



Research on the Impact of Enterprise Income Tax Preferential Policies on Cultural Enterprise Innovation

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Abstract. As a supplier of cultural products and services, cultural enterprises can no longer meet the needs of the market only by relying on the traditional business model, and must realize transformation and upgrading through innovation. However, problems such as large investment, high risk and long cycle in the early stage of R&D innovation restrict the innovation and development of cultural enterprises. In order to encourage enterprise R&D and innovation, the government has introduced a series of tax policies to help enterprises overcome innovation problems. Based on the relevant data of 187 A-share listed cultural enterprises in China from 2014 to 2022, this paper empirically analyzes the impact of preferential corporate income tax policies on the innovation of cultural enterprises. The results show that: Corporate income tax preferential policies promote both R&D investment and innovation output of cultural enterprises, and R&D investment plays a partial intermediary role between corporate income tax preferential policies and innovation output.

Keywords: cultural enterprises, corporate income tax preferential policies, research and development investment, innovation output.

1 Introduction

Culture is the spiritual lifeblood of a country, an important force for the survival and development of a nation, and provides a steady stream of national cohesion and creativity. As a big civilized country with 5,000 years of excellent traditional culture, China has always put the inheritance and development of culture in an important position, and attaches great importance to the development of cultural industry. In the 18th National Congress, the "five-in-one" proposal takes cultural construction as one of the overall layout, emphasizing the need to enhance the overall strength and competitiveness of culture, and promote the all-round prosperity of cultural undertakings and the rapid development of cultural industries. In the report to the 19th National Congress, it was proposed to "promote the creative transformation and innovative development of fine traditional Chinese culture" and stressed the importance of innovation for culture. The 20th Congress also pointed out that we should "take innovation as the core driving force, take major cultural industry projects as the starting point, optimize the industrial

structure layout, expand the cultural consumption of urban and rural residents, and enhance the overall strength and competitiveness of industrial development."

According to the statistics of the National Bureau of Statistics, the added value of China's culture and culture-related industries in 2022 will be about 524 million yuan, a year-on-year increase of 16.6%, accounting for 4.46% of GDP, which has become an important part of the national economy. Although the overall development of China's cultural industry is improving, there are still problems such as outdated growth model, many but not strong cultural enterprises, and low added value of cultural products, which contradict China's spiritual and cultural needs and hinder the development of China's cultural industry. As the micro subject of the cultural industry, cultural enterprises urgently need to update the growth model and improve the added value of products through innovation. However, the problems of high investment, long cycle and high risk in the innovation process inhibit the enthusiasm of cultural enterprises for innovation. In order to stimulate the innovation of cultural enterprises, the state has implemented a series of tax incentives. As far as the preferential policies of enterprise income tax are concerned, there are inclusive policies such as a low tax rate of 15% for high-tech enterprises, additional deduction of R&D expenses, and accelerated depreciation of fixed assets, as well as targeted policies such as "two exemptions and three halves" for software enterprises and animation enterprises, which are committed to reducing the tax burden of the cultural industry and encouraging its innovation and development. However, whether the preferential corporate income tax policy can effectively promote the innovation of the cultural industry and the incentive effect remains to be discussed.

At present, the research on the impact of tax incentives on enterprise innovation mainly focuses on the impact of tax incentives on enterprise R&D investment and innovation output. In terms of R&D investment, the empirical results of Portugal ^[1], the United States ^[2], Colombia ^[3], China ^[4] and other countries as research objects show that preferential tax policies can encourage enterprises to increase R&D investment. However, the results are heterogeneous, and tax incentives will have different effects on enterprise innovation of different nature ^[5], size ^[6] and industry ^[7]. Tax preferential policies encourage cultural enterprises to innovate in two aspects: reducing pressure on enterprises and stimulating their enthusiasm ^[8]. Tax incentives can significantly promote technological innovation of cultural enterprises ^[9]. Goods and service tax incentives have a stronger incentive effect on R&D investment of cultural enterprises than income tax incentives ^[10]. In terms of innovation output, different support policies have different impacts on the structure of enterprise innovation output. Compared with financial subsidies, tax incentives have a greater positive impact on patent achievements ^[11]. Income tax incentives can promote enterprise innovation output, and R&D capital input is a complete intermediary factor for tax incentives to promote enterprise innovation ^[12]. Preferential tax policies can significantly stimulate the investment of R&D expenses of digital culture enterprises and promote the output of non-patented intellectual property rights, but they are not significant in patent application ^[13].

