

# Research on the Effect of Fiscal Policy on Green Innovation in Manufacturing Industry Under the Background of Double Carbon

## --Taking Hefei City As an Example

Yuyun Chen, Afeng Cui and Sijin Wu

School of Finance and Public Management, Anhui University of Finance and Economics,  
Bengbu, China.

### Abstract

Green innovation is an important way to achieve carbon peak and carbon neutrality. As an important means of regulating the economy, fiscal policy plays an important role in promoting the development of green innovation in the manufacturing industry. Taking the manufacturing enterprises in Hefei as an example, this paper analyzes the current situation and existing problems of fiscal policy to stimulate the development of green innovation in manufacturing, and on this basis, puts forward countermeasures and suggestions for fiscal policy to stimulate the development of green innovation in manufacturing. The research shows that fiscal policies have encouraged manufacturing enterprises to implement green technology innovation and promoted the development of green innovation in the manufacturing industry in Hefei by increasing R&D investment, improving the R&D funding mechanism, and increasing the cost of sewage discharge. At the same time, the financial support system needs to be improved, the industrial structure is unbalanced, the cost of manufacturing industry remains high, and the problems of technological innovation are prominent. Utilization efficiency; actively broaden fund-raising channels and increase government financial support; actively guide the innovation of green financing products, give play to the decisive role of the financial market in resource allocation, and realize the incentive role of fiscal policies on the green innovation and development of Hefei's manufacturing industry.

### Keywords

Carbon peaking; Financial incentives; Green innovation.

## 1. Introduction

In 2020, my country officially proposed the goals of "carbon peak" and "carbon neutrality". The quality requirements of my country's economic development are constantly improving, and the development of green industries has become the focus of current policy formulation. Under the current new normal of economic development, how to further exert the incentive effect of fiscal policy on the development of green innovation in the manufacturing industry is a topic worthy of attention. There are externalities in the research and development of green innovative technologies of enterprises. Increasing the research on financial policy to stimulate the transformation and upgrading of green innovation in the manufacturing industry will help promote the realization of my country's "double carbon" goal, help my country's industrial green development, and contribute to solving the problem of global warming. strength.

Firstly, through a comprehensive review of the literature, some scholars have found that some scholars have discussed the mechanism and effect of fiscal policy on green innovation of enterprises from the perspective of fiscal related policies, thus demonstrating that relevant fiscal policies have an incentive effect on green transformation of enterprises and have a strong

impact on high pollution. The pollution discharge behavior of enterprises has a restraining and inhibiting effect. Some scholars have discussed the ways of green development of enterprises, such as carrying out green transformation from various aspects, rather than sticking to the product itself, requiring low-carbon innovation and transformation from various production factors such as manufacturing, management and operation, and developing high-end manufacturing to protect non-renewable energy. Some scholars have discussed the inhibitory effect of the defects of the government's financial system on the green innovation of enterprises. However, few scholars have put forward constructive opinions on the development of green innovation in the manufacturing industry based on the actual local financial system and industrial development.

Therefore, this paper selects Hefei City as the research object. As the capital city of Anhui Province and one of the megacities in the Yangtze River Delta region, the sub-central city of the Yangtze River Delta urban agglomeration, and an important node city of the "Belt and Road", Hefei City studies the impact of green innovation on its urban manufacturing industry. Other cities have reference and radiation significance. Based on the research on the status quo of Hefei's manufacturing industry and financial policy, from the perspective of financial policy, it analyzes its incentive effect on the green innovation development of manufacturing industry and the problems faced by its green innovation development of manufacturing enterprises, and puts forward countermeasures and suggestions.

Learn about the fiscal policies issued by various places in my country for the manufacturing industry, clarify the obstacles to the development of green innovation in the manufacturing industry, explore ways and means to solve the problems, and put forward direction suggestions in order to give full play to the role of fiscal policies in resource allocation, in order to truly promote "double carbon" The realization of the goal effectively solves the problems faced by the green innovation and development of the manufacturing industry in Hefei, promotes the early realization of a comprehensive green transformation of the manufacturing industry, implements the national green development fiscal policy, and helps the country to achieve the goals of "carbon peak" and "carbon neutrality" as soon as possible .

