

# *Research on the optimization measures of tax planning of Jie'an Hi-Tech*

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**Abstract:** As a high-tech enterprise, Jie'an Hi-Tech has made remarkable achievements in the field of high-end technology research and development and virtual simulation, and its financial condition is good. However, there is still much room for improvement in the tax planning of VAT and corporate income tax. The article points out that by optimizing the tax calculation of procurement and sales, adjusting the depreciation method of fixed assets, reasonably handling the tax burden of subsidiaries and making full use of the additional deduction of R&D expenses, Jie'an Hi-Tech is expected to further reduce tax costs and improve profitability. Therefore, companies should strengthen internal tax management and make full use of preferential tax policies to achieve tax cost control and maximize corporate value.

## **1. Introduction**

### **1.1 Company Profile**

Since 2002, Jie'an Hi-Tech has been committed to high-end technology research and development and innovation, relying on VR, AR and system simulation technology to provide professional virtual simulation solutions for rail transit, general aviation, emergency safety and other industries. In the field of rail transit, more than 500 sets of training systems have been developed, covering all major systems. With its unique technical advantages, Jie'an Hi-Tech has transformed into an asset-light and environmentally friendly high-tech enterprise, ranking leading in the country.

### **1.2 Running a business**

Jie'an Hi-Tech has a comprehensive business system, covering four core sectors of sales, procurement, production and R&D, mainly through bidding to obtain business, focusing on providing comprehensive solutions for virtual simulation training, and is committed to promoting the in-depth application of virtual reality and simulation technology in the field of vocational education and training. Its business focus falls on the two key areas of rail transit training and emergency safety, and it also has a certain market accumulation in navigation ship simulation, equipment simulation

training and air transport simulation.

### 1.3 Key Financial Indicators

#### 1.3.1 Business Status

Table 1: Operating conditions of Jie'an Hi-Tech from 2019 to 2023 Unit: 10,000 yuan

project	2019	2020	2021	2022	2023
Operating income	31,513.02	28,598.11	26,816.74	30,128.76	35,598.75
Cost of Doing Business	14,520.00	13,180.01	12,651.33	14,120.52	17,147.71
Period fees	8,639.06	8,526.10	9,980.81	11,092.41	13,353.11
R&D expenses	2,317.51	2,680.24	2,663.39	3,498.22	3,980.34
R&D expenses as a proportion of operating income	7.35%	9.37%	9.93%	11.61%	11.18%

Looking at the table 1, in 2023, Jie'an Hi-Tech's operating income, operating costs and period expenses will all increase, with a year-on-year increase of 18.16%, 21.44% and 20.38% respectively. The increase in operating income was mainly due to the increase in project orders, while the increase in operating costs was corresponded to the increase in revenue. The expenses during the period reached 133.5311 million yuan, of which the R&D expenses increased by 13.78% year-on-year, which was attributed to the increase in R&D investment. In addition, from 2019 to 2023, Jie'an Hi-Tech's operating income will exceed 200 million yuan, and the proportion of R&D expenses meets the criteria for high-tech enterprise recognition.

#### 1.3.2 Assets and liabilities

Table 2: Assets and liabilities of Jie'an Hi-Tech from 2019 to 2023 Unit: 10,000 yuan

project	2019	2020	2021	2022	2023
liquid asset	43,401.98	82,386.32	77,259.24	79,131.59	72,699.52
Non-current assets	5,701.61	11,807.65	16,295.12	20,072.11	34,282.09
Total assets	49,103.59	94,193.96	93,554.36	99,203.70	106,981.61
Total liabilities	12,777.02	17,090.89	18,440.88	21,736.29	24,988.87

From the table 2, the total assets of Jie'an Hi-Tech continued to rise. Current assets were 434.0198 million yuan in 2019, increased to a peak of 823.8632 million yuan in 2020 and then fell, and decreased by 64.3207 million yuan by the end of 2023, a decrease of 8.13%. During the same period, non-current assets increased significantly, from 57.0161 million yuan to 342.8209 million yuan, an increase of 70.79% at the end of 2023. The total liabilities also increased year by year, from 127.7702 million yuan in 2019 to 249.8887 million yuan in 2023, an increase of 14.96% at the end of 2023.

