

# Evaluation of the Economic Effects of Green Industrial Policies

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**Abstract:** This article conducts a systematic study on the economic effects of green industrial policies. First, let's analyze the background of its introduction. It emerged under the impetus of factors such as global climate change, resource and environmental constraints, and the enhancement of public environmental awareness. Then elaborate on the current policy situation, covering multiple fields such as finance and taxation, and guide the aggregation of resources with various tools. Studies have found that policies have positive effects in aspects such as economic growth, industrial structure, employment, and international competitiveness. However, there are regional differences. The eastern region has significant advantages, the central region faces challenges, and the western region is constrained by multiple factors. Based on this, suggestions such as optimizing policies, strengthening regional coordination, formulating differentiated policies and enhancing innovation are put forward to promote the high-quality development of the green industry and achieve a virtuous interaction between the economy and environmental protection.

**Keywords:** Green Industry Policy; Economic Effect; Industrial Structure; Regional Economic Difference.

## 1. Introduction

Against the backdrop of global climate change and the increasing pressure on resources and the environment, the green industry, as an important force for promoting sustainable economic development and addressing environmental challenges, has received high attention from governments around the world. Green industrial policies, as a key means for the government to guide and promote the development of green industries, the assessment of their economic effects is of great significance for optimizing policy design and improving the implementation

effect of policies. This article aims to comprehensively assess the economic effects of green industrial policies, providing a theoretical basis and practical reference for policy formulation and adjustment.

## 2. Literature Review

### 2.1 Research on Economic Effect Evaluation

A substantial number of studies have been carried out by scholars both domestically and internationally concerning the correlation between green industrial policies and economic growth, with some divergences in their viewpoints. A portion of scholars hold the belief that green industrial policies can notably bolster economic growth. From the standpoint of job generation, green industrial policies have spurred the advancement of green industries and generated a significant number of fresh job prospects. Take the new energy sector as an example, the swift expansion of industries like wind power and photovoltaic power has fueled employment growth in areas such as equipment manufacturing, installation and upkeep, and operational management [1]. Technological innovation and industrial transformation are also crucial avenues through which green industrial policies drive economic growth. By providing policy guidance, the government motivates enterprises to augment their investment in green technology research and development, elevate production efficiency and product quality, and steer industries towards high-end and intelligent development paths, consequently enhancing the overall economic efficiency [2].

However, some scholars have pointed out that green industrial policies may have problems such as high implementation costs and unbalanced regional development, and their promoting effect on economic growth may be limited. The implementation of green industrial policies requires a large amount of capital investment, including subsidies for green projects and support for technological research

and development, which may increase the financial burden on the government and may not show obvious economic growth effects in the short term [3]. In addition, there are differences in resource endowments, industrial foundations and development levels among different regions, which leads to significant variations in the implementation effects of green industrial policies in different regions. Some regions may not be able to fully enjoy the economic growth dividends brought by green industrial policies [4].

## **2.2 Industrial Structure Effect**

Regarding the industrial structure, the majority of studies suggest that green industrial policies are beneficial for optimizing it and raising the share of green industries within the national economy. These policies have facilitated the green transformation of traditional industries and the emergence of new green industries by curbing the growth of high-pollution and high-energy-consuming industries and channeling resources toward green sectors [5]. For example, in traditional industries like steel and chemical engineering, green industrial policies have encouraged enterprises to adopt clean production technologies and energy-saving and emission-reduction equipment, thereby elevating the green standards of these industries. At the same time, emerging green industries such as new energy and energy conservation and environmental protection have experienced rapid growth under policy support and have emerged as new engines for economic growth [6].

Several empirical studies have also corroborated the optimizing effect of green industrial policies on the industrial structure. Through the establishment of an econometric model and the analysis of the relationship between green industrial policy variables and industrial structure indicators, it has been found that green industrial policies exert a significant positive influence on indicators such as the added value of green industries and the number of people employed in green industries [7].

## **2.3 Employment Effect**

Concerning the impact of green industrial policies on employment, various studies have arrived at differing conclusions. Certain investigations have revealed that green industrial policies can generate a substantial number of green jobs. As the green industry expands, there

is a continuous rise in the demand for talent in associated fields, including environmental engineers, R&D personnel in new energy technologies, and green finance analysts, among others [8]. The enforcement of green industrial policies has also spurred the growth of upstream and downstream industrial chains, resulting in the creation of additional indirect employment prospects.

However, there are also some problems with the employment effect of green industrial policies. For instance, the green industry has relatively high skill requirements for workers, and there may be employment problems of skill mismatch. Due to the rapid technological update and replacement in the green industry, some workers may not be able to master new skills in time, resulting in employment difficulties (Li et al., 2022). Furthermore, the implementation of green industrial policies may lead to a reduction in job positions in some traditional industries, exerting a certain impact on the employment structure [9].

