



# China's Economic Openness and Environmental Issues: A Green Economy Perspective

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**Abstract:** The concept of a green economy has gained increasing attention on the international stage, with a growing number of scholars exploring ways to synchronize economic development with environmental protection. The development of a green economy is considered a key solution to this challenge. This paper examines the relationship between China's economic liberalization and the development of its green economy by reviewing the country's economic opening process. During the period of rapid economic growth following the reform and opening-up, China experienced a series of environmental issues, leading to its status as a major carbon emitter. However, with further economic liberalization, China has undergone continuous shifts in its economic and policy frameworks, fostering the development of a green economy and paving the way for a harmonious relationship between economic growth and environmental sustainability.

**Keywords:** green economy, economic openness, pollution

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## 1. Introduction

As the concept of environmental protection gains increasing global prominence, many countries have shifted from a sole focus on economic development to pursuing a more coordinated development integrating both the environment and the economy. The rise of the green economy concept has led numerous nations to place it on par with economic development in terms of importance. With China's economic opening-up, there has been a rapid surge in GDP. Nevertheless, as economic openness has continued to deepen and evolve, the benefits it brings, such as technological innovation, transformation of industrial structures, and a deepening environmental consciousness, have fostered the continuous development of China's green economy. Consequently, the government has placed increased emphasis on green economy policies, leading to the current situation where green growth and the green economy hold a significantly crucial position in China.

## 2. China's economic opening and environmental problems

### 2.1 Environmental impacts of China's early reform and opening-up period

China's economic opening-up began with Deng Xiaoping's "Reform and Opening-Up" measures in 1979. In 1983, Deng Xiaoping proclaimed. The shift in the investment focus of the reform and opening-up policy, transitioning from heavy industry to light industry and then to agriculture, sowed the seeds for a series of environmental issues.

Economic openness has propelled rapid economic development in China. Participation in global trade significantly increased China's import and export volumes, particularly in labor-intensive products. Additionally, economic openness has facilitated the free flow of global capital, driving the growth of foreign direct investment. Consequently, both heavy and light industries in China that received investment experienced rapid growth, contributing to a substantial increase in China's GDP growth rate.

The rapid economic growth inevitably brought about environmental issues such as the consumption of non-renewable energy, ecological destruction, and environmental pollution. According to statistics from the World Resource Institute, China surpassed the United States in 2004 to become the world's largest emitter of carbon dioxide. The process of economic openness has indeed generated a series of environmental pollution issues, necessitating China to explore entirely new approaches for resolution.

### 2.2 Reasons why China has become a major carbon emitter:

Throughout the 40 years of China's economic opening-up, why have China's environmental issues become so prominent globally? This is attributed to both China's internal conditions and external factors.

China's internal conditions have led to a focus on economic development. Since its economic opening-up, China's priority has consistently leaned towards economic advancement. Before 1980, historical reasons resulted in a significant

population living in poverty and a vast population base, compelling China to prioritize economic development to address severe national living conditions. The global economic impact of the COVID-19 pandemic in 2019 affected China as well. In order to sustain the livelihoods of its immense population, China has had to persist in prioritizing economic development.

Capital flows brought by globalization have led to carbon emissions and the transfer of high-polluting industries. China's active participation in globalization through its economic opening-up facilitated the global flow of capital. Andreas et al.'s "The Fossil Capital Hypothesis" (2012) effectively explains the impact of capital flows on China's environment. The hypothesis posits that global capital flows, by consuming fossil fuels, shift production to countries with cheap labor and strict discipline. The trade resulting from economic openness and the industrial capital from free investments prompted numerous foreign direct investments, primarily driven by labor considerations.[9] To meet the demands of industrial development and increased income from escalating investments, China significantly increased its consumption of fossil fuels, resulting in a range of environmental issues such as high carbon emissions and air pollution.

## **2.3 Economic Openness and Green Economic Growth**

The benefits of green economy for a nation's and society's sustainable development are indeed multifaceted, yet there are numerous factors influencing the growth of green economy.

Therefore, there exists a correlation between China's economic openness and the development of its green economy. Economic openness's impact on China can be analysed from both economic and policy perspectives.

