

# Research on Building a Green Development Dynamic Model and the Path of Environmental Tax Reform

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## Abstract

This research project explores the path of environmental tax reform with Chinese characteristics, and through quantitative analysis methods, analyzes in detail the evolution of green development in China under different environmental tax scenarios. The main contents of the existing environmental tax system and its collection system have been determined, and the tax chain has been classified and evaluated in detail. Explored the path of environmental tax reform and proposed suggestions such as integrating the green tax system, standardizing the collection and management mechanism, and levying carbon tax. We will also analyze the experiences and lessons learned from environmental tax policies in different countries and propose reform plans with Chinese characteristics. Based on the above achievements, this project proposes reform suggestions such as improving the positive impact of environmental tax system on green development, optimizing tax category layout, and paying attention to the implementation effect of tax preferential policies.

## Keywords

Green Power Development Model; Environmental Tax System; Tax Planning; Tax Incentives.

## 1. Achievement Introduction

### 1.1. Establishment of Green Development Dynamic Analysis Model

The project team established a green development driving force analysis model through quantitative analysis methods, and conducted a detailed analysis of the evolution laws of green development in China under different environmental tax scenarios. This model comprehensively considers the impact of environmental protection taxes on enterprise production costs and environmental pollution, as well as the government's regulatory role in environmental protection taxes. By simulating the evolution of green development under different environmental tax scenarios, we have identified the impact of various factors on China's green development, providing a scientific basis for targeted reforms.

### 1.2. Analysis of Existing Environmental Tax System and Its Collection System

The project team conducted an in-depth analysis of the existing environmental tax system and its collection system, identified its main contents, and conducted a detailed classification and evaluation of the tax chain. We have identified some incomplete and inadequate parts, such as incomplete implementation of unified collection standards, clarification of collection scope, and improvement of collection system. The existence of these issues affects the effectiveness and fairness of the environmental tax system.

### 1.3. Discussion on the Path of Environmental Tax Reform

Based on the analysis results of the first two parts, the project team has proposed a series of directions and suggestions for environmental tax reform. We emphasize the integration of the

existing green tax system, attach importance to the ideology of green development, standardize the collection and management mechanism, timely levy carbon taxes, and improve the ecological compensation mechanism. These measures aim to protect the ecological environment through more effective systems and promote the transformation of China's economy towards high-quality development. In the process of promoting the transformation of China's economy towards high-quality development, it is emphasized to integrate the existing green tax system, attach importance to green development ideology, standardize collection and management mechanisms, timely levy carbon taxes, and improve ecological compensation mechanisms. These measures are of great significance for protecting the ecological environment and promoting green development.

Firstly, integrating the existing green tax system is an important means to internalize environmental costs and curb high pollution and energy consuming behaviors. China has formed a green tax system with environmental protection tax as the core, resource tax, consumption tax, vehicle and vessel tax, vehicle purchase tax and other green tax types coordinated, supplemented by green tax policies such as value-added tax and corporate income tax. This system has played an important role in promoting pollution reduction, low-carbon, and resource conservation. For example, the implementation of environmental taxes has effectively reduced pollution emissions, increased the proportion of sales revenue from clean energy generation, and the reform of water resource taxes has promoted water conservation and reduced groundwater overexploitation in enterprises.

Secondly, valuing the ideology of green development means integrating the concept of green development into various aspects such as the economy, society, and culture, and increasing public awareness and participation in environmental protection. Through education, publicity and other means, enhance public awareness and practice of green lifestyles, and form an environmental governance pattern with the participation of the whole society.

Thirdly, standardizing the collection and management mechanism is the key to ensuring the effective implementation of green tax policies. By optimizing the tax collection and management process, improving the efficiency of tax collection and management, and ensuring the fairness and effectiveness of tax policies. For example, by establishing a multi departmental green information sharing platform, the efficiency of green tax collection and management can be improved.

Fourthly, timely introduction of carbon tax is an important measure to promote low-carbon development. Carbon tax can incentivize companies to reduce greenhouse gas emissions and promote the use of clean energy by taxing the carbon content or emissions of fossil fuels. China has planned to launch a national carbon emissions trading market, which is an important measure to fulfill international commitments and promote domestic low-carbon development. Finally, improving the ecological compensation mechanism is an effective means to mobilize the enthusiasm of all parties to participate in ecological protection and promote the construction of ecological civilization. Through various methods such as fiscal vertical compensation, inter regional horizontal compensation, and market mechanism compensation, compensation is provided to units and individuals engaged in ecological protection to improve the overall effectiveness of ecological protection.

In summary, these measures together constitute a comprehensive, systematic, and effective green tax system, which plays an important role in promoting the transformation of China's economy towards high-quality development and achieving green development. By integrating green tax categories, enhancing green awareness, standardizing management mechanisms, levying carbon taxes, and improving ecological compensation, we can better protect the ecological environment and promote coordinated development of the economy, society, and environment.

## 1.4. International Comparison and Reference

When comparing the implementation of environmental tax policies internationally, we found that different countries have rich experiences and lessons in the formulation, implementation, and effectiveness evaluation of environmental tax policies. For example, the United States levies taxes on air and water pollution through laws and regulations such as the Clean Air Act and the Clean Water Act. The collection entities include federal and local governments, and the collection targets are enterprises and units that emit pollutants. The tax basis is based on the quota tax of air pollutant emissions. Sweden sets differential tax rates based on the sulfur content of the fuel, imposing a tax of 3 euros per kilogram on sulfur-containing coal and 2.7 euros per cubic meter on fuel with a sulfur content higher than 0.1%.