#### 1.3.3 Financial Situation

The company's gross profit margin has increased year by year according to the table 3, and the net profit margin has fluctuated, indicating that profitability has been enhanced but cost control needs to be optimized. In terms of operation, the accounts receivable and inventory turnover rates increased slightly, but there is still room for improvement, and it is necessary to strengthen capital recovery and inventory management. In terms of debt servicing, the current ratio and quick ratio have decreased, and short-term debt service pressure has increased, and the financial position needs to be improved. In terms of growth capacity, the growth rate of revenue and net profit fluctuated and increased, and

market expansion and profitability improved, but it needed to respond flexibly to market changes. In summary, the company's profitability, operation and growth ability are performing well, and its solvency needs to be strengthened.

Table 3: Financial indicators of Jie'an Hi-Tech from 2019 to 2023

	project	2019	2020	2021	2022	2023
Profitability (%)	Gross margin	53.92	53.91	52.82	53.13	51.83
	Net profit margin	25.63	23.64	13.24	14.92	14.24
Operational capacity (times).	Accounts receivable turnover ratio	2.27	1.64	1.31	1.36	1.75
	Inventory turnover	3.35	2.29	1.50	1.24	1.23
Solvency	liquidity ratio	3.40	5.85	4.94	4.10	2.92
	Quick ratio	3.01	5.22	4.23	3.37	2.27
Ability to grow (%)	Growth rate of operating income	16.99	-9.25	-6.23	12.35	18.16
	Net profit growth rate	10.38	-15.81	-47.32	25.33	12.44

## 2. Overview and program analysis of tax planning cases of Jie'an Hi-Tech

### 2.1 The types of taxes and tax incentives paid by Jie'an Hi-Tech

#### 2.1.1 Jie'an Hi-Tech pays taxes

As a high-tech enterprise, Jie'an Hi-Tech mainly involves value-added tax, enterprise income tax, urban maintenance and construction tax and its surcharge (education surcharge, local education surcharge), real estate tax and stamp duty as table 4. VAT is levied at four tax rates of 13%, 9%, 6% and 5%, based on sales revenue; The urban maintenance and construction tax, education surcharge and local education surcharge are levied at the tax rates of 7%, 3% and 2% respectively, based on the turnover tax; The corporate income tax rate is 15% or 20%, based on the taxable income. Value-added tax (VAT) and corporate income tax (CIT) have the greatest impact on the total tax amount of Jie'an Hi-Tech, so they were selected as the target taxes for the design of the tax planning plan.

Table 4: Breakdown of taxes payable from 2019 to 2023 in Jie'an Hi-Tech Unit: 10,000 yuan

project	2019	2020	2021	2022	2023
Urban Maintenance Construction Tax	59.21	36.22	69.69	40.69	68.39
Educational fee surcharge	25.38	15.52	29.96	17.44	29.31
Local Education Add-on	16.92	10.35	19.91	11.63	19.54
Land use tax	3.61	3.61	3.61	3.61	3.61
stamp duty	1.11	0.00	5.47	5.71	10.69
Property tax	2.32	1.81	1.46	1.72	22.99
Personal income tax	87.27	92.43	129.11	170.45	200.60
Taxes and surcharges	306.55	205.65	273.75	240.54	315.78
vat	840.98	516.92	1,021.46	714.82	1,073.41
Corporate income tax	681.16	593.08	661.80	494.53	554.60

### 2.1.2 Preferential tax treatment for Jie'an Hi-Tech

As a high-tech enterprise, Jie'an Hi-Tech enjoys many preferential tax policies. In terms of enterprise income tax, the tax rate is as low as 15%, R&D expenses can be deducted, fixed assets are depreciated, the loss compensation period can be up to 10 years, and the income from technology transfer is exempted within 5 million yuan, and the excess part is halved to levy enterprise income tax. In terms of VAT, software products will be refunded immediately, and income from technology transfer, development and related consulting services will be exempted from VAT. In addition, the company also receives policy subsidies from the state in terms of social welfare and investment security, which constitute comprehensive support for high-tech enterprises.<sup>[1]</sup>

### 2.2 Various types of taxes and tax burdens of listed companies in the past three years

The purpose of tax planning is to reduce the tax cost of the enterprise, and the higher the tax burden rate of the enterprise, the greater the space for tax planning and the greater the benefit of tax planning.<sup>[2]</sup> As can be seen from the table 5, although the tax burden rate of Jie'an Hi-Tech has decreased, it is still as high as 5.57%, which is higher than that in 2022. In the past three years, corporate income tax and value-added tax have accounted for the highest proportion of all taxes according to the table 6, so we mainly analyze the problems and optimize suggestions for these two taxes.