## **2. Research status at home and abroad**

### **2.1. Research on fiscal policy on the green development trend of enterprises**

The green transformation and upgrading of the manufacturing industry is the focus of the future development of the world, and it is also the general trend. The manufacturing industries of various countries have invested in the green transformation and development one after another. It is a huge challenge for all countries to actively explore the road of green innovation and development of the manufacturing industry. According to the relevant literature at home and abroad, most of the research on the green innovation of manufacturing enterprises in my country lies in the influencing factors of listed companies, government financial subsidies and environmental regulations. For example, Tian Shuying (2022) believes that the "resource allocation effect" of fiscal incentive policies and the "innovation compensation effect" of environmental regulations in demonstration cities can improve the internal environment of enterprises and accelerate green innovation and digital transformation of enterprises, which is manifested in the optimization of production efficiency , Technology green innovation and product value-added promotion pilot cities can promote the transformation and upgrading of enterprises [1]. Dangelico (2017) demonstrated the impact performance between economy, society and environment, and found that the innovation of ecological protection products has no significant impact on the above three. Li Xiaoyi (2021) believes that the efficiency of local fiscal expenditure has a significant role in promoting the green transformation of the manufacturing industry, and has obvious heterogeneity characteristics of regions, scales and

promotion methods of local officials, and the mediation effect of environmental regulation is not significant [2].

## **2.2. Research on Existing Problems of Government Policies for Low-Carbon Development**

Some scholars believe that policies such as environmental regulations and green low-carbon demonstration cities have certain constraints and guidance on the green transformation of enterprises, but the effect is not significant and has certain limitations. Moreover, the inhibitory effect of the fiscal decentralization system on the green innovation of enterprises has also been strengthened under economic pressure. Li Congxin and Sun Xuejia (2022) demonstrated that the impact of environmental regulation on GTFP presents an inverted "N" shape, and there is regional heterogeneity between environmental regulation and GTFP, EC, and TC. In the process of environmental regulation affecting GTFP, there is a threshold effect of the level of economic development [3]. Tian Shuying (2022) believes that the government's financial pressure, the system of the enterprise and the industry to which the policy corresponds will all have varying degrees of impact on the implementation of the policy. Liu Chanchan and Lan Jiajia (2022) believe that fiscal policy has not been effectively combined with low-carbon goals, and fiscal and taxation policies to support green product and green technology research are not sufficient and perfect. Dong Xiangshu (2022) believes that the economic pressure of local governments has strengthened the degree to which fiscal decentralization inhibits green innovation, and the improvement of economic efficiency and green efficiency can alleviate the inhibition of fiscal decentralization on green innovation.

## **2.3. Research on measures to promote green transformation of enterprises**

To promote the green innovation of manufacturing enterprises, the Ministry of Finance has made a lot of efforts in conjunction with other departments. From the perspective of the enterprise itself, Domfeld (2014) believes that the development of green innovation in enterprises needs to be carried out from all aspects, not limited to the product itself, from various aspects such as the manufacturing process, production tools, and emission treatment. The main challenge lies in energy and resource protection, the path to sustainable development in the future requires innovation and the development of high-end manufacturing. From the aspect of government policy, Dong Xiangshu (2022) suggested that the overall role of the central government should be better played to avoid the failure of local governments in green innovation policies, formulate scientific assessments for local officials, and promote the cooperation of the central and local governments in green innovation. Tian Shuying (2022) believes that the role of fiscal policy should be grasped reasonably, accurately and efficiently, and the incentive and normative functions of fiscal policy and environmental regulation should be brought into play. For the time lag of fiscal policy, the coherence of previous and subsequent policies is required, which is the effective use of policy effects. Yuan Peiquan and Yuan Hongying (2022) also proposed to play the main role of the market, let the visible hand of the government promote the invisible hand of the market to allocate resources, and introduce funds from all walks of life to the fields of green innovation and development.

