Underpinning Research

- Main Findings:
 - Seven years after China’s “war on pollution,” the country’s PM2.5 level has decreased by more than 40% (REEP paper).
 - Better environmental quality will significantly increase life expectancy, improve mental and physical health, enhance cognitive ability, boost labor productivity, save defensive expenditure, and affect long-term industry structure in China (REEP paper).
 - High-quality and reliable environmental data play an important role in China’s “war on pollution,” and environmental monitoring technology significantly improves environmental governance. (AER:I paper).
 - The temporary improvement in air quality during COVID-19 lockdowns reduces cardio-respiratory deaths in China and the impacts are especially large in heavily polluted cities (Nature Human Behavior Paper).

Engagement

- Dr. He's KE engagement involves multiple channels at different levels:
 - Collaborate with Energy Policy Institute of the University of Chicago (EPIC) and publish white papers on China's "war on pollution"
 - Interviewed by major news outlets and directly communicate with policymakers
 - Research findings covered by mass media and widely circulated among international and Chinese communities
 - Organize conferences discussing the costs and benefits of environmental regulations in China; and give talks in internationally-recognized seminars, workshops, and conferences
 - Integrate the research findings in various teaching activities (UG, TPG, PhD, and Executive Training)

Engagement

- Dr. He engages various external partners, including:
 - Energy Policy Institute of the University of Chicago (EPIC)
 - Center for Industrial Development and Environmental Governance (CIDEG), Tsinghua University,
 - Chinese Center for Disease Control and Prevention
- For example, Dr. He collaborated with EPIC and published White Papers about China's Achievements in the “war on pollution.”



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The 2008 Olympics to the 2022 Olympics
**China's Fight to Win its War
Against Pollution**

By Michael Greenstone, Guojun He, and Ken Lee



空气质量寿命指数 | 2022年1 著

从2008年夏季奥运会到 2022年冬季奥运会
中国的反污染之战

By Michael Greenstone, Guojun He, and Ken Lee 著

Engagement

- Collaborating with CIDEG, Dr. He organized an conference in Beijing, engaging scholars, policymakers, and the public to discuss the costs and benefits of environmental regulation in China.
- Dr. He actively presents research findings in internationally-recognized conferences. In 2021–2022, for example, Dr. He’s work was presented in the following seminars and conferences:
 - NBER EEE Program Meeting, NBER Chinese Economy Meeting
 - Stanford Center on China’s Economy and Institutions
 - MIT-Columbia-Cornell Joint Seminar
 - National University of Singapore, Peking Beijing, Renmin University, Xiamen University, CNKI-全球中国经济大讲堂, etc.

Engagement

- Dr. He also disseminated his research findings to a broader audience through various teaching activities:
 - Executive education programs on Climate Finance, ESG Investment, and Carbon Neutrality.
 - UG and TPG courses on Environmental Economics: discuss policies that seek to mitigate the impacts of environmental problems, connect microeconomic theories with real-world environmental policy applications; use China’s “war on pollution” to understand how to apply different environmental policies.
 - Ph.D. core course Applied Econometrics: Focus on methods for estimating causal effects and discuss multiple empirical studies on China’s “war on pollution” as applications.

Impacts Achieved

- Dr. He's engagement in KE activities promotes the understanding and awareness of China's success in its "war on pollution" in recent years, in particular, understanding the social, economic, and health impacts of environmental pollution in China.
- Major impacts included:
 - Providing guidance for regulators to deal with the emerging environmental problems and influencing the policy-making process
 - Promoting awareness and understanding of the impacts of pollution on human well-being
 - Helping policymakers around the world understand China's strategies to reduce pollution

Impacts Achieved

- Providing guidance for regulators to deal with the emerging environmental problems and influencing the policy-making process:
 - Dr. He's research has deepened the understanding of environmental issues in China and also offered lessons for other developing countries. Some of this research has started to have an impact on China's environmental policies. For example, after the Chinese government learned that the coal-fired central winter heating system resulted in disastrous health consequences (based on work from Dr. He), it launched a large-scale clean energy program to replace coal with natural gas as the main heating fuel.
 - Dr. He's research also shows that high-powered incentives in the public sector can be a double-edged sword: when local officials obtain a strong incentive to perform better, they also have incentives to manipulate data. Dr. He argues that the advancement of information technology and the adoption of real-time monitoring offer a tool to address this downside and explains how this can help China's war on pollution.