### **2.3.1 Economic Impact of Economic Openness**

China's economic openness is part of its engagement in globalization. The free flow of capital led to the relocation of some polluting industries to China. However, this shift also brought technological advancements that reduced fossil fuel consumption, thereby decreasing environmental pollution. Additionally, the emergence of new products through exports has facilitated a transformation in China's industrial structure towards a more environmentally friendly configuration, consequently promoting the growth of China's green economy.

Firstly, economic openness has enabled China to engage in trade with nations worldwide and has attracted foreign direct investment (FDI). This facilitated not only capital inflow but also technology transfer, introducing highly productive technologies previously held by developed countries to Chinese enterprises. According to Liu and Buck (2007), China's high-tech sectors learn new technologies from exports and foreign enterprises.[6] Moreover, trade has facilitated technological exchanges and imports between companies, leading to increased investments in innovative ventures and new products in China.[4] Hence, technological advancements reduce energy consumption, environmental pollution, and carbon emissions while boosting productivity[7], fostering the growth of China's green economy.

Furthermore, technological progress diminishes reliance on fossil fuels or improves their efficiency while promoting the use of renewable energy sources. Blackman and Wu's (1998) study on Chinese power plants demonstrated the positive impact of FDI on enhancing energy efficiency.[1]

Also, foreign direct investment from affluent countries serves as a channel for disseminating clean environmental technologies and management systems to developing countries.[3] This allows businesses to achieve emission reduction and tax avoidance goals at lower costs.[2] Therefore, technological upgrades and transformations arising from economic openness will aid in "greening" Chinese technology, reducing production costs and pollution, thereby boosting the overall benefits of the green economy.

Secondly, the technological updates and GDP growth resulting from economic openness have facilitated China's industrial restructuring and upgrades, leading to energy conservation and emissions reduction, thereby achieving green economic growth. China has heavily promoted urbanization and industrialization in its economic growth process, resulting in a significant reliance on high-carbon emitting secondary industries. However, economic openness has promoted technological updates and the birth of new products, allowing for the adjustment and optimization of China's industrial structure towards a direction emphasizing high technology and low energy consumption. This is because the upgrade and optimization of the industrial structure will drive down energy consumption and carbon intensity.[5]

Besides, adjusting the industrial structure during GDP growth resulting from economic openness will significantly reduce energy wastage. The Chinese new energy vehicle industry serves as an exemplary illustration. According to statistical analysis from the China Association of Automobile Manufacturers, its market share in China's automobile industry reached around 20% by 2021, causing significant shifts in China's automobile industry structure. This has greatly reduced carbon emissions and the consumption of fossil fuels, thereby promoting the development of China's green economy. Hence, the optimization of the industrial structure brought about by economic openness not only aids in reducing environmental pollution but also brings about additional economic benefits.

### 2.3.2 Policy Implications of Economic Openness

Alongside a series of economic benefits resulting from economic openness, the increase in foreign direct investment and national income further strengthens the Chinese government's capacity to enhance environmental regulations and implement policies aligned with environmental protection principles. Consequently, this enables the formulation of policies conducive to the development of a green economy, thereby facilitating green economic growth.[8]

The increase in foreign direct investment resulting from economic openness has facilitated the dissemination of green economy and sustainable development concepts. Collaboration with multinational corporations has supported the international dissemination of environmental production and regulatory standards, technology, and corporate self-regulation. [9] This situation compels the government to optimize its policies to enable industries to meet environmental standards and technologies, thereby reducing production costs to retain foreign investments.

## 3. Conclusion

China's economic opening has been an especially critical decision in its developmental trajectory, fostering significant economic growth and improving the living standards of its citizens. However, the impact of economic opening on China's environment has been complex and has evolved over time. During the initial phase of reform and opening-up (1980-2002), the primary focus was on developing the secondary industry and high-emission, labor-intensive industries, which led to China becoming a major emitter of pollutants. Yet, as economic openness progressed, capital flow brought technological innovations and policy reforms, enabling China's economy to experience green growth. Consequently, economic opening has facilitated sustainable development in China by promoting the development of a green economy.

Today, the green economy has become a highly significant aspect of China's economy. The co-evolution of the economy and the environment is a central theme in global economic development. As China continues to further open its economy and embrace globalization, it should place greater emphasis on learning from developed nations about green technologies and environmentally friendly economic policies.

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