

Effect Analysis and Policy Suggestions of Value-added Tax Credit Refund Taking Advanced Manufacturing Industry in Anhui Province as an Example

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Abstract: In recent years, under the policy background of "tax reduction and fee reduction", the retention tax rebate system has become one of the hotspots of value-added tax reform. This year's "government work report" further proposed to carry out large-scale tax rebate on the tax retention and credit, greatly digest the stock tax retention and credit, and focus on supporting the advanced manufacturing industry. As the highlight of the combined tax support policy, it provides strong support for stabilizing the macro-economic market. Based on the industry development and data of advanced manufacturing industry in Anhui Province in recent years, this paper makes a reliable analysis on the impact of VAT credit refund on advanced manufacturing industry, analyzes the effect of VAT credit refund, and puts forward practical policy suggestions according to the research results.

Keywords: VAT credit refund, Advanced manufacturing, Effect analysis.

1. Introduction

Value-added tax (VAT) credit refund was first implemented in 2011, but at the beginning of implementation, the policy only involved the major integrated circuit project enterprises approved by the state, and did not join the advanced manufacturing industry and power grid enterprises until 2018. Since 2019, all national departments have successively issued supplementary documents to improve the relevant policies of retention tax rebate. Throughout the evolution of China's retention, credit and tax rebate policy, it can be seen that the amount of tax refunded to enterprises by the old policy is relatively limited, and the policy rules need to be improved and improved. However, in the past two years, the retention, credit and tax rebate policy has continuously increased the strength and scope of tax rebate. According to the deployment requirements of this year's government work report, we will implement a new combined tax support policy, which mainly includes: focusing on supporting manufacturing and other industries, comprehensively solving the problem of tax retention and credit in manufacturing and other industries, and strengthening the policy of value-added tax retention, credit and refund in manufacturing and other industries [1]. Previously, for advanced manufacturing industries, the incremental tax allowance was refunded in full on a monthly basis. This time, the scope will be extended to all manufacturing industries, and the stock retention tax will be refunded at one time before the end of this year. Such policy changes also reflect that China's retention tax rebate policy has experienced a process from conditional and selective tax rebate to full tax rebate. In order to support the development of small and micro enterprises, manufacturing and other industries, boost the confidence of market players and stimulate the vitality of market players, on March 21, 2022, according to the Announcement No. 14 of the State Administration of Taxation of the Ministry of finance, the tax

rebate for enterprises will be further preferential. For the one-time refund of stock tax in advanced manufacturing and other industries, we will focus on supporting advanced manufacturing industries, achieve the simultaneous refund of incremental retention and stock retention, and highlight the institutional, one-time and phased characteristics of the policy. Premier Li Keqiang pointed out in the government work report in 2022 that the new combined tax support policy will be implemented, the VAT system design will be vigorously improved, which is similar to the retention tax rebate system of first payment and retreat, and large-scale tax rebate will be implemented for the retention tax in advance. It stressed the need to implement the new combined tax support policy, adhere to the combination of phased measures and institutional arrangements, and carry out tax reduction and tax rebate at the same time. Comprehensively consider providing cash flow support for enterprises, promoting employment, consumption and investment, vigorously improve the tax system design of value-added tax, which is similar to the tax rebate system of first payment and refund, and implement large-scale tax rebate for the tax rebate in advance. The state focuses on supporting the manufacturing industry and comprehensively solves the problem of tax rebate for manufacturing, scientific research and technical services, ecological and environmental protection, electric power and gas, transportation and other industries. It can be seen that the strength of value-added tax retention and rebate has been significantly increased to effectively boost market confidence. At the same time, the government estimates that the annual tax rebate and tax reduction is about 2.5 trillion yuan, of which about 1.5 trillion yuan is reserved for tax rebate, and all the tax rebate funds go directly to enterprises [2].

Increasing the reform of retention, credit and tax rebate is a direct and efficient relief measure for all kinds of market entities by adhering to the "two unwavering". It is not only a key measure to stabilize growth, stabilize market entities and ensure employment, but also a reform to conserve tax sources

and vigorously improve the value-added tax system. At the same time, the central government will increase financial support for local governments, and the subsidy funds will reach cities and counties directly. Local governments and relevant departments should establish and improve the working mechanism, strengthen the fund allocation, and ensure that the key measure of tax rebate and tax reduction is implemented in place, so as to provide timely help for enterprises and help enterprises revitalize themselves. China's value-added tax rebate policy has great strength and obvious effect. It has a good sustainable role and effect in alleviating the capital turnover pressure of enterprise taxpayers. It has experienced several years of practice, and the policy is becoming more and more complete. At the same time, it also continues to find and solve problems in the process of implementation.