Impacts Achieved

- Promoting awareness and understanding of the impacts of pollution on human well-being:
 - Dr. He's KE activities documented recent trends in environmental quality in China and reviewed recent studies on the consequences of environmental pollution and policy interventions that have taken advantage of more readily available data
 - Dr. He highlights that an average Chinese citizen would live for two more years if China's pollution reductions can be sustained
 - Dr. He's findings have been widely covered by international and domestic news outlets, such as WSJ, AP, Financial Times, Peoples' Daily, Xinhua, etc.

Impacts Achieved

- Helping policymakers around the world to understand China's strategies to reduce pollution:
 - Dr. He summarized several key features in China's approach to reduce pollution, which can be learnt by policymakers in other countries. For example, he argues that pollution reductions require coordinated efforts across different regions, so the central/state government needs to have a strong willingness and capacity to mobilize resources to control pollution. Besides, China's pollution control plans are comprehensive and target every source of pollution, while in many other countries, policies tend to only focus on a few industries or sectors. China also uses powerful incentives to motivate local governors to improve their performance, etc.

Impacts Achieved

- Beneficiaries
 - Citizens who care about environmental pollution and life well-being
 - Public organizations that have the responsibility of promoting environmental quality
 - Policymakers who want to develop a new understanding and awareness of how to balance the costs and benefits of environmental regulations
 - Corporate owners and workers who work in related fields
 - Other developing countries that suffer from high levels of pollution and need to fight against pollution

Impacts Achieved: Evidence

- Collaborating with Tsinghua University, Dr. He organized a conference on the costs and benefits of environmental regulations in China in 2021 Fall, hosted by HKU Beijing Center.
- The conference invited leading scholars from Tsinghua University, Peking University, Nanjing University, Duke-Kunshan University, Shanghai University of Finance and Economics and policymakers from the Ministry of Environment and Ecology.
- The conference was live-streamed and more than 3,500 people participated in the conference (online and offline combined)



Impacts Achieved: Evidence

- Dr. He has been interviewed by major news outlets do discuss China's success in addressing pollution:
 - E.g: “Professor Guojun He told People’s Daily Online that China’s war against pollution has been extraordinarily successful. He claimed that such air pollution reductions would add two more years to Chinese people’s average life expectancy if these reductions can be sustained, based on his team’s estimates. In addition to leading longer lives, there will also be significant reductions in medical expenditures on pollution-related illnesses and household spending on air purifiers and related equipment. ‘Overall, people can enjoy a higher-quality life with a better environment,’ he added.”



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**China's war against pollution extraordinarily successful:
University of Chicago researcher**

Impacts Achieved: Evidence

- Dr. He was interviewed by major news outlets to discuss the costs and benefits of reducing pollution:
 - E.g: “Poorer people might also be more vulnerable if they can’t afford air purifiers or need to work outdoors, said Guojun He, a researcher at the University of Hong Kong and co-author of the report from the Energy Policy Institute at Chicago.” – AP News



【世界看冬奥】外媒感叹北京“奥运蓝”称中国空气质量取得了“翻天覆地”的变化



How China got blue skies in time for Olympics

Poorer people might also be more vulnerable if they can't afford air purifiers or need to work outdoors, said Guojun He, a researcher at the...

Impacts Achieved: Evidence

- Dr. He discussed how China managed to control pollution within such a short period of time when he was interviewed by 中国环境 (The Chinese Environment), the official channel of the Ministry of Environment and Ecology of China.



