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Investigation and Research on Water Resource Tax Reform

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Abstract:
With the development of the human economy and society to the present, water resources are vital to human beings and are elements that human beings cannot get away from. Water resources are inexhaustible within a specific quantity limit. Therefore, the use of water resources needs to be controlled. The water resource tax described in this paper is one of the essential ways to protect water resources. Due to the late implementation in our country, many water resource tax problems are worth investigating and studying. Firstly, this paper introduces the implementation status of water resource tax in some typical pilot provinces and finds that each pilot earnestly implements the implementation of water resource tax. The introduction of water consumption enterprises shows that implementing a water resource tax has a positive effect. In addition, this paper also points out the problems in the implementation process of a water resource tax, such as the insufficient inhibition effect on residents' personal water use, the difficulty of tax assessment, and the lack of relevant laws and regulations. To make better use of water resource tax and play the role of a water resource tax, the paper also puts forward suggestions such as scientific adjustment of the water resource tax rate, government joint management, increasing investment, and improving relevant laws and regulations.

Keywords:
water resources; water resources tax; water-saving measures

1. Introduction

With the change in climate and the population increase, the earth's environmental protection is facing severe challenges. The 2024 Government Work Report proposed that we thoroughly practice the concept that clear waters and lush mountains are mountains of gold and silver, jointly promote carbon reduction, pollution reduction, green expansion, and growth, and build a beautiful China where man and nature coexist harmoniously. Water is the source of life and is closely related to environmental protection, so protecting water resources is very important. Taking China as the background, through the analysis of China's water resources, it is found that China has prominent problems such as supply and demand contradiction of water resources, water environment pollution, water ecological degradation, and frequent extremes and emergencies. Therefore, it puts forward corresponding countermeasures. However, with the change in water resources supply and demand and the emergence of new water resource problems, China has to use new means and new policies to protect water resources and improve water utilization efficiency.The implementation of the water resources

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tax was born from a new background.

The tax management method for water resources appeared as early as the pre-Qin period. It developed continuously after this, which also laid a foundation for the collection of water resources tax. To better promote the reform of the green tax system, in 2016, the Guiding Opinions of The State Council on the Reform of the System of Paid Use of Natural Resource Assets owned by the whole People proposed to improve the system of paid use of water resources, strictly enforce the collection and management of water resources fees, and promote the pilot reform of water resources tax. In 2017, the Ministry of Finance and three other ministries and commissions issued the Implementation Measures for Expanding the Pilot Reform of Water Resources Tax (No.80,2017, from now on referred to as the Implementation Measures), which expanded the scope of the pilot to 10 provinces. In 2019, the reform of the water resources tax was fully implemented, and the nationwide collection of water resources tax was officially launched. On September 1, 2020, the Resource Tax Law was formally put into force to further promote the rational use of resources and promote the coordinated development of resources and society. A water resources tax can effectively achieve the goal of water-saving and improve the utilization efficiency of water resources（Wang et al.，2023）. Besides, the zombie degree of high water consumption enterprises after the implementation of the water resource fee to tax reform has become significantly higher（Zhao，2024）, and replacing water resource fees with taxes significantly improves the green innovation level and total factor productivity of enterprises（Xu et al.，2024）. Regarding environmental impact, the pilot reform of water profit and tax has played an essential role in promoting water resource conservation and effective utilization. It has made a crucial contribution to the green development of coastal cities (Qian, 2024). Regarding economic impact, reduced consumer spending on food, tobacco manufacturing, and agriculture is expected to save more water resources at lower financial costs (Luo T et al., 2024). Besides, water resource tax and water pollution tax synergistically promote water conservation and water pollution reduction, and the negative impact on the economy when the tax burden is raised together is lighter than when it is raised alone(Xin et al., 2022).

Expanding the scope of water resource tax implementation is essential for green development in China. To better tell and analyze the water resources tax, this paper starts from the water resources tax implementation pilot, introduces the implementation of the situation and effect, finds that the implementation of water resources tax can change the way water enterprises collect way optimization, and each region according to their situation to formulate the corresponding measures; enterprises have a green transformation, obtain the corresponding results. In addition, this paper points out the problems encountered in the water resources tax implementation process and gives relevant suggestions.