2. Policy Practice

2.1. "Integrated Circuit" Enterprise First

On November 1, 2011, China issued the early policy of retention, credit and tax rebate, which refunds the value-added tax retained by integrated circuit enterprises at the end of the period due to the purchase of equipment. At the same time, it has the defects of regional restrictions, industry unity and regional unity. As an early policy, it is relatively "immature" and has no practical experience, so it has relatively little support and help for enterprises. However, the introduction of this policy provides a reference for the later value-added tax reform [3].

2.2. Industry Expansion and Bonus Increase

With the introduction of the early value-added tax rebate policy, China's improvement of the policy is not very fast, but it is also in a process of development. After nearly six years of trial and promotion, China has comprehensively launched the pilot scheme of replacing business tax with value-added tax since May 1, 2016. So far, the business tax has withdrawn from the historical stage, and the value-added tax has become more perfect and standardized after several years of reform. As the focus of value-added tax reform, the tax rebate of retention and deduction is also developing and changing under the background of tax reduction and fee reduction. In 2018, in order to further implement the national tax reduction and fee reduction policy, make enterprises feel the policy dividend and drive the economic development of enterprises, the scope of value-added tax rebate industry began to expand. In the past, the relatively single industries were expanded to include advanced manufacturing, R & D and other service industries and power grid enterprises. Such policy changes left a heavy mark in the history of China's value-added tax reform, and the applicable industries and scope of value-added tax rebate were expanded, Let enterprises more clearly feel the reduction of tax burden and the support of the state, which will also help enterprises obtain more funds, so as to expand investment and enlarge the dividends brought by tax rebate.

2.3. Lift Industry Restrictions and Help Enterprises to Bail Out

In 2019, under the background of deepening the reform of value-added tax, the reform of retention tax rebate continued to increase. The State Administration of Taxation has clarified the whole process of the final tax rebate. In 2022, the policy

scope of the monthly full refund of incremental VAT in advanced manufacturing industries will be extended to six major industries, including small and micro enterprises and manufacturing, and the stock tax will be refunded at one time. The retention tax rebate policy has developed from the original industry singleness to the current industry wide tax rebate [4].

The continuous implementation of the new policy of retention and tax rebate has released the policy dividend fastest and most effectively. The tax department of Anhui Province has also upgraded the tax collection and management information system in time, optimized the work efficiency and service function, established a counterpart leading group, and returned the tax to enterprises in the form of real money to the greatest extent, In particular, the advanced manufacturing industry and other industries that have become the focus of the policy have refunded more than trillion yuan of taxes to enterprises.

3. Theoretical Basis

Theoretically, the development of advanced manufacturing industry needs advanced technology, advanced equipment, excellent talents and more important innovation. If you want to have these four conditions, you need a lot of cash flow, which is very important for the development of enterprises. In the actual development of manufacturing industry, raw materials, inventories and finished products will not be converted into cash flow immediately after sales, which takes a certain time. During this period, enterprises may encounter cash flow crisis and face the choice of bankruptcy or forced sale. The retention tax rebate solves the dilemma that manufacturing enterprises lack cash flow when their current assets are not converted into cash flow in time. In enterprises with abundant cash flow, the retention tax rebate increases their cash flow, which can enable enterprises to make more investment, technology research and development, equipment renewal and personnel introduction.

The abundant cash flow makes part of the external financing of enterprises turn to internal financing. Through the capital cost theory, it can be concluded that the capital cost of enterprises will be effectively reduced. The reduction of capital cost helps to improve the solvency of enterprises and increase the profit level of enterprises. The increase of corporate profits is reflected in the increase of new expansionary cash flow to a certain extent. This multiplier effect will eventually form a continuous virtuous circle, which is reflected in the continuous accumulation of enterprise capital and the continuous increase of enterprise value, which is conducive to enterprises to increase investment in innovation. Similarly, if we make good use of the financial relaxation effect brought by book current assets, the capital turnover efficiency should be significantly improved, which will also increase the company's R & D investment. At the same time, through the superposition of the above effects, these benefits will eventually be reflected in the company's financial statements and the stock price, so as to enhance the confidence of shareholders, attract social funds, and then enhance the internal R & D value of the company.