## **3. Development status of green innovation in manufacturing industry in Hefei**

### **3.1. Current Situation of Manufacturing Output Value in Hefei**

While the economy is developing at a high speed, the manufacturing industry in Hefei is also facing tremendous pressure on resources and environment. The report of the Nineteenth National Congress of the Communist Party of China proposed to build a beautiful China with green development. Hefei City also actively responded to the call of the state to promote the

high-quality development of the manufacturing industry and continuously improve the level of green manufacturing.

From the perspective of enterprise scale, at the end of 2021, there were 2,219 industrial enterprises above designated size in the city, and the number of enterprises with an output value exceeding 100 million yuan increased by 93 compared with the previous year. The annual industrial added value has increased significantly compared with the previous year; in terms of industrial distribution, The city's six leading industries, such as automobiles and parts, equipment manufacturing, household appliances, processing of food-grade agricultural and sideline products, flat panel display, electronic information, photovoltaics and new energy, all have different growth rates compared with the previous year. Judging from the growth rate of output value, the output of most major products has grown rapidly, among which the output of integrated circuits has increased by more than half compared with the previous year, and the output of transformers and new energy vehicles has grown steadily. Other major products, such as color TV sets and household washing machines, saw relatively small growth. The fixed investment index of the secondary industry also maintained a stable positive change.

### **3.2. Hefei City has made remarkable achievements in green innovation technology**

Under the active call of the concept of low-carbon environmental protection, various enterprises in Hefei have greatly increased their investment in low-carbon technology research and development, and the number of patents related to green innovation has also increased from scratch. Some of the high-energy-consuming enterprises have energy-saving technologies such as high-efficiency compressor technology, low-temperature welding technology, general-purpose motor technology, permanent magnet motor technology, and special pumps. There are energy-saving and environmentally friendly green home appliances in the traditional manufacturing industry, and emerging environmental protection industries such as the photovoltaic industry. A large number of green innovative technologies have brought new vitality to the ecological environment of Hefei. The PM2.5 value interpreted in 2021 has dropped compared to 2015. Half of the time, the air quality index increased significantly, the six indicators of air quality all met the standards, and the water quality of various freshwater lakes remained excellent.

### **3.3. The leading effect of green development in Hefei is prominent**

In order to achieve the goal of green transformation of enterprises, Hefei City has actively customized the selection and reward specifications for green factories and green design enterprises, and carried out the construction of demonstration areas for green manufacturing systems, actively catering to the selection of relevant demonstration areas carried out by the country. Until 2022, in Under the leadership of the Hefei Municipal Government, there are already many national-level green factories, provincial-level green factories, green supply chain management enterprises, and green design demonstration enterprises for industrial products in the city. The Economic Development Zone has become the first batch of green manufacturing systems in the country. It is one of the pilot cities and won the title of the country's first county-level industrial innovation and innovation base demonstration park. It has played a leading and radiating role in the green industrial development of the province and even the middle and lower reaches of the Yangtze River.

### **3.4. Hefei City's Green Fiscal and Taxation Policies Emphasize Strengthening**

#### **3.4.1. Fiscal Expenditure Policy**

In recent years, Hefei City has attached great importance to the green development of enterprises. Combining the subsidy conditions of the central government, the province and the city, it has planned new projects in multiple directions, continuously deepened the

development of ecological civilization construction, and continued to establish the concept of green development. In order to encourage the green development of enterprises in this city, the Hefei Municipal Government has implemented a series of financial policies to continuously increase capital investment and provide financial subsidies to enterprises with green development.

During the "Thirteenth Five-Year Plan" period, the proportion of the city's ecological and environmental protection expenditures in general public budget expenditures has continued to increase. In recent years, the city's green fiscal and tax incentives have continued to increase, and government subsidy expenditures have increased significantly. In the first half of 2022, the Feidong County Ecological and Environmental Branch will carry out in-depth "Enterprise Direct Train" assistance activities, use the economic platform built by the government to understand the needs of enterprises, and help enterprises solve their needs through on-site consultation and telephone consultation. Timely holding a financing matchmaking meeting for key projects of ecological and environmental protection, providing designated support for green enterprises, in order to promote the implementation of key projects in the field of ecological and environmental protection in Feidong County to achieve results, to play a good role in the "blood-making" and "blood-activating" of finance, and to improve enterprise satisfaction.