Table 5: Tax burden of Jie'an Hi-Tech Unit: 10,000 yuan

year	vat	Consumption tax, etc	Corporate income tax	Total tax amount	Operating income	Corporate tax burden
2021	1,899.18	273.75	933.37	1,942.48	26,816.74	7.24%
2022	1,302.42	240.54	621.94	1,460.61	30,128.76	4.85%
2023	2,082.13	315.78	691.99	1,983.14	35, 598.75	5.57%

Table 6: Jie'an Hi-Tech Tax and Additional Details Unit: 10,000 yuan

year	2021	2022	2023
Urban Maintenance Construction Tax	132.81	133.40	145.75
Educational fee surcharge	56.92	39.07	62.46
Property tax	6.96	6.69	31.97
Land use tax	14.44	14.44	14.44
Vehicle and vessel use tax	0.85	0.28	0.18
stamp duty	23.73	20.61	19.33
Local education fee surcharge	38.04	26.05	41.64

### 2.3 Jie'an Hi-Tech tax planning plan

As a high-tech enterprise, Jie'an Hi-Tech effectively implements national policies, especially in value-added tax and enterprise income tax planning. VAT planning mainly relies on preferential policies such as instant refund of software products and tax exemption of technology transfer income,

but the calculation of tax amount and preferential application in procurement and sales need to be optimized. The corporate income tax planning has achieved results through strategies such as low tax rates for high-tech enterprises and small and low-profit enterprises, as well as additional deductions for R&D expenses and wages for disabled employees, but there is still room for improvement in the depreciation of fixed assets, the use of tax incentives for subsidiaries and the selection of sources of R&D expenses.

### **3. There are problems in the tax planning of Jie'an Hi-Tech**

#### **3.1 There are problems in the tax payment process**

##### **3.1.1 Tax planning in the procurement process**

In the procurement process for the planning of input tax, as a high-tech enterprise, Jie'an Hi-Tech mainly purchases computer software equipment and special training systems required for its main business rail transit, general aviation, etc. In view of the high-end characteristics of this product, Jie'an Hi-Tech focuses on selecting suppliers and prefers long-term cooperation to control costs and improve efficiency. However, from the perspective of tax planning, the single supplier strategy limits the diversity of input VAT credits. At the same time, the financial department has negligence in the management of input tax bills and insufficient understanding of legal deductions, which affects the effectiveness of tax planning.<sup>[3]</sup>

##### **3.1.2 Tax planning issues in the sales process**

Jie'an Hi-Tech often offers sales discounts to promote the delivery of high-tech products, but the output VAT is payable based on the pre-discount price, which increases the tax burden. In terms of mixed sales and concurrent operation, Jie'an Hi-Tech included transportation costs in the cost of product sales, and did not calculate separately to take advantage of different tax rates. The sales of products are subject to a tax rate of 13%, while the lower tax rate of 9% is applied to transportation services, i.e., they are treated on a concurrent basis. In addition, the direct payment method is used for sales, which does not make full use of the time value of money for tax planning, and misses out the benefits of tax deferral.

##### **3.1.3 The application of the policy of immediate collection and refund**

Jie'an Hi-Tech actively uses the tax refund policy to enjoy tax incentives, and the tax burden of self-developed or transformed software products can be refunded if the tax burden exceeds 3% according to the regulations. In 2020-2022, the tax refund has been successfully applied. However, the decision on the source of software R&D mainly relies on the judgment of the top management, and the immediate withdrawal requires that the product must be produced or transformed by itself. Therefore, Jie'an Hi-Tech needs to optimize its tax planning strategy through more refined decision-making analysis.