Although many scholars have studied the effect of preferential tax policies on enterprise innovation, there are few literatures on cultural enterprises as research objects. Innovation is the core competitiveness of cultural enterprises and the driving force to

improve the quality and efficiency of cultural enterprises, and corporate income tax policy directly affects the business decision of enterprises. Therefore, it is of great significance to study the influence of corporate income tax preferential policy on the innovation of cultural enterprises.

2 Theoretical Analysis and Research Hypothesis

Enterprise innovation is often accompanied by high innovation cost, and as a "rational broker", enterprises will only implement innovation activities when the innovation income is greater than the innovation cost, so high innovation cost is a major factor restricting enterprise innovation. For enterprises, tax increases the cost of their production and operation, which is an additional cost. In the process of producing new products or services through innovation and making profits through sales, although the innovation link does not involve tax, the income from the innovation terminal should be taxed, and this part of tax should also be included in the cost of enterprise innovation. From this perspective, enterprise innovation costs can be divided into tax innovation costs and non-tax innovation costs. What corporate income tax incentives can reduce is the cost of tax innovation. No matter what kind of policies the enterprises enjoy the preferential policies of enterprise income tax, the final result will lead to the reduction of enterprise income tax, that is, the reduction of taxes on innovation income, and thus the reduction of innovation costs.

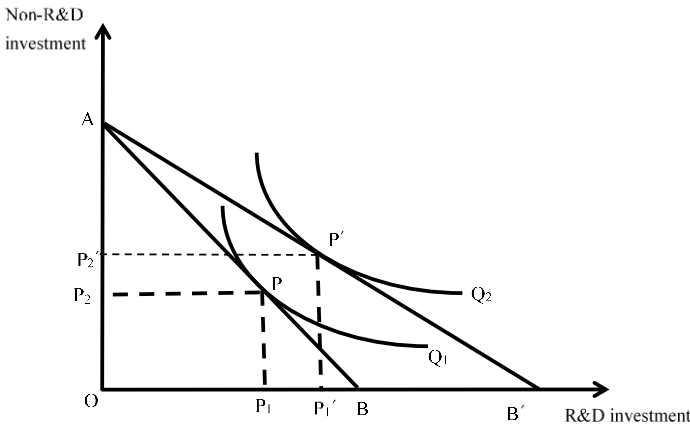


Fig. 1. Mechanism of tax incentives to increase R&D investment

As shown in Fig.1, an enterprise uses available funds for innovative activities and non-innovative activities, AB is the initial capital budget line that does not enjoy the preferential corporate income tax policy, Q_1 is the equal line, and the intersection point P between AB and Q_1 indicates that when the R&D investment is P_1 and the non-R&D investment is P_2 , the enterprise output is the maximum, that is, P is the optimal capital allocation point. When an enterprise enjoys preferential corporate income tax policy, its innovation cost decreases, the capital budget line moves to the right to AB' , AC

intersected with the isoline Q_2 at P' point, and the optimal combination of capital input becomes P_1' for innovation input and P_2' for non-innovation input. It can be seen that tax incentives lead to a decrease in innovation costs, and further lead to an increase in R&D investment. Based on this, this paper proposes hypothesis 1.

H1: Corporate income tax incentives have an incentive effect on R&D investment of cultural enterprises.