In 2022, the Hefei Municipal Government issued the "Notice on Several Policies for Further Promoting the High-quality Development of the Photovoltaic Industry in Hefei". . Hefei City has established a diversified source system of special funds for green development and increased the support of special funds to mobilize the sense of responsibility and enthusiasm of enterprises to promote green development through differentiation and elimination at the end. During the process of promoting the dual-carbon policy of Hefei High-tech Zone, the policy for 2022 has been refined to encourage low-carbon production of enterprises in the park. In 2022, the Hefei Municipal Bureau of Ecology and Environment will guide enterprises to apply for dozens of central, provincial and municipal air pollution control projects, continuously strengthen assistance to enterprises, and promote green development of enterprises. In March 2023, Anhui Province has issued the document "Several Policies to Support Digital Transformation to Promote the Development of High-end, Intelligent, and Green Manufacturing", which states that for enterprises that have been rated as excellent low-carbon and energy-saving enterprises such as green factories and environmentally friendly manufacturing enterprises, One-time bonus. Support the implementation of the green transformation of the manufacturing industry, and include typical demonstration projects and industrial parks in the provincial green transformation into the scope of policy support.

In terms of financial policy support for green innovation of enterprises, Hefei City has been actively using funds to guide and encourage enterprises to innovate and transform, but there are still certain problems in the implementation of policies and the efficiency of the use of funds, coupled with the ever-existing financial pressure , has brought certain resistance to the cause of green transformation.

### **3.4.2. Tax Policy**

Since 2018, my country has implemented green tax policies and environmental protection taxes. It suppresses pollutant-discharging enterprises in advance by announcing tax rate policies, conducts interim supervision by inspecting the production and operation of enterprises, and intervenes ex-post by increasing the cost of pollutant discharge. The Anhui Provincial Local Taxation Bureau implements reductions and exemptions of corporate environmental protection tax for enterprises that meet the preferential tax conditions, and supports environmental protection, mainly for corporate environmental protection, energy conservation and environmental protection. Public green land is exempt from taxation, etc.

Secondly, county-level governments actively focus on the "green" economy, continue to optimize tax and fee payment services, and implement a new combination of tax and fee support policies to help rural revitalization and accelerated development. In addition, for the four aspects of supporting environmental protection, promoting energy conservation and environmental protection, encouraging comprehensive utilization of resources, and promoting the development of low-carbon industries, a large number of preferential tax and fee policies supporting green development have been implemented.

#### 4. Mechanism of Fiscal Policy

Fiscal policy is one of the most powerful levers of macro-control. The requirements for low-carbon, environmentally friendly and green development should also be reflected in the formulation of fiscal policies. Increase green innovation spending to lead the green innovation and development of enterprises. Relief and lighten the burden of green innovative enterprises, and activate the power of green innovation of enterprises.

While the country implements the green and low-carbon development strategy, various undertakings should follow closely behind, and the financial support behind this is an important pillar to promote this great undertaking. Fiscal means mainly include fiscal expenditure and tax policy, fiscal expenditure It plays a key role in the adjustment of social and economic structure and economic development, and can play a guiding role in promoting the green and low-carbon development of enterprises. In terms of government procurement, purchasing behaviors that are biased towards green technology innovation can promote enterprises to actively conduct research and development based on government demand to achieve cooperation with the government. In terms of financial subsidies, reasonable subsidies and rewards for green innovative technologies of manufacturing enterprises can support the innovation costs of enterprises and the normal operation of enterprises. In terms of financial discounts, that is, the government pays all or part of the loan interest for bank loans required for green product research and development in the manufacturing industry, which can stimulate enterprises to carry out green product research and development. Financial appropriations and financial interest discounts can help manufacturing companies with weak foundations. Before the project is carried out, the company can directly obtain funds without being restricted by profitability. In terms of taxation policy, the proposed reform of environmental protection fee to tax has effectively prevented enterprises from evading pollution control loopholes through rent-seeking and other methods. The green innovation and development of enterprises put forward more stringent requirements.