 China Dialogue

Olympic gains: Study highlights China's progress on air pollution since 2008

He Guojun also said that if China can build on its carbon trading system to create markets for other pollutants, with a cross-regional pollution...

- The featured interview has also attracted a lot attention, including China daily, CCTV, etc.



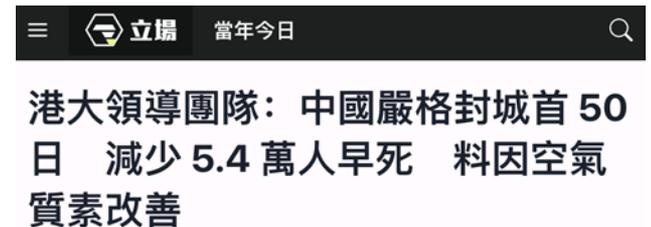
【中国那些事儿】大气治理成就斐然 美研究：从夏奥到冬奥 北京蓝天不再只因奥运而蓝

中国日报网 | 2022年02月26日 18:00:53



Impacts Achieved: Evidence

- Dr. He also explained to various media outlets how improvement in environmental quality during COVID lockdowns in 2020 unexpectedly reduced mortality in China, including Wenweipo, TVB, etc.



文匯報

港大：內地抗疫措施顯成效健康收益持續增長- 香港- 香港文匯網

何國俊表示，研究指出在解除封鎖措施後，如何進一步改善公眾健康。如政府能夠繼續努力控制污染、公眾願意保持良好的個人衛生，這些短期的好處就能變為長期...



Impacts Achieved: Evidence

- More News Coverage of Dr. He's research findings:

 **Study analyses impact of lockdown over non-covid deaths**
The Hindustan Times, 13 Dec 2021
An international team of researchers led by Dr Guojun He, Associate Professor in Eco

 **'Stealth Omicron' Is Causing the Worst COVID Outbreak in China Since Wuhan**



 **The year 2021 can be the year of accounting for nature**
The New Times, 06 Jan 2021
The dulcet voice of the Runkeeper App interrupted the pounding sound of my feet as I ran through the woods, informing me in five...

ut the suspension of production in parts of the country could cause shipping delays months later, said Guojun He, an associate professor of...
; Mar 2022

 **News story from Big News Network on Sunday 12 December**
Big News Network, 12 Dec 2021

 **Study analyses impact of lockdown over non-COVID deaths**
Beijing Bulletin, 12 Dec 2021
Pok Fu Lam [Hong Kong], December 12 (ANI): An international team of researchers led by Dr Guojun He, Associate Professor in...

 紐約時報中文網

研究稱空氣污染可能損害語言和數學能力

然而，何國俊說，測試污染暴露的長期影響可能很困難，部分原因是個人暴露取決於很多因素，例如是否在家中使用空氣過濾器。在另一項批評中，新加坡國

 **Health News | Study Analyses Impact of Lockdown over Non-COVID Deaths | LatestLY**
Latestly, 12 Dec 2021
Get latest articles and stories on Health at LatestLY. An international team of researchers led by Dr Guojun He, Associate...

 **News story from Eurasia Review on Saturday 11 December 2021**
Eurasia Review, 11 Dec 2021

 **Environment: COVID-19 lockdowns improve air quality in China**

 **Did the lockdown lead to more or fewer non-COVID deaths?**
MedicalXpress, 10 Dec 2021
Credit: Pixabay/CC0 Public Domain (November 30, 2021, Hong Kong) An international research team led by Dr.

 New York Post

How China got blue skies in time for Olympics

Some mused on social media that he was trying to ingratiate himself with ... said Guojun He, a researcher at the University of Hong Kong and...

8 Feb 2022



Does the Global Scramble to Contain Omicron Show that China's COVID Zero Approach is Simply Better?

TIME Magazine, 01 Dec 2021

Countries across the world scrambled this week to impose border and travel curbs after the new omicron variant emerged.