## **2.4 Enterprise Competitiveness Effect**

In terms of enterprise competitiveness, green industrial policies are believed to enhance the environmental performance and brand image of enterprises and strengthen their market competitiveness. In order to meet the requirements of the green industrial policy, enterprises will increase environmental protection investment, adopt clean production technologies, reduce pollutant emissions, improve resource utilization efficiency, thereby lowering production costs and enhancing product quality [10]. Meanwhile, green products and services are increasingly favored by consumers. By carrying out green marketing, enterprises can enhance their brand image and expand their market share (Zhang & Li, 2022).

Nevertheless, green industrial policies might also heighten the cost burden for enterprises. To comply with green standards, businesses are required to allocate substantial funds towards technological research and development, equipment upgrades, and the construction of environmental protection facilities, among other things. This could potentially escalate the operational expenses of enterprises and exert a certain degree of influence on their profitability.

## **3. Background and Current Situation of Green Industry Policies**

### 3.1 Background of the Introduction of Green Industry Policies

During the rapid economic development process, the high energy consumption and high pollution development model of traditional industries has brought about many serious environmental problems. The intensification of global climate change and the frequent occurrence of extreme climate events pose threats to the human living environment such as rising sea levels and melting glaciers. Air pollution leads to an increase in smoggy weather, seriously affecting the physical health of residents. The problems of water resource pollution and soil pollution are also becoming increasingly prominent, restricting the sustainable development of agriculture and the balance of the ecosystem. These problems have not only brought huge economic losses to society, but also aroused strong public concern and worry about environmental protection.

Meanwhile, as people's environmental awareness continues to rise, consumers' demand for green products and services is increasing day by day. Consumers are more inclined to purchase environmentally friendly, energy-saving and low-carbon products, which makes the market potential of the green industry huge. Furthermore, the international community has been attaching increasing importance to environmental protection. Countries have successively formulated strict environmental protection standards and regulations, and promoted the development of green industries through means such as trade barriers. For our country, to participate in international competition, it is necessary to follow this trend and develop green industries to enhance the international competitiveness of our products and services.

From the standpoint of economic development phases, China's economy has transitioned from a phase of rapid growth to one focused on high-quality advancement, making industrial restructuring and transformation and upgrading imperative. As a burgeoning sector, the green industry is marked by robust innovation, high technological sophistication, minimal resource utilization, and reduced environmental impact. It serves as a pivotal catalyst for propelling high-quality economic expansion. Consequently, the implementation of green industry policies, steering resources towards the green sector, and

fostering its growth represent an unavoidable pathway to achieving a mutually beneficial outcome for both economic progress and environmental stewardship.

### 3.2 Current Situation of the Implementation of Green Industry Policies

In recent years, the Chinese government has attached great importance to the development of green industries and has introduced a series of green industry policies, covering multiple fields such as finance, taxation, finance and market access. In terms of fiscal policy, the government has increased its financial input into green industries, established a special fund, and supported green technology research and development, green project construction, and the establishment of green industry development demonstration parks, etc. In terms of tax policies, green enterprises are given tax incentives, such as reducing or exempting corporate income tax and value-added tax, to lower enterprise costs and enhance their profitability.

Financial policies have provided strong financing support for green industries. Financial institutions offer diversified financing channels for green industry projects through financial tools such as green credit, green bonds, and green funds. Market access policies, by formulating strict green standards and norms, restrict the development of high-pollution and high-energy-consuming industries, and create a fair market competition environment for green industries.

However, green industrial policies also face some challenges in the implementation process. For example, there is insufficient policy coordination, and there are problems of poor connection of policies among different departments, resulting in the reduction of policy effectiveness. The policy evaluation and supervision mechanism is not perfect, making it difficult to accurately assess the implementation effect of policies and to promptly identify problems existing in the policy implementation process. In addition, there are still problems such as the need to improve the technological level and the imperfect market mechanism in the development of green industries, which need to be further addressed.

### 4. Economic Effect Assessment of Green Industry Policies

#### **4.1 The Direct Driving Effect of Green Industrial Policies on Economic Growth**

Green industry policies, through a series of incentive measures such as fiscal subsidies, tax preferences, and low-interest loans, guide resources to tilt towards green industries, effectively promoting the rapid development of green industries and thereby directly driving economic growth.

With policy support, the investment scale in the green industry sector has been continuously expanding. Enterprises have more funds to invest in green technology research and development, equipment renewal and capacity expansion, and new green industry projects keep emerging. For instance, in the field of new energy, large-scale wind power and photovoltaic power generation projects have been launched one after another, driving the development of the upstream and downstream industrial chains from equipment manufacturing to installation and operation and maintenance, and creating a large number of job opportunities and output value. Meanwhile, the development of green industries has also promoted the construction of related infrastructure, such as smart grids and new energy vehicle charging piles, further stimulating investment demand.