The incentives of tax incentives and financial subsidies can guide some enterprises to innovate green technology to a certain extent, but due to financial pressure, the financial subsidies and tax incentives given by local governments cannot completely offset the financial and human pressure brought about by green technology innovation[ 4]. Financial subsidies generally eliminate the "crowding out effect" through price subsidies. Tax returns are delayed financial subsidies. When the operating capacity of enterprises is poor, it is difficult to stimulate green innovation of enterprises. Financial discounts are also limited by the financing capabilities of enterprises. . The development of green innovation is not only to achieve low-carbon environmental protection and harmonious coexistence between man and nature, but also to promote the sustainable development of enterprises. However, from the perspective of green innovation R&D investment and short-term returns, it may reduce the ability to prevent short-term business risks The daily production and operation of the enterprise is unfavorable. The implementation of fiscal policies to promote green innovation of enterprises is closely related to the financial strength of cities. For non-first-tier cities, the balance between economic development and low-carbon development is a big challenge.

## 5. Problems encountered in green transformation and development of manufacturing industry

### 5.1. The financial support system is not perfect

Anhui Province still lacks standards and regulations on fiscal policies for the green transformation of the manufacturing industry. First, the policy system needs to be improved. Currently, the support provided by fiscal policy is mainly focused on credit obligations of production companies, production development, geographical location and other parts of production companies. There are few measures in terms of government procurement and government budget, which greatly limits the financial incentive effect of the green transformation of the manufacturing industry. Second, the comprehensive strength is insufficient. At present, the support methods of my country's fiscal policy are mostly direct financial support, such as planning to support the progress of manufacturing companies, investment risk taking, etc. At the same time, there are mostly only two types of tax reductions and exemptions: VAT and income tax. There is less support for the use of other taxes such as personal income tax. Moreover, the current financial policy support targets are more inclined to new energy products, and there is insufficient support for low-carbon technologies. Third, due to the turnover of financial funds at all levels, the funds and subsidies of the state and the government are often not in place in time. Difficulties in financial operations make manufacturing companies insufficient in technological change and upgrading, which has become the biggest problem in the transformation and development of the manufacturing industry.

### 5.2. Overall low industrial structure

Compared with Western countries such as Europe and the United States, China started late on the "double carbon" issue, with a short time and heavy tasks. The demand for energy for economic and social development is increasing, and the energy supply determined by resource endowment and the increasing energy demand are mutually exclusive contradictions. For China, it is much more difficult to replace fossil energy with new energy than other countries, so it seems unreasonable to suspend or rectify some enterprises that do not meet the "double carbon" requirements.

Production in Hefei's manufacturing sector is often highly dependent on energy. Hefei's manufacturing industry is mainly labor-intensive and resource-intensive. The leading enterprises are mainly concentrated in basic industries such as non-ferrous metals, steel, coal, and cement, and the industrial structure is low-to-medium. In addition, overall, the basic production level of Anhui's manufacturing industry is still lagging behind. Judging from the ranking of Anhui's industrial competitiveness, most consumption-oriented industries rank high, while the number of high-end manufacturing industries is insufficient. Anhui's equipment manufacturing industry has a large gap with Jiangsu, Shandong, Guangdong, Shanghai and other provinces and cities in terms of scale, innovation and internationalization.

### 5.3. Unbalanced resource allocation in the manufacturing industry

To do a good job in the transformation and upgrading of the manufacturing industry, and to achieve green development, it is necessary to fully realize energy conservation and emission reduction, and reduce production costs. However, looking at the specific situation, in the process of developing the manufacturing industry in Hefei, important factors such as material costs and labor costs are increasing. Especially in terms of labor costs, many manufacturing enterprises take labor-intensive as an advantage to survive and develop. However, in the context of the new era, with high-quality development as the basic requirement, the advantages and value of human resources have been further enhanced, resulting in a sharp increase in labor

costs [5]. Under the influence of the market, the construction of enterprises tends to be in Vietnam, India and other countries with lower labor prices, which also seriously limits the green transformation and development of Hefei's manufacturing industry. Secondly, the prices of raw materials and related equipment continue to rise, and the indirect costs are also rising. The development of the manufacturing industry is in a difficult situation, which greatly limits the transformation and upgrading of Hefei's manufacturing industry.