Due to the characteristics of large investment in the early stage of innovation, long cycle and uncontrollable results, enterprises are faced with greater risks in the process of innovation. On the one hand, enterprises occupy large-scale funds for innovation for a long time, which is likely to lead to capital turnover difficulties or even capital chain fractures, bringing capital risks. On the other hand, there is great uncertainty in the innovation process, and enterprises are likely to invest a lot of resources, but ultimately nothing, and the risk of innovation failure is large. Corporate income tax preferential policies can help enterprises diversify risks to a certain extent. As can be seen from the above, preferential tax policies can reduce the innovation cost of enterprises, save part of the funds for tax payment, and deal with capital risks. In addition, due to the confidentiality of innovation, enterprises generally do not disclose relevant information, so investors have little understanding of the innovation situation of the invested enterprises, resulting in the innovation advantage of enterprises can not help financing. Enterprises enjoying preferential policies can produce signal transmission effect, release positive signals and positive feedback to the outside world, attract investors to invest, and alleviate cash flow pressure. If enterprises obtain financing, they will have the capital to increase innovation investment, and they can ensure the smooth realization of innovation achievements and reduce the risk of innovation failure by introducing high-quality talents and purchasing high-tech equipment. Therefore, hypothesis 2 and 3 is proposed.

H2: Corporate income tax incentives have an incentive effect on the innovation output of cultural enterprises.

H3: R&D investment plays an intermediary role in the incentive of income tax incentives for cultural enterprises' innovation output.

3 Research Design

3.1 Sample Selection

In this paper, according to the classification standards in the Classification of Culture and Related Industries (2018) issued by the National Bureau of Statistics, combined with the Classification of National Economy Industries (GB/T4754-2017), 213 cultural listed enterprises are selected. Considering the authenticity, integrity and quantification of the data, sample selection was conducted according to the following principles: (1) ST, ST*, PT listed cultural enterprises were excluded; (2) Eliminate enterprises with serious data deficiency; (3) Excluding the years in which the return on equity (roe) is negative. Finally, 973 unbalanced panel data of 187 A-share listed cultural enterprises from 2014 to 2022 were selected as samples. The original data in this paper are from the National Tai'an database (CSMAR) and Wind database, and a small amount of data

is manually calculated from the original data. In addition, to control the influence of extreme values, all variables were Winsorize by 1%.

3.2 Variable Definition

Explained Variables

Innovation output effect (Effect). As for the effect of innovation output, scholars use more patent-related indicators such as the number of patent applications and the number of patent grants. However, considering that cultural enterprises are asset-light enterprises and patents cannot reflect cultural connotations, this paper draws on the practices of Yunjie Zhu. The ratio between the increase of intangible assets and operating income after excluding land use rights is chosen as the measurement index of innovation output effect, which is more in line with the characteristics of cultural enterprises' innovation achievements^[14].

Explanatory Variable

Enterprise income tax incentive(Incentive). As for the measurement of enterprise income tax incentives, the formula commonly used in academic circles is that the preferential tax rate of enterprise income tax is the difference between the nominal interest rate and the effective tax rate, where the effective tax rate is the corporate income tax expense divided by the total profit, but the effect of deferred income tax is not considered in this formula. This paper uses Hongguo Yan and Cuiying Pan for reference. The sum of the reduction of deferred income tax assets and the increase of deferred income tax liabilities in the cash flow statement (indirect method) is used to represent the profit-related deferred income tax expense, and the income tax payable in the current period is represented by excluding the profit-related deferred income tax expense from the income tax expense^[15]. Finally, the enterprise income tax incentive formula in Table 1 is obtained.

Intermediary Variables

Research and development investment (RD). For R&D investment, most scholars use R&D expenditure intensity to measure, while a small number of scholars use R&D personnel ratio to measure. Considering that the former uses financial data and is more available, the R&D expenditure intensity is used as a measure of innovation investment.

Control Variables

Based on previous studies, this paper selected enterprise size (Size), asset-liability ratio (Lev), return on equity (Roe), operating income growth rate (Growth), cash recovery rate (Cash), Tobin's Q value (TobinQ), age of establishment(Age) and nature of property rights(Nature) as control variables. Specific variable definitions are shown in Table 1.