The implementation of green industrial policies has also stimulated the innovation vitality of enterprises. In order to obtain policy support and competitive advantages in the market, enterprises have increased their investment in the research and development of green technologies, promoting the innovation and application of green technologies. The application of new technologies has enhanced production efficiency, reduced production costs, and strengthened the market competitiveness of enterprises, thereby promoting their profits and economic growth. For instance, the advancement of energy conservation and environmental protection technologies enables enterprises to utilize resources more effectively during the production process, reduce energy consumption and pollutant emissions, and enhance the economic benefits of the enterprises.

#### **4.2 The Upgrading Effect of Green Industrial Policies on the Optimization of Industrial Structure**

Green industrial policies, through measures such as setting environmental access thresholds and eliminating backward production capacity,

promote the transformation and upgrading of traditional industries towards green and low-carbon directions, while also facilitating the growth and expansion of emerging green industries, thereby optimizing the industrial structure.

For traditional industries, green industrial policies require enterprises to adopt cleaner production technologies and processes, improve resource utilization efficiency and reduce environmental pollution. This enables traditional industries to gain the impetus and opportunity for transformation and upgrading while facing environmental protection pressure. Some highly polluting and energy-consuming enterprises have achieved green development and enhanced their competitiveness through technological transformation and industrial upgrading. For emerging green industries, policy support has provided them with a favorable development environment, attracting the aggregation of a large number of elements such as talents, funds and technologies, and promoting the rapid development of the industry. For instance, under the vigorous support of policies, the new energy vehicle industry has become an important part of China's strategic emerging industries, driving the development of core component industries such as batteries, motors, and electronic control systems, and promoting the overall upgrading of the automotive industry.

#### **4.3 The Creation and Driving Effects of Green Industrial Policies on Employment**

During the course of advancing the development of green industries, green industrial policies have generated a substantial number of employment prospects and exerted a favorable propelling influence on the job market.

On the one hand, the growth of the green industry inherently necessitates a significant workforce. Every stage, spanning from green technology research and development, production and manufacturing, to sales and service, demands professionals with diverse specializations and skill sets. For instance, in the realm of renewable energy, a vast array of engineers and technicians are required for project design, construction, and operational maintenance. Similarly, in the environmental protection services sector, there is a need for skilled personnel in environmental monitoring, assessment, and governance.

On the other hand, the expansion of green



industries has also catalyzed the development of associated sectors, thereby indirectly creating additional job openings. For example, the proliferation of the new energy vehicle industry has spurred the growth of related industries such as charging pile construction and battery recycling. The advancement of these sectors has subsequently absorbed more labor into the workforce.

#### **4.4 The Enhancing Effect of Green Industrial Policies on International Competitiveness**

Under the global trend of green development, green industrial policies are conducive to enhancing the international competitiveness of China's industries.

By developing green industries, Chinese enterprises can master advanced green technologies and production processes, improve the quality and performance of their products, and meet the international market's demand for green products. For instance, China's technological level and production scale in the solar photovoltaic industry have reached the world's leading position. Its products are exported to many countries and regions around the world, enhancing China's say in the international energy market. Meanwhile, green industrial policies have also prompted Chinese enterprises to enhance international cooperation and exchanges, introduce advanced green technologies and management experiences from abroad, and improve their own innovation capabilities and management levels. In addition, actively participating in the formulation of international green industry standards will help Chinese enterprises occupy a more favorable position in the international market and enhance the international competitiveness of China's industries.

### **5. Analysis of Regional Differences in the Economic Effects of Green Industry Policies**

#### **5.1 The Significance and Particularity of the Economic Effects of Green Industrial Policies in the Eastern Region**

The eastern region, as the most economically developed area in China, shows remarkable activity and uniqueness in the economic effects of green industrial policies. At the industrial structure level, the eastern region, relying on its solid economic foundation and advanced technological strength, has rapidly achieved the

green upgrading of its industrial structure under the guidance of green industrial policies. Many traditional manufacturing enterprises have actively responded to the policy call, increased investment in technological transformation and research and development, and transformed towards green manufacturing. For instance, textile enterprises in the Yangtze River Delta region have introduced advanced environmentally friendly dyeing and finishing technologies, which not only reduce pollutant emissions but also enhance product quality and strengthen their competitiveness in the international market.

In terms of innovation capacity, the eastern region is densely populated with universities and research institutions, and is rich in talent resources, providing strong intellectual support for the innovative development of green industries. Under the encouragement of policies, the cooperation among industry, academia and research institutions has become closer, and green technology innovation achievements have been constantly emerging. Take the new energy vehicle industry as an example. New energy vehicle enterprises in the eastern region have made multiple breakthroughs in battery technology, intelligent driving and other fields, promoting the development of the entire industrial chain.