#### **5.4. Insufficient technological innovation capabilities of enterprises**

The green transformation and upgrading of manufacturing enterprises requires a low concentration of various innovation resource elements and an incomplete industrial chain. This is mainly manifested in the following two aspects: On the one hand, although my country has formed a relatively complete high-end design and planning to transform and upgrade the manufacturing industry, from a practical point of view, different fields, different departments, and different links. However, those related to the transformation and upgrading of equipment production have not fully achieved mutual cooperation, which has led to the over-dispersion of many key core technologies and related innovation resource elements. However, the transformation and upgrading of the manufacturing industry needs to support the industrial chain, innovation chain, and financial chain to form an effective synergistic effect. On the other hand, some state-supported projects aimed at transforming the manufacturing industry still have certain characteristics of a planned economy. For example, some projects require too many specific production indicators, patent applications, training and publications from the beginning. However, the coverage of potential failure risks that may arise during project implementation is obviously insufficient, and the specific application in economic and social development practice has not been fully reflected. At the same time, leading manufacturing companies represented by large state-owned enterprises also need to increase their enthusiasm and initiative to lead transformation and upgrading, and the development efficiency of innovation drivers does not match the pace of changes in market demand. In addition, due to objective constraints such as weak technological innovation capabilities, it is difficult for manufacturing companies to integrate into the relatively closed high-end equipment manufacturing industrial structure system, and there is a problem of poor microcirculation in the production chain.

## **6. Suggestions**

### **6.1. Firm awareness of green innovation**

Firmly establish the concept of innovation and green development. If the manufacturing industry in Hefei wants to achieve green innovation and development, it must first implement the awareness of green innovation and implement the green concept throughout. First of all, the government should advocate and guide the manufacturing industry to understand the national "dual carbon" goals, and clarify the necessity and prospect of green development of the manufacturing industry. Secondly, all enterprises should fully implement the concept of green development, vigorously publicize and popularize the awareness of green development within the enterprise. Through the government's vigorous advocacy of green and low-carbon concepts, the masses can spontaneously generate environmental awareness, thereby guiding consumers' consumption tendency, and then promoting low-carbon reform and innovation of enterprises. Moreover, it is necessary to implement this awareness of green innovation into action, so that various departments and industries can actively implement policies for the development of green innovation in the manufacturing industry and adjust corporate development strategies.

## 6.2. Emphasis on personnel training and introduction

Further implement the policy reform of “decentralization, management and service”, and increase the preferential policies for talent introduction. Currently in the initial and exploratory stage of deep green development, the innovation of green technology requires a large number of innovative talents. Under the strategy of rejuvenating the country through science and education and strengthening the country with talents, we should strengthen the city's investment promotion, retain talents, and attract talents. Provide space for high-level talents through various talent introduction policies, and implement the policy of strengthening the city through talents. Financially, we should increase financial support and policy guarantees for talent training and talent introduction, increase subsidies for talents in the field of low-carbon innovation, actively promote enterprises and colleges and universities to invest in green innovation, and let talents flow in the direction of green development.

## 6.3. Improving relevant financial systems

The government's support for the green development of manufacturing enterprises should not only be limited to financial subsidies and tax incentives, but also to improve the relevant financial system. A stable financial system is the solid foundation for the development of the manufacturing industry. The green upgrading and development of the manufacturing industry must require a large amount of funds in the early stage. Policy support should be given to financing and loans for manufacturing enterprises, and preferential policies for various taxes borne by enterprises should also be increased. In addition, the Hefei Municipal Government should also prepare a reserve fund for the green development of the manufacturing industry to prepare for the urgent need for green development of the manufacturing industry when capital turnover is difficult. In addition, the assessment mechanism of green enterprises should be improved, financial performance management should be strengthened, and the efficiency of the use of financial funds should be increased [6]. Increase the low-carbon budget system, use the financial budget management system to promote the "double carbon" goal, and guide the implementation of the annual green financial budget [7]. Strengthen the complementarity among various policies and enhance the effect of fiscal policies.