Table 1. Definition and description of variables

type	name	Sym-bols	Definitions
Explained variable	innovation output effect(%)	Effect	(increase in intangible assets-increase in land use rights) / operating revenues
Explanatory variable	Enterprise income tax incentive	Incentive	(operating revenues×25%-income tax payable) / operating revenues
Intermediary variable	R&D investment (%)	RD	R&D investments / operating revenues
Control variables	Enterprise scale	Size	ln(total assets)
	Asset-liability ratio	Lev	total liabilities / total assets
	Return on equity	Roe	net profits / net assets
	Revenue growth rate	Growth	(operating revenues for the year-last year's operating revenues) / operating revenues for the year
	Cash recovery rate	Cash	net cash flow from operating activities / total assets
	Tobin's Q value	TobinQ	corporate value / total assets
	Age of establishment	Age	current year- establishment year
	Nature of property rights	Nature	state-owned enterprises=1, non-state-owned enterprises=0

3.3 Model Design

In order to verify the impact of enterprise income tax incentives on enterprise innovation input and output, this paper constructs the following model:

$$Effect_{it} = \alpha_0 + \alpha_1 Incentive_{it} + \alpha_2 Controls_{it} + \mu_{it} + \tau_{it} + \varepsilon_{it} \quad (1)$$

$$RD_{it} = \beta_0 + \beta_1 Incentive_{it} + \beta_2 Controls_{it} + \mu_{it} + \tau_{it} + \varepsilon_{it} \quad (2)$$

$$Effect_{it} = \gamma_0 + \gamma_1 Incentive_{it} + \gamma_2 RD_{it} + \gamma_3 Controls_{it} + \mu_{it} + \tau_{it} + \varepsilon_{it} \quad (3)$$

Where the explained variable $Effect_{it}$ is innovation output effect, the core explanatory variable $Incentive_{it}$ is enterprise income tax incentive, the intermediary variable RD_{it} is R&D investment, $Controls_{it}$ is a series of control variables, subscripts i, t represents the company i and year t , respectively, α_0, β_0 and γ_0 are intercept terms, α_i, β_i and γ_i are corresponding variable coefficients, μ_{it} is the fixed effect of enterprises, τ_{it} is the fixed effect of time, and ε_{it} is the random interference term Formula (1) is the impact model of enterprise income tax innovation on enterprise innovation output, formula (2) is the impact model of enterprise income tax incentive on enterprise R&D input, and formula (3) is used to test the mediating role of R&D input between enterprise income tax incentive and innovation output.

4 Empirical Test

4.1 Baseline Regression Analysis

Baseline Regression Results

According to the results in Table 2, it can be seen that in Model (1), the innovation output effect (Effect) of enterprise is significantly positive at the 5% level, indicating that the greater the incentive intensity of corporate income tax, the higher the level of innovation output effect of enterprises. Hypothesis 2 is valid; In Model (2), there is a positive correlation between corporate income tax incentives (Incentives) and corporate R&D investment (RD), with a significance level of 1%, indicating that corporate income tax incentives can motivate companies to increase their R&D investment. Hypothesis 1 is valid; According to model (3), it can be found that when both corporate income tax incentives (Incentive) and R&D investment (RD) are used as explanatory variables, R&D investment (RD) and innovation output effect (Effect) are significant at the 1% level, and because Incentive and R&D investment are also significant, the mediating effect is significant. The income tax incentives and innovation output effect are significant at the 5% level, indicating that R&D investment plays a partial mediating role between corporate income tax preferential policies and innovation output. Corporate income tax preferential policies can promote corporate innovation output by increasing R&D investment, and hypothesis 3 is valid. By observing the coefficients, we can see that the total effect of the preferential income tax policies for cultural enterprises on the innovation effect of enterprises is 2.676, in which the direct effect is 2.311 and the indirect effect is 0.364 ($=0.201 \times 1.811$). The indirect effect is realized by increasing R&D investment, so it is the intermediary effect of R&D investment, accounting for 13.63% of the total effect ($=0.364/2.676$).

Table 2. Benchmark regression results

	(1)Effect	(2)RD	(3)Effect
RD			0.201*** (3.518)
Incentive	2.676** (2.488)	1.811*** (2.693)	2.311** (2.155)
Controls	Yes	Yes	Yes
Year	Yes	Yes	Yes
Firm	Yes	Yes	Yes
N	973	973	973
R ²	0.0943	0.1330	0.1086

Note: ***, **, * are significant at 1%, 5%, and 10% levels respectively.