Drawing on international advanced experience and combining it with China's actual situation, the project team has proposed an environmental tax reform plan with Chinese characteristics. Starting from January 1, 2018, China began to levy environmental protection taxes to replace the original pollution discharge fee system. The collection of environmental protection taxes has to some extent reduced the emissions of pollutants, such as the decrease in the declared emissions of major water pollutants chemical oxygen demand and ammonia nitrogen, as well as major air pollutants sulfur dioxide and nitrogen oxides in the first half of 2018. However, the implementation of China's environmental tax policy also faces some difficulties, such as tax disputes caused by incomplete taxable items, and pollutants such as volatile organic compounds not being fully included in the scope of taxation.

## 2. Reform Suggestions

### 2.1. Key Points and Directions

The reform of the environmental tax system should focus on improving its positive impact on green development. Specifically, the incentive effect of the environmental tax system can be enhanced by optimizing the layout of tax categories, increasing tax rates, and standardizing the use of tax funds. At the same time, attention should also be paid to the implementation effect of tax incentives to ensure that they can truly benefit environmental protection enterprises and green industries.

### 2.2. Industry Ratio

In the process of environmental tax reform, full consideration should be given to the integration and development of the primary, secondary, and tertiary industries. Based on the actual situation, formulate reasonable industrial policies and tax incentives to promote the optimization and upgrading of industrial structure. By guiding the flow of funds and technology towards green industries, a more comprehensive industrial system can be formed, providing strong support for green development.

### 2.3. Integration of Tax System with Local Practical Work

When promoting environmental tax reform, attention should be paid to the close integration of the tax system with the actual work of local governments. By providing a certain degree of government assistance and support, we can solve some problems and difficulties caused by objective factors. For example, we can increase fiscal transfer payments to underdeveloped areas to support their improvement of environmental infrastructure; At the same time, strengthen training and guidance for local governments to enhance their ability and level in implementing environmental tax systems.

### 2.4. Strengthen Supervision and Law Enforcement Efforts

To ensure the effective implementation of environmental tax reform, it is necessary to strengthen supervision and law enforcement. Establish a sound regulatory system and

enforcement mechanism to ensure the strict implementation and effective execution of environmental tax policies. Strict punishment should be imposed on illegal activities in accordance with the law, forming a strong deterrent force; At the same time, strengthen information disclosure and social supervision, and enhance the transparency and credibility of the environmental tax system.

## **2.5. Promote the Combination of Technological Innovation and Green Development**

In the reform of environmental tax system, we should actively promote the deep integration of technological innovation and green development. Encourage enterprises to increase their R&D investment and develop green technologies and products; At the same time, we will strengthen the transformation and application promotion of scientific and technological achievements, and transform them into practical productivity to promote the process of green development. In addition, the development of green technology innovation activities can be supported through the establishment of technology innovation funds and the provision of tax incentives.

## **2.6. Strengthening International Cooperation and Exchange**

In the face of global environmental challenges, countries should strengthen cooperation and communication to jointly address them. In terms of environmental tax reform, cooperation and sharing of experience and technological achievements with other countries and regions can be strengthened through participation in international organizations and multilateral mechanisms to promote the improvement and development of the global environmental governance system. At the same time, China can actively participate in the formulation and promotion of international environmental standards to enhance its influence and voice in the field of global environmental governance.

## **3. Summary**

The article deeply analyzes the impact of environmental taxes on specialized, refined, and innovative enterprises in green technology innovation by constructing a two-way fixed effects model. The research process includes steps such as descriptive statistics, correlation analysis, regression analysis, robustness testing, and heterogeneity analysis. The research results show that environmental taxes have a significant promoting effect on green technology innovation, and this effect varies among enterprises with different tax burdens. Moderate tax burden can better stimulate the green technology innovation drive of enterprises. In addition, government investment in technology is also an important factor in promoting green technology innovation in enterprises. Based on the above conclusion, the following suggestions are proposed:

Firstly, optimization of tax planning. Specialized and innovative enterprises should strictly comply with tax requirements, carefully plan green technology research and development projects, fully utilize tax preferential policies, construct a comprehensive enterprise tax planning system based on value chain theory, and achieve a virtuous cycle and interaction of enterprise activities.

Secondly, actively respond to policy directions. Specialized and innovative enterprises should closely monitor national policy developments, fully utilize the advantages provided by the country, such as funding incentives, credit support, tax incentives, etc., strengthen technological innovation, and become a key force in China's productivity transformation and upgrading.

Thirdly, strengthen government support. National and local governments should continue to strengthen support for specialized and innovative enterprises from multiple dimensions, such as scientific research incentives, tax reductions, financing subsidies, and customized services. This will ignite the enthusiasm for technological innovation within the enterprise and create a healthy and orderly market environment. Taking specialization and innovation as important

levers, leveraging the power of technological innovation to continuously explore new fields and tracks, and providing solid support for the high-quality development of the Chinese economy. Fourth, establish a green tax system. Green development is the foundation of high-quality development, and China should actively explore the construction of a "multi tax co governance" green tax system. Including environmental tax, resource tax, vehicle and vessel tax, etc., continuously improve the scope of green taxation, implement differentiated tax policies, in order to make greater progress in corporate environmental protection and sustainable development.

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