## 6.4. Improve the low-carbon financial system

To promote green and low-carbon transformation, reduce the pressure on financial funds and enterprise costs, we should also improve the fiscal and financial system and strengthen cooperation between countries [8]. It is necessary to fully consider the long-term growth of relevant industrial chains and their contribution to carbon peaking and carbon neutrality, improve the corresponding loan approval process and rating methods, and encourage qualified enterprises to issue green bonds such as carbon neutral bonds to increase the investment in clean energy. Use strength. With the continuous development of low-carbon economy, it is an inevitable trend for new energy to move from supplementary energy to main energy. We should actively improve and improve the green financial policy system, guide the innovation of green financial products, increase the support of green credit policies, and stimulate the market. The vitality of the country will promote the financial investment power of international low-carbon projects.

## 6.5. Strengthen government-enterprise cooperation

To win the tough battle for green development and transformation of the manufacturing industry, the government and enterprises must form a united front and work together to promote the green development of the manufacturing industry. The government should play a good role in regulation, improve the market system, maintain market order, and coordinate the harmonious development of various manufacturing companies. The government should strengthen communication with enterprises, understand new trends in the industry, maximize

strengths and avoid weaknesses, vigorously support correct and effective ideas and measures of enterprises, and resolutely order non-compliant enterprises to rectify or suspend operations. Utilize green fiscal and taxation policies, procurement systems, budget policies, and financial investment tools to actively provide conditions for the low-carbon transformation of manufacturing enterprises, encourage green energy investment, guide the green transformation of production and operation of enterprises, and strive to infiltrate the development of carbon reduction goals into public services and in the facility. At the same time, the government should encourage enterprises to actively innovate, adopt an incentive mechanism to mobilize the enthusiasm of enterprises to innovate, and increase the speed of green development of manufacturing enterprises. Enterprises should also conscientiously implement government policies, take the initiative to assume responsibility for green development, and regard the green transformation and development of the manufacturing industry as an important goal.

## Acknowledgements

Funded by the Innovation and Entrepreneurship Training Program for College Students of Anhui University of Finance and Economics (202210378274)

## References

- [1] Tian Shuying, Sun Lei, Xu Wenli, Fan Ziyang. Research on Fiscal Policy Promoting Enterprise Transformation and Upgrading under the Goal of Green and Low-Carbon Development—Evidence from the Pilot Project of "Comprehensive Demonstration City of Fiscal Policy for Energy Conservation and Emission Reduction" [J]. *Financial Research*, 2022, (08):79-96.
- [2] Li Xiaoyi. Efficiency of Local Fiscal Expenditure and Green Transformation and Upgrading of Manufacturing Industry [J]. *Research on Financial and Economic Issues*, 2021, (09): 75-82.
- [3] Li Congxin, Sun Xuejia. Research on the Impact of Environmental Regulation on Green Total Factor Productivity under the Background of "Double Carbon" [J]. *Journal of Baoding University*, 2022,35(06):1-10.
- [4] Gan Xingqiong, Xu Qifan, Yuan Yijie. Regional Industrial Green Transformation Pilots, Fiscal Pressure and Manufacturing Low-Carbon Development [J]. *Financial Research*, 2022, (09): 104-119.
- [5] Yang Qian. Problems and countermeasures of green transformation of Henan's manufacturing industry under high-quality development [J]. *Small and medium-sized enterprises management and technology (first ten days)*, 2021 (06): 29-30.
- [6] Xue Fei, Chen Xu. Carbon Emission Reduction Effect of Green Fiscal Policy—Evidence from "Comprehensive Demonstration City of Energy Conservation and Emission Reduction Fiscal Policy" [J]. *Finance and Economics Research*, 2022,48(07):79-93.
- [7] Zhao Di, Ma Caichen. The construction of a green budget system to promote the realization of the "double carbon" goal [J]. *Local Finance Research*, 2022 (10): 4-10.
- [8] Zhang Ying, Hao Jing. Fiscal Policy to Promote Green and Low-Carbon Transformation Path Analysis [J]. *Western Finance and Accounting*, 2023(04): 17-19.