##### **3.1.4 The choice of depreciation method for fixed assets**

The depreciation method of fixed assets affects the amount of expenses included in each period of the enterprise. In the past three years, Jie'an Hi-Tech has adopted the average method of depreciation, but the state encourages high-tech enterprises to adopt the accelerated depreciation method to enjoy more tax exemptions and consider the time value of money in the initial stage. Therefore, the average method may not meet the development needs of Jie'an Hi-Tech, and there is room for optimization.

### **3.1.5 Tax pass-through issues of subsidiaries**

Jie'an Hi-Tech has seven subsidiaries, and the tax burden affects the overall profit. Some subsidiaries have been certified as high-tech enterprises to enjoy preferential tax rates, while non-certified subsidiaries have higher tax burdens. Jie'an Hi-Tech can invest in the transformation and upgrading of these subsidiaries to reduce tax burden and improve overall profitability.

### **3.1.6 The additional deduction of R&D expenses is underutilized**

In recent years, the R&D investment has increased year by year, and the R&D expense deduction policy has been actively used to reduce the corporate income tax burden. However, according to the relevant policies, the expenses incurred in entrusting external R&D or purchased products can only be included in the R&D expenses at 80% of the actual amount incurred, and the entrusted overseas R&D expenses can only be deducted within two-thirds of the domestic R&D expenses.<sup>[4]</sup> Some of the products of Jie'an Hi-Tech are developed by entrusting external or direct outsourcing, which saves internal productivity, but restricts the full enjoyment of additional deduction discounts.

## **3.2 There are problems in tax-related management**

More than 52% of the shareholders in the management of Jie'an Hi-Tech have a scientific and technological background and attach importance to technological innovation, but the proportion of financial personnel is low, and tax planning is often regarded as a year-end task. In fact, tax planning should be integrated into the whole process of business operation. In the past three years, the company has not specifically engaged tax authorities or professional institutions to conduct tax planning, reflecting the lack of attention paid by the management to this. At the same time, a large amount of funds are invested in R&D, and financial personnel are busy with basic accounting work, lacking in-depth research on tax planning, which not only limits the depth of planning, but also may cause a waste of funds. In addition, Jie'an Hi-Tech lacks a real-time internal audit and supervision mechanism, and the supervision during and after the event is insufficient, which increases the financial risk.

## **4. Fourth, the optimization of tax planning of Jie'an Hi-Tech**

### **4.1 VAT Improvement Program**

#### **4.1.1 Reasonable use of the policy of immediate collection and refund**

The policy is designed to incentivize the production and sales of enterprise software products. As a high-tech enterprise, Jie'an Hi-Tech accounts for a large proportion of annual sales of software products, but in 2023, its software product sales will be 355.9875 million yuan, and the income from immediate refund will be 10.1483 million yuan. Some software products choose to outsource R&D and cannot enjoy the VAT refund policy. It is recommended to hire experts for in-house R&D to meet the conditions for self-R&D and enjoy tax incentives.

#### **4.1.2 Choice of Supplier**

As a high-tech enterprise, Jie'an Hi-Tech has strict product quality control, especially in raw material procurement. When selecting suppliers, Jie'an Hi-Tech relies on two major standards: first, the quality of raw materials must meet the standards, which are strictly inspected by the special material audit department; The second is to consider the material price and the expected profit, make decisions by comparing the after-tax profit, and evaluate the opportunity for VAT input tax deduction



provided by the supplier to reduce the tax burden and achieve the optimal choice.

#### **4.1.3 Choice of sales method**

Jie'an Hi-Tech often uses discount strategies to increase sales, including sales discounts (cash discounts) and discounted sales (commercial discounts). A sales discount is a payment offer provided after a transaction, and VAT is taxed on the amount before the discount; If the sales amount and the discount amount are indicated on the same invoice, the tax will be calculated according to the discounted amount, otherwise the tax will still be calculated before the discount, which requires additional manpower to negotiate. Therefore, Jie'an Hi-Tech needs to weigh labor costs and tax planning savings.