2. Current situation of typical reform of water resource tax

To better understand the implementation of a water resource tax and analyze its effect, this paper will use Hebei, Shaanxi, Sichuan, Shandong, and Inner Mongolia for investigation and research. These areas belong to the pilot reform of the water resource tax and the active implementation of the water resource tax, which has achieved good results. Therefore, this paper takes these provinces as the starting point, first introduces some practices of provincial government departments, and then enumerates the measures and achievements of water consumption enterprises on water saving in each province.

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2.1 Hebei Province

Hebei province has a high population density, high economic activity intensity, and poor water resource endowment. In addition, as the first pilot of water resources "fee to tax," Hebei Province needs to constantly optimize specific measures, refine the division of responsibilities, and provide reference experience for other pilot provinces. Among them, the Hebei Provincial Taxation Bureau of the State Administration of Taxation is based on the Implementation Measures of the Pilot Water Resources Tax Reform in Hebei Province. It has formulated the Measures for the Administration of Water Resources Tax Collection in Hebei Province and other documents. In addition, the " 1 + 15" policy system has also been established. The water consumption industry constantly understands and learns the water resource tax, actively changes the water use mode, suppresses the unreasonable demand for water use, and improves the utilization efficiency of water resources, which positively impacts the protection of water resources in Hebei Province.

Hebei Iron and Steel Group Shahe Zhongguan Iron Mine Co Ltd has adhered to the development concept of "green mine" in the development and construction; the first is the use of circular curtain grouting and water plugging, the second is the use of complete tailing consolidation filling mining method, the third is the use of large-scale, modern equipment, the fourth is the use of water source heat pump for heating and cooling. In particular, it is significant to protect groundwater resources, groundwater ecology, and the surface ecological environment by curtain grouting and complete tailing consolidation filling. In the past three years, the company has reduced its water tax by 70% year-on-year, becoming an example for the industry.

2.2 Shaanxi Province

The total amount of water resources in Shaanxi is insufficient, and the temporal and spatial distribution is uneven. Guanzhong and northern Shaanxi are short of resources, and the development and utilization of water resources are seriously restricted by water resources shortage. To give better play to the effect of a water resource tax, the government adheres to the principle of "two hands make force, innovation-driven" and innovates new data transmission methods. The "Yulin City Economic Tax Source Big Data Application Platform" and the water resource tax management rules have been established to realize the two-way data interaction and create a "model room" of water resource tax. Implementing this way has dramatically improved the efficiency of water resource tax collection.

Yulin's energy and chemical industry is the largest in Shaanxi Province in terms of scale, and water consumption has also been massive in recent years in production. In terms of reducing water use, the GE coal water slurry pressurized gasification process is adopted to optimize the heat exchange process and save circulating water. The technical transformation of the slag fishing machine was made to reduce the water content in the slag increased from 48% to 37%, saving 1.3 million tons of raw water in total. To improve the utilization rate of sewage, high-quality scale inhibitors, and fungicides are adopted to improve the recovery rate of reverse osmosis, reduce the amount of freshwater consumed by saltwater, and reduce the freshwater by 720,000 tons every year. This not only effectively reduces the consumption of water resources but also brings good profits for enterprises. It also protects the local ecological environment to a certain extent.

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2.3 Sichuan Province

Sichuan Province is the "province of a thousand rivers" rich in water resources. Since the implementation of the water resource tax reform, tax authorities in Sichuan have continued to strengthen the implementation of policies, implemented the "one enterprise and one policy" tracking service for enterprises with high water consumption within their jurisdiction, and actively publicized the policies of differential tax rates for different properties of water consumption and doubled the collection beyond the plan, to guide enterprises to go to "green ."The industrial water consumption in Sichuan province continues to decline, and the positive incentive effect of water resource tax is becoming increasingly prominent. The significant increase in water resource utilization costs in high water consumption industries has prompted enterprises to continuously transform and upgrade industrial structures, adjust and optimize water structures, and innovate energy conservation and environmental protection technologies.

Sichuan Baoning Vinegar Co, Ltd. has adjusted the water use structure. Groundwater use is less than 3.75% of the total water use, saving more than 350,000 cubic meters annually. The water resource tax payment is also 84.96% lower than before the reform. In the future, we will further upgrade the water-saving equipment and adopt higher environmental protection standards to promote the high-quality development of enterprises. From 2018 to 2023, yanan, the annual water intake decreased by 3.51%, the water intake cost was reduced to 1.2 yuan/ton, water saving more than 600,000 cubic meters, equivalent to the water consumption of 70,000 households in one month. With an in-depth understanding of water resource tax, under the positive incentive of the green tax system, more and more Bashu enterprises are considering the cost of water saving.