In terms of market effects, the consumer market in the eastern region is mature, and consumers have a relatively high awareness and acceptance of green products. Green industrial policies have further stimulated market demand, prompting enterprises to continuously introduce green products and services. Meanwhile, enterprises in the eastern region have rich experience in brand building and market promotion, which enables them to better introduce green products to domestic and international markets and achieve a win-win situation of economic and environmental benefits. However, the eastern region is also confronted with problems such as tight land resources and limited environmental capacity, which to some extent restricts the further expansion of the green industry.

#### **5.2 The Gradual Release and Challenges of the Economic Effects of Green Industry Policies in the Central Region**

The central region holds an important hub position in the national regional development strategy, and the economic effects of green

industrial policies are gradually being released. Under the impetus of policies, the central region actively takes over the industrial transfer from the eastern region. At the same time, it combines its own resource advantages to develop green industries with distinctive features. For instance, the central region is rich in agricultural resources. Policies support the development of green agriculture and deep processing industries of agricultural products, which has promoted the development of the rural economy and increased farmers' income.

In terms of infrastructure construction, the central region has increased investment in areas such as green transportation and green energy, improved the investment environment, and attracted more green industrial projects to settle down. However, the central region also faces some challenges in the process of green industry development. On the one hand, the relatively low level of industrial technology and insufficient innovation capacity have restricted the high-quality development of the green industry. On the other hand, the problem of talent drain is rather serious. The lack of high-quality green industry talents has affected the innovation ability and market competitiveness of enterprises.

### **5.3 Potential Exploration and Dilemmas of the Economic Effects of Green Industry Policies in Western Regions**

The western region boasts an expansive landmass and abundant natural resources. The introduction of green industrial policies has ushered in fresh prospects and possibilities for the economic advancement of this region. These policies incentivize the western areas to cultivate distinctive green industries, encompassing sectors like new energy and eco-tourism. Notably, the western region is endowed with a wealth of renewable energy sources, including wind and solar power. Backed by supportive policies, the new energy sector has witnessed swift growth, emerging as a novel catalyst for economic expansion in the western region. Ecotourism is also an important direction for the development of green industries in the western region. The western region boasts unique natural scenery and ethnic culture. Under policy guidance, the construction of eco-tourism infrastructure has been continuously improved, and the quality of tourism services has gradually increased, attracting a large number of tourists.

However, the western region also faces many difficulties in the process of developing green industries. Weak infrastructure and relatively backward conditions such as transportation and communication have increased the operating costs of enterprises. Meanwhile, the ecological environment is fragile. In the process of developing green industries, more attention should be paid to ecological protection to avoid causing damage to the ecological environment. In addition, the underdeveloped market and insufficient industrial supporting capacity in the western region also restrict the large-scale development of green industries.

### **6. Conclusion**

This study conducts a systematic analysis of the economic effects of green industrial policies and draws important conclusions through multi-dimensional exploration. Green industrial policies have demonstrated a significant direct driving effect on economic growth. Through policy incentives, they have led to the aggregation of resources towards green industries, generating a large amount of investment and project implementation, and promoting the coordinated development of upstream and downstream industrial chains, injecting new vitality into economic growth. In terms of optimizing the industrial structure, policies have effectively promoted the green transformation of traditional industries and the rise of emerging green industries, breaking the high-pollution and high-energy-consuming development model of traditional industries and forming a new industrial pattern dominated by green industries, thereby enhancing the overall competitiveness of industries. In the field of employment, green industrial policies have created a rich and diverse range of job opportunities, not only covering the development needs of the green industry itself but also driving employment in related industries, effectively alleviating employment pressure and promoting social stability. In terms of international competitiveness, policies assist China's green industries in mastering core technologies, improving product quality, enhancing their say in the international market, and promoting China to occupy a favorable position in the global green development wave. However, there are obvious regional differences in the economic effects of green industrial policies. The eastern region, with its advantages

in economy, science and technology, etc., has significant and unique policy effects. The policy effects in the central region are gradually being released, but it faces challenges in technology and talent. Although the western region holds great potential, it is restricted by factors such as infrastructure and ecological environment. Based on this, in the future, green industry policies should be further optimized, policy coordination among regions should be strengthened, differentiated policies should be formulated according to the characteristics of different regions, support for the central and western regions should be increased, and their capacity for green industry development should be enhanced. At the same time, we will continue to strengthen policy innovation, improve market mechanisms, stimulate the innovation vitality of enterprises, promote the high-quality development of green industries, achieve a virtuous interaction between economic growth and environmental protection, and lay a solid foundation for the sustainable development of China's economy.

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