#### **4.1.4 Mixed sales and concurrent planning**

Mixed sales refers to the provision of directly related services when an enterprise sells goods, and the services are based on the sales of goods, and the tax rate is based on the sales of goods. Concurrent activities involve the sale of goods and services that are not directly related, and each of them is subject to different tax rates. Jie'an Hi-Tech mainly sells urban rail transit products and provides transportation services, which originally adopted a mixed sales method and was taxed at a unified rate of 13%, and could not enjoy the low tax rate of transportation services. If the conversion is a concurrent operation, the wholly-owned subsidiary can transport the products and strip the payment for transportation services, and the tax rate of 9% will be applied to reduce the tax burden.

#### **4.1.5 Confirmation of the time of tax liability**

Tax planning is carried out on the confirmation of the time of tax liability, and the method of tax deferral is used to defer the payment of tax by using the time value of money to maximize the value of funds. Jie'an Hi-Tech mostly adopts direct payment method when selling products, but considering the time value of money, the tax burden in the current period can be reduced by adjusting the collection time.<sup>[5]</sup>

### **4.2 Enterprise income tax improvement plan**

#### **4.2.1 R&D expenses are deducted**

In the past three years, the additional deduction ratio of R&D expenses of Jie'an Hi-Tech is far lower than the upper limit of national policy preferences. Facing two major challenges: one is the choice between independent research and development and purchased products, although outsourcing improves efficiency but affects the additional deduction, which needs to be selected through cost-benefit analysis; Second, the financial personnel have an inaccurate understanding of the scope of R&D expenses, such as travel expenses are misclassified as management expenses, which affects the use of tax incentives. Jie'an Hi-Tech should strengthen the awareness of financial personnel to ensure that expenses are accurately recorded to effectively reduce the tax burden.

#### **4.2.2 Establish subsidiaries that meet the requirements of technology-based small and medium-sized enterprises**

Among the wholly-owned subsidiaries of Jie'an Hi-Tech, Zhengzhou Tongxiao and Zhengzhou Sales are high-tech enterprises and enjoy a preferential tax rate of 15%; Zhengzhou Military Industry and Zhengzhou Jie'an Training School are small and micro enterprises, with a tax rate of 20%. In order to optimize the tax burden, Jie'an Hi-Tech is considering transforming the two subsidiaries into

technology-based SMEs to enjoy more favorable tax policies and promote technological innovation. Small and medium-sized technology-based enterprises need to meet the conditions of being registered in China, having no more than 500 employees, no more than 200 million annual sales and assets, legal products and services, no major accidents and untrustworthy behaviors, a comprehensive score of not less than 60 points, a non-zero score for scientific and technological personnel, and a R&D investment accounting for more than 5%. Zhengzhou Military Industry and Zhengzhou Jie'an Training School have met the first five conditions, but the proportion of R&D investment needs to be increased.

#### 4.2.3 Accelerated depreciation of fixed assets

The total fixed assets of Jie'an Hi-Tech in 2023 will be as high as 147.0624 million yuan, accounting for a large proportion, but it has been depreciating by the simple average method of life, which does not make full use of the time value of money, and does not reach the optimal level of tax planning, so there is room and potential for planning.

#### 4.3 Optimization measures for the basic tax planning of Jie'an Hi-Tech

High-tech enterprises often regard tax planning as a temporary task, and the management of Jie'an Hi-Tech is no exception. In order to raise awareness, Jie'an Hi-Tech should invite tax experts to train and integrate tax planning into daily management. In view of the shortage of manpower and lack of professionals in the financial department, Jie'an Hi-Tech should increase investment, set up an internal learning resource library, train financial personnel, and consider setting up a tax planning department, hiring an external team to train and select the person in charge. When recruiting, we pay attention to tax planning experience to improve the overall quality of the team, effectively use national support policies, and promote the long-term development of the enterprise.<sup>[6]</sup>

### 5. Conclusions

Jie'an Hi-Tech has made remarkable achievements in the field of high-end technology research and development and virtual simulation, and is in good financial condition, but there is still room for improvement in tax planning. In particular, in terms of value-added tax and enterprise income tax, the calculation of tax in procurement and sales, the depreciation of fixed assets, the treatment of tax burden of subsidiaries and the additional deduction of R&D expenses need to be optimized. Through careful planning, Jie'an Hi-Tech can reduce tax costs and improve profitability. Therefore, the company should deepen tax planning, strengthen internal management, and make full use of preferential tax policies to achieve tax cost control and maximize the company's value.

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