2.4 Shandong Province

Water resources are a critical restricting factor of national economic and social development, but Shandong Province is a severe water shortage area. Therefore, Shandong province needs to ensure the security of its water resources. Many businesses have realized this and have begun to adopt water-saving facilities. Government, the Weihai city since April 2023, will be implemented throughout the city for water tax filling type a critical declaration, function implementation, taxpayers login electronic tax, open water tax returns can automatically out of the quarter water consumption, taxpayers directly click submit the button, to declare, further simplify the tax process, improve the accuracy of the declaration, compression tax time more than 50%.

Trust high-tech as a collection of the high-end chemical industry, clean energy in the integration of comprehensive industrial base, under the environmental protection tax, enterprise transformation development concept, has built the biochemical treatment system, water treatment system, water treatment system, etc., after processing water to industrial water standards, can all back for a production system, realize the enterprise water system recycling. Significantly improve the utilization efficiency of water resources.

2.5 Inner Mongolia

Water resources are an essential guarantee for high-quality economic and social development. Inner Mongolia is the bearing area of major regional coordinated development strategies such as Western and high-quality development. Still, water resources are scarce, the spatial and temporal distribution is uneven, and the contradiction between supply and demand is prominent. Therefore, the protection of water resources

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is essential for Inner Mongolia. Since the water resources tax reform, the government has straightened out the relationship between water resources taxes and fees, accelerated the efficient utilization of water resources, and promoted the society to form a good atmosphere for water conservation and water resources protection. At the same time, the water resources tax will implement differentiated tax rates, forcing enterprises to reduce the amount of groundwater used, guide taxpayers in reasonably adjusting water demand, improving water use efficiency, promoting the economic and intensive recycling of water resources and ecological environment protection, and promoting green development and lifestyle.

Take Inner Mongolia Daihai Power Generation Co, LTD. for example, after the original tubular cooling generator set was stopped and transformed, the water resource tax of 1.39 million yuan in 2019 is about 1 / 15 of the water resource fee in 2018. In addition, Inner Mongolia Risheng Zhibo Metallurgy Co., Ltd. uses reclaimed water treatment to reduce the amount of new water; ferroalloy enterprises such as Huade Tiancheng Ferroalloy Co, Ltd. actively recycle cooling water, realizing a "win-win" of promoting water conservation and releasing ecological dividend. The water-saving measures of these enterprises have achieved good results and improved the utilization efficiency of water resources.

3. Problems existing in the implementation of the water resources tax

Although the implementation of water resources has achieved some results, the situation of water resources in different regions is also different due to the short time of its implementation and the lack of experience. Among them, the water resource tax policy has substantially improved water resource utilization efficiency in eastern China more than in the central and western regions (Lan et al., 2022). Therefore, the relevant measures must be constantly modified and improved to achieve the expected effect of implementing the water resources tax. The following questions are raised based on the knowledge of water resource taxes.

3.1 The inhibiting effect of the tax burden is insufficient

Domestic water accounts for a relatively large proportion of water consumption. To reduce the burden of residential water consumption and urban public water supply enterprises, Shanxi, Henan, and other provinces said that during the pilot period, the water resource tax paid by urban public water supply enterprises can not be included in the price of tap water, the implementation of price tax separation, not as a basis for value-added tax. The implementation of this measure has a specific welfare. The effect is that because residents and water supply enterprises do not have to bear any costs, they will not control the use of water resources, so they can not get the desired effect. From the perspective of domestic water consumption in Henan Province from 2019 to 2021, the water consumption increased from 4.16 billion cubic meters to 4.510 billion cubic meters, and it is increasing year by year, so it can be seen that residential water consumption has not been affected by the implementation of water resource tax. In addition, China is a large agricultural country, and agricultural water consumption is also significant, but China's agrarian water efficiency is low, and water resource waste is serious. However, the collection efficiency of the water resource tax rate for agriculture is also relatively low, which can not achieve an excellent water-saving effect and can not reach the expected goal of water resource tax implementation.