In addition, enterprise innovation needs "courage" with guidance and confidence. As the signal carrier of tax preference, announcement 39 and announcement 84 also play multiple roles in the innovation of enterprises at the ideological level. As a signal of the inclination of the government to invest in the market, many enterprises will

reduce the impact of this kind of reform. At the same time, another main body in the market - the prediction of enterprise management personnel on the psychology of investors may become the foundation of its reform. Since the tax rebate is the return of part of the input tax to be deducted by the enterprise, generally speaking, the composition of the enterprise's large input tax is caused by the main business. Therefore, the promulgation of the policy will make the enterprise pay more attention to the main business, constantly improve its own field and strive for development. Tax reform also plays a guiding role for the whole industry. At this time, the tax preference signal may have a positive incentive effect on accelerating the transformation and upgrading of enterprises and industries and promoting enterprise innovation.

4. Empirical Research

4.1. Model Building

Based on the above theoretical certification, this paper believes that the development of advanced manufacturing industry will be promoted after tax incentives such as retention tax rebate. Through the analysis of advanced manufacturing industry in Anhui Province, railway, ship, aerospace and other transportation equipment manufacturing industry, electrical machinery and equipment manufacturing industry, computer communication and other electronic equipment manufacturing industry, instrument and meter manufacturing industry, general equipment manufacturing industry, special equipment manufacturing industry Analyze the industry data of eight industries such as pharmaceutical manufacturing and chemical fiber manufacturing in 2019 and 2020 to demonstrate the point of view of this paper. This paper selects the main economic indicators of large-scale enterprises in eight industries in Anhui Province in 2019 and 2020. The tax rebate will be retained in 2019 and large-scale tax rebate will be carried out in 2020. Therefore, the data of 2019 and 2020 are used to demonstrate the dynamic role of Badong as an advanced manufacturing industry. The total assets, liabilities, owner's equity and total profits of eight industry scale enterprises are selected for comprehensive evaluation. Without the influence of normal growth, the analytic hierarchy process is used for modeling to comprehensively evaluate the development of advanced manufacturing industry in the province in 2019 and 2020.

According to the AHP method, an analytic hierarchy process model is established to evaluate which year is better for the development of advanced manufacturing industry before and after tax rebate.

The AHP model first constructs the judgment matrix, and forms the judgment matrix according to the comparison of the importance of the four economic indicators under the criteria of the criteria layer. After constructing the judgment matrix, it is necessary to check the consistency of the judgment matrix, find the maximum characteristic root of the judgment matrix, calculate the consistency index C1, and then calculate the consistency proportion Cr. When $Cr < 0.1$, it has good

consistency, and the weight vector of the corresponding index is equal to the eigenvector corresponding to the maximum eigenvalue of the matrix. The calculated eigenvector can obtain the weight coefficient representing the importance of the factors of this layer relative to the factors of the previous layer. Then through the weighted summation of the weight value, the weight vector of the upper index and the factor of the total weight normalization vector can be calculated, in which the stage corresponding to the maximum weight value is the maximum factor.

Calculation formula of maximum characteristic root:

$$\lambda_{\max} = \sum_{i=1}^n \frac{(AW)_i}{nW_i} \quad (1)$$

Where, AW is the product of judgment matrix A and eigenvector W; $(AW)_i$ is the i th component of AW; W_i is the i th component of eigenvector W.

Formula of consistency index C1:

$$C1 = \frac{\lambda_{\max} - n}{n - 1} \quad (2)$$

Formula of consistency ratio Cr:

$$Cr = \frac{C1}{R1} \quad (3)$$

Among them, λ_{\max} is the maximum eigenvalue of the matrix; n is the order of the matrix; R_1 is the random consistency index, and the corresponding value can be obtained by looking up the table.

Calculation formula of eigenvector W:

$$AW = \lambda_{\max} W \quad (4)$$

Formula for normalization of total weight:

$$S_i = \sum_{j=1}^n S_j W_j \quad (5)$$

Where S_j is the weight vector value of the scheme layer to the criterion layer; W_j is the weight vector value of the criterion layer to the target layer.

Through the weighted summation of the weight values, the weight vector of the upper index can be comprehensively calculated. Obtain the factor that S_i is the total weight normalization vector S, in which the stage corresponding to the maximum weight is the optimal stage.

4.2. Empirical Results and Analysis

In this paper, 2020 is taken as scheme 1 and 2019 as scheme 2. Since this paper studies whether the retention tax rebate promotes or hinders the development of advanced manufacturing industry, the four economic indicators of advanced manufacturing industry are used as the criteria. The statistical data of advanced manufacturing industry in 2019 and 2020 are shown in Table 1.