4.2 Robustness Analysis

Shorten the Time Span

Due to the impact of the COVID-19 outbreak on the operation, R&D and innovation of cultural enterprises from 2020, this paper shortened the time span to six years from 2014 to 2019, and conducted a robustness test. The results in Table 3 show that the significance level of enterprise income tax incentive (Incentive) on innovation output effect (Effect) changes from 5% to 1%, and the positive significance level of R&D investment (RD) is still at 1%, which is consistent with the benchmark regression results. From the perspective of correlation coefficient, compared with the baseline regression result, the coefficient of explanatory variables on the explained variables increased after excluding the influence of the epidemic. In the intermediate effect, R&D investment (RD) still has a significant effect on innovation output effect (Effect) at 1% level. It shows that under normal economic environment, corporate income tax preferential policies can encourage cultural enterprises to increase R&D investment and improve innovation output, and R&D investment plays an intermediary role in stimulating innovation output. Therefore, the baseline regression results are robust.

Endogeneity Analysis

In order to alleviate the endogeneity problem caused by missing variables, this paper adds two control variables, total asset turnover (Atr) and the share of the largest shareholder (Top1), on the basis of basic regression. Table 3 show that corporate income tax incentive (Incentive) has a significant effect on innovation output effect (Effect) and R&D investment (RD) of cultural enterprises at the level of 5%, and in the intermediary effect, R&D investment (RD) and innovation output effect (Effect) are significant at the level of 1%, which is consistent with the benchmark regression results. Once again, the results of this study are robust.

Table 3. Robustness analysis results

	Shorten the time span			Endogeneity analysis		
	(1)Effect	(2)RD	(3)Effect	(1)Effect	(2)RD	(3)Effect
RD			0.269*** (3.065)			0.175*** (3.034)
Incentive	4.337*** (2.724)	2.513*** (2.956)	3.660** (2.298)	2.193** (2.029)	1.439** (2.137)	1.941* (1.800)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Firm	Yes	Yes	Yes	Yes	Yes	Yes
N	619	619	619	970	970	970
R2	0.1068	0.1002	0.1253	0.1090	0.1543	0.1196

Note: ***, **, * are significant at 1%, 5%, and 10% levels respectively.

5 Conclusions

This paper selected 973 sample data of 187 A-share listed cultural enterprises from 2014 to 2022, conducted an empirical analysis of the relationship between corporate income tax preferential policies and the effect of cultural enterprises' R&D investment and innovation output, and reached the following conclusions: The preferential policy of enterprise income tax has a positive incentive effect on both R&D investment and innovation output of cultural enterprises, and R&D investment plays a partial intermediary role in the enterprise income tax incentive and innovation output of cultural enterprises.

Based on the above conclusions, the following policy recommendations are put forward:

(1) Introduce more targeted preferential policies for corporate income tax. At present, most of the preferential corporate income tax policies enjoyed by cultural enterprises are inclusive policies, while for the cultural industry, there are very few preferential income tax policies according to the characteristics of cultural enterprises, among which the targeted preferential policies are a few industries in the cultural industry such as animation industry and film industry. To some extent, this has hindered the preferential policy of enterprise income tax to encourage the innovation of cultural enterprises. Therefore, in order to better play the goal of preferential tax policies and mobilize the innovation enthusiasm of cultural enterprises, the government should formulate more targeted preferential tax policies, combine the development characteristics of cultural enterprises, and formulate preferential tax policies for cultural enterprises on the basis of ensuring fiscal revenue.

(2) Strengthen supervision and guide to improve the conversion rate of results. The state has introduced policies to support enterprise innovation with the direct purpose of increasing the output of innovation. However, the empirical part of this paper proves that the significance level of enterprise income tax preference in encouraging R&D investment is higher than that of innovation output in our country. In other words, the level of innovation output of cultural enterprises is not ideal after investing R&D funds. Therefore, in order to give better play to the incentive role of corporate income tax on the innovation of cultural enterprises, the government should strengthen supervision and guidance. On the one hand, strengthen the supervision of the process of enjoying the preferential policies of enterprise income tax, prevent the enterprise income tax incentives used for innovation from being misappropriated and abused, ensure the incentive effect of relevant policy incentives on enterprise R&D and innovation, and then improve the level of innovation output. On the other hand, expand the scope of identification of innovation output effect, as far as possible to include enterprise activities that belong to the industry encouraged by the state and involve R&D and innovation, create a fair and just innovation environment, and guide enterprises to pay attention to the transformation of innovation achievements.