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3.2 It is difficult to verify the tax amount

Water resource tax mainly adopts the way of levying according to the quantity, and the amount of water resource utilization is related to the size of the tax. However, many problems regarding the relevant measurement infrastructure still need to be addressed. First, the installation cost of water intake facilities is high and requires regular maintenance and overhaul. Labor costs will also increase, and some water users are unwilling to bear the relevant costs, resulting in increased costs for metering departments and are reluctant to build metering facilities. Secondly, the local verification methods are not uniform, resulting in continuous conflicts. As the mobility of water makes the management and collection of water resources more complex than that of other tax objects, water access issues vary in different regions, water rights are not clear, and the lack of coordination among various departments leads to asymmetric information on water resources among different areas, and unified management is impossible.

3.3 Relevant laws and regulations are not perfect

In 2002, China promulgated the "Water Law of the People's Republic of China," the highest law on water resources. After that, relevant laws and regulations were also introduced, but most of the laws were relatively weak, and the implementation of the water resources tax could not be better protected. For example, Article 24 of the "Regulations on Groundwater Management" (Order of The State Council of the People's Republic of China (No. 748)), which came into effect on December 1, 2021, stipulates that The State Council shall, by the needs of national economic and social development, levy a water resource tax on units and individuals that draw groundwater on a pilot basis. It is much weaker than the water method. In particular, some illegal water intake behaviors or bad water use situations are encountered. These difficulties are relatively large, and it is difficult to achieve a severe crackdown, so to promote the rational use of water resources, the use of water resources structure more healthy, more should improve the relevant laws and regulations of water resources tax to make the excellent development of water resources tax.

4. Water resource tax reform implementation proposal

As can be seen from the above, the implementation of the water resources tax has produced a positive effect on protecting water resources. Enterprises 'awareness of water saving has been continuously enhanced, and they are constantly promoting enterprises to carry out green innovation, injecting impetus into China's green transformation and upgrading. Therefore, combined with the problems found, this paper provides the following suggestions for better implementing the water resources tax.

4.1 Scientific adjustment of water resources tax rate

At present, Jiangxi Province has not been included in the water resource tax reform pilot area. Still, with the continuous deepening of water resource tax reform, it is the general trend to implement it nationwide. The current water resource fee rate in Jiangxi is relatively low. Therefore, the water resource tax amount can be appropriately adjusted when the water resource fee is changed to raise people's awareness of water saving. For example, the tax rate for residents' personal water use can be adjusted appropriately, taking into account that when the tax rate is too high, the living cost of residents will be excessively increased, thus inhibiting

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economic development, and when the tax rate is too low, the regulation effect of water resource tax cannot be effectively implemented. In agriculture, tax rates can be raised to increase agricultural costs, achieving the purpose of rational use of water resources and improving the utilization rate of water resources. Due to the different water use conditions in each region, it is also necessary to make appropriate adjustments according to the local conditions so as to better play the role of water resources tax.

4.2 The Government joint management increase investment

Because the water resource tax is calculated according to the volume of tax, the relevant tax departments must be collected according to the data obtained by the metering facilities; therefore, the accuracy of the measurement requirements is higher, and the requirements for the metering facilities are enhanced. As seen above, metering facilities must incur more costs, and people must be arranged to inspect them. To solve this problem, the state can increase subsidies to relevant departments, encourage companies to introduce advanced metering facilities and promote facilities. The government can also formulate relevant preferential policies to reduce relevant costs and reduce taxpayers' concerns. To strengthen the management of water resources and better assess the amount of tax, the competent departments of water administration and tax authorities and other administrative departments should conduct joint supervision and management, do an excellent job in the docking work of various departments and regions, solve the problems of local information differences and information asymmetry, and improve the efficiency of water resources verification.

4.3 Improve relevant laws and regulations

Implementing a water resource tax is of great help to protect water resources and promote green development in our country. Implementing a water resource tax is not without the support of the state. Only by constantly improving the relevant laws and regulations can the effect of water resource tax be brought into full play. Therefore, it is urgent to confirm the legal status of water resource tax collection and management, improve relevant laws and regulations, and enhance the influence of water resource tax. However, due to the large regional differences in China and the different water resources in each region, each region should take implementation measures according to local conditions and the characteristics of economic development and environmental resources in their respective provinces. In addition, relevant preferential policies can be improved. For example, the production of water-saving facilities for enterprises can be reduced, green innovation can be promoted, and water resources can be protected.

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