Table 1. Statistics of advanced manufacturing industry

Project	Total Assets	Liabilities	Owner's equity	Total profit
2020	14023.88	8301.29	5722.57	616.51
2019	12149.94	7004.65	5145.28	621.93

The criteria matrix and consistency matrix are as follows:

$$\text{Criteria matrix: } \begin{pmatrix} 1 & 5 & \frac{1}{2} & 4 \\ \frac{1}{5} & 1 & \frac{1}{10} & \frac{4}{5} \\ 2 & 10 & 1 & 8 \\ \frac{1}{4} & \frac{5}{4} & \frac{1}{8} & 1 \end{pmatrix}$$

$$\text{Consistency matrix: } \begin{pmatrix} 1 & \frac{11}{13} \\ \frac{2}{13} & 1 \end{pmatrix}, \begin{pmatrix} 1 & \frac{9}{11} \\ \frac{2}{11} & 1 \end{pmatrix}, \begin{pmatrix} 1 & \frac{8}{9} \\ \frac{1}{9} & 1 \end{pmatrix},$$

$$\begin{pmatrix} 1 & \frac{1}{12} \\ \frac{11}{12} & 1 \end{pmatrix}$$

According to the actual report data, criterion matrix and consistency matrix of the enterprise, the development level of advanced manufacturing industry in 2019 and 2020 is calculated with the help of Python software. See Table 2 for details.

Table 2. Calculation results of AHP model

Criterion layer	CR=0.0000				
Criterion layer weight	[0.2898, 0.0579, 0.5797, 0.0724]				
Scheme layer	Scheme I	Scheme II	Maximum eigenvalue	CR	Consistency test
Criterion 1	0.662	0.337	1.366	-0.703	True
Criterion 2	0.638	0.351	1.389	-0.768	True
Criterion 3	0.685	0.314	1.325	-0.749	True
Criterion 4	0.299	0.701	1.293	-0.785	True
Target layer	[0.6485, 0.3514]				

It can be seen from the data in the table that the development score of advanced manufacturing industry in 2020 is higher than that in 2019, which shows that the retention tax rebate has injected vitality into the development of advanced manufacturing enterprises. The retention tax rebate plays a great role in promoting the development of advanced manufacturing industry in the province.

However, it can also be seen that compared with 2019, the liabilities of advanced manufacturing scale enterprises in Anhui province increased more and the profits decreased in 2020. The increase in liabilities is mainly current liabilities. Although this is due to the increase of enterprise accounts receivable and accounts payable, the increase of current liabilities has higher requirements on the capital of enterprises. For enterprises, it increases a certain risk. They should expand the tax rebate proportion as much as possible and increase the cash flow of enterprises. At the same time, enterprises should do a good job in risk management and prevent bankruptcy. Although the profit is reduced, it is still considerable. It is required that the advanced manufacturing industry in the province should pay attention to cost management while expanding.

5. Effect and Existing Problems

5.1. Effect Analysis

(1) Boost confidence and encourage investment. The implementation of the retention tax rebate policy alleviates the financial pressure of enterprises, pays equal attention to increment and flow, and continuously increases the tax rebate. Under the background of the increasing downward pressure of the current economy, it is conducive to the recovery and development of the enterprise economy, provides policy support for China's advanced manufacturing taxpayer enterprises to better revitalize their funds, and provides assistance for enterprises in purchasing raw materials, paying wages and interests, It has greatly optimized the capital situation of enterprises, boosted their confidence, and given enterprises more development opportunities in enterprise investment.

(2) We will deepen tax reform and stabilize economic development. The value-added tax rebate policy is an important policy for the country to deepen the reform of value-added tax. It is conducive to stabilizing the macro-

economic market, improving the modern value-added tax system, and making it a powerful measure to deal with the downward pressure of the economy. In general, from the effect of the retention tax rebate policy tested in practice, it can be seen that the policy can not only deal with the downward pressure on the economy in the short term, but also deepen the reform of China's value-added tax system.

5.2. Problems of Tax Refund

(1) The value-added tax rebate policy has caused a temporary shortage of financial funds in the implementation of advanced manufacturing industry. Article 4 of the Provisional Regulations on value added tax stipulates that the amount of value-added tax payable is the balance of the current output tax deducting the current input tax. The balance of the current output tax deducted from the current input tax. When the output tax of the current period is less than the input tax of the current period and is insufficient for deduction, the insufficient part can be carried forward to the next period for further deduction. In the implementation of China's value-added tax rebate policy, according to the latest policy content, it not only considers the tax handling cost of taxpayers, but also comprehensively considers the administrative cost of tax authorities and the prevention and control of tax related risks. Therefore, more restrictions are set in the policy formulation, which makes the actual operation complexity of enterprises more prominent in the specific implementation, In this case, whether taxpayers implement the corresponding preferential tax policies one by one according to their policy conditions, or the tax authorities pay little attention to the review of the conditions for the retention and refund of value-added tax, it will lead to corresponding risks and problems, which will have an adverse impact on the implementation of their policies and relevant achievements. For example, compared with 2019, the liabilities of advanced manufacturing scale enterprises in Anhui Province have increased significantly and the profits have also decreased in 2020. The increase in liabilities is mainly current liabilities. Although this is caused by the increase of enterprise accounts receivable and accounts payable, the increase in current liabilities has higher requirements for the capital of enterprises and increased certain risks for enterprises. We should expand the tax rebate proportion as much as possible and increase the cash flow of enterprises, At the same time, enterprises should do a good

job in risk management to prevent bankruptcy. Although the profit is reduced, it is still considerable. It is required that the advanced manufacturing industry in the province should pay attention to cost management while expanding.

(2) Current years, some small and medium-sized advanced manufacturing industries face prominent pressure on talents and funds in market development. In this case, some enterprises do not employ professional full-time accountants in order to save economic costs, As a result, there are great differences in the professional quality performance of relevant staff in enterprise financial management. Due to the lack of systematic learning of financial and accounting system and tax policies by some financial and accounting personnel, or the high frequency of replacement of financial and tax personnel, there is insufficient continuity performance in more complex policy business learning and can not be accurately grasped from the overall operation status of the enterprise, It will lead to the poor adaptability of enterprise operation and management to the adjustment and change of tax policies, and have a great adverse impact on the enjoyment of preferential tax policies and the rational planning and formulation of enterprise business strategic plan.

(3) There are still some problems in the specific operation of value-added tax retention and rebate in advanced manufacturing industry. According to the relevant contents of China's current value-added tax rebate policy, the "Announcement No. 20" of the State Administration of Taxation stipulates the basic conditions and application process of VAT rebate in principle. As the tax reduction and fee reduction efforts of the retention tax rebate policy and its role are relatively significant, it has a good sustainable role and effect in alleviating the capital turnover pressure of enterprise taxpayers. It is a measure with significant role and effect. However, like the implementation of the export tax rebate policy, it has a certain risk of tax fraud, which has a prominent harmful impact on the promotion of tax reform and the implementation of the value-added tax retention tax rebate policy, In addition, there is still a lack of corresponding provisions on the fraud control of the retention tax rebate policy in China's laws. Once the value-added tax liquidation and the follow-up on-site verification of the retention tax rebate by the tax authorities are not timely, it will lead to the taxpayer's compliance risk and the mixed input tax offset of taxpayers who include both tax exemption and simple tax items in the general tax items, and eventually lead to various tax related risk problems.

6. Policy Suggestions

6.1. Maintain the Principle of Neutrality of VAT

The tax neutrality of value-added tax means that when setting up the tax system, the national tax department does not consider or basically does not consider the macro role of tax on the economy, but allocates resources by the market without any intervention by the government. China's value-added tax reform continues to deepen. As an important part of the reform, the retention tax rebate policy should always follow the neutral principle, not disturb the market, not change people's choice of goods, expenditure or savings, and ensure the normal operation of the market economy. For a long time,

China's excess input tax for enterprises has been retained rather than refunded. Although it can be deducted in the future, it still occupies enterprise funds to some extent, which limits the cash flow of enterprises, weakens the investment ability of enterprises, violates the tax neutrality principle of value-added tax to a certain extent, and has a negative impact on enterprises. Therefore, China's retention tax rebate policy should always maintain the neutral principle in the process of continuous improvement.

6.2. Optimize the Business Environment and Strengthen Personnel Training

In the actual implementation of the retention tax rebate policy, it is necessary to strengthen the internal management and guidance of the enterprise, improve the comprehensive ability and professional quality of the tax personnel within the enterprise, and continuously optimize the business environment, so that the enterprise has more sufficient funds for the introduction of talents, the upgrading of technology, the training of employees and the establishment of professional tax human resources system, so as to better and fully understand the actual situation of the enterprise, Make better use of the tax support policies provided by the state to create greater benefits for enterprises and maximize the policy dividend.

6.3. Clear Operation Guidelines and Strict Anti Fraud Measures

The retention tax rebate policy is strong and has many policy dividends, but at the same time, there are illegal acts of defrauding taxes. In view of this kind of risk, the relevant departments should carry out strict process control over the tax refunded by the tax retention and credit, and formulate a scientific and strict management system to ensure that the tax refunded accurately reaches the qualified enterprises. When the tax authorities receive the application for tax rebate for retention of taxpayer enterprises such as advanced manufacturing industry, they shall conduct strict examination according to the corresponding management process and supervision measures, verify the relevant data submitted, seriously deal with the subjective concealment of taxpayers, and resolutely put an end to the tax fraud similar to that in export tax rebate.

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