Reference

1. Walter, C.E., Au-Yong-Oliveira, M., Ferasso, M., et al. (2022) The Use of Internal Resources for the Creation of Innovation: An Empirical Analysis of Portuguese Companies Benefiting from Tax Incentives for Research and Development. *International Journal of Innovation and Technology Management*, 20(03). 10.1142/S0219877023500177.
2. Chang, A.C. (2018) Tax policy endogeneity: evidence from R&D tax credits. *Economics of Innovation and New Technology*, 27(8): 809-833. 10.1080/10438599.2017.1415001.
3. Pelaez, S., Hurtado, B., Avila-Maecha, J. (2024) Taxation and innovation: evidence from Colombia. *Economics of Innovation and New Technology*, 33(01): 166-184. 0. 1080/10438599. 2022.2145560.
4. Song, J., Bao, C. (2023) Can Preferential Tax Policies Stimulate Innovation of Chinese Enterprises?—Based on the Perspective of Innovation Chain. *Journal of Nanjing Audit University*, 20 (01): 60-67. <https://link.cnki.net/urlid/32.1867.F.20230206.1134.001>.
5. Radas, S., Anit, I.D., Tafro, A., et al. (2015) The effects of public support schemes on small and medium enterprises. *Technovation*, 38:15-30. 10.1016/j.technovation.2014.08.002.
6. Wei, S.Y., Xiao, P. (2021) Empirical analysis of tax incentives and R&D investment of Enterprises Based on A-share listed companies in Shanghai and Shenzhen. *Tax Research*, (05): 40-46. 10.19376/j.cnki.cn11-1011/f.2021.05.007.
7. Xu, J.B., Peng, R.J. (2022) Research on Incentive Effect of Enterprise income tax preferential Policy on R&D investment of digital economy enterprises. *Tax Research*, (07): 70-75. 10.19376/j.cnki.cn11-1011/f.2022.07.001.
8. Chen, G., F, C.W. (2016) Cultural industry fiscal policy construction: Foreign experience in China's countermeasures. *Theory and Reform*, (01):169-174. 10. 13553/ j. cnki. llygg. 2016. 01. 033.
9. Hou, S.F. (2022) Tax incentives, innovation subsidies and technological innovation of cultural Enterprises. *Journal of Shenzhen University (Humanities and Social Sciences Edition)*, 39(05):51-62. <https://mall.cnki.net/eread/mall/maga/SZDS202205.html>.
10. Tang, Y.Q. (2022) Research on the impact of tax incentives on R&D investment of Digital Creative Industry in China. *Dongbei University of Finance and Economics*. 10. 27006/d.cnki.gdbcu.2022.000233.
11. Chen, Y.Y., He, M.J., Zhang, X.Y. (2018) Fiscal subsidies, tax incentives and enterprise innovation output structure: evidence from Chinese high-tech listed companies. *Tax Research*, (12):48-54. 10.19376/j.cnki.cn11-1011/f.2018.12.008.
12. Lu, Z.Y., Du, Y.T. (2023) Research on the impact of tax incentives on innovation effect of new energy enterprises: A case study of Shanghai and Shenzhen A-share new energy listed enterprises. *Journal of Economics*, 1-22. 10.16513/j.cnki.cje.20230221.002.
13. Xia, C.W. (2020) Research on the impact of government subsidies and tax incentives on technological innovation input and output of digital culture listed companies. *Anhui University*, 2020. 10.26917/d.cnki.ganhu.2020.000098.
14. Zhu, Y.J., Cao, S.Y., Meng, X.F. (2019) Research on the impact of government subsidies on the innovation effect of listed cultural and creative enterprises in China. *Journal of Tongji University (Social Science Edition)*, 32(05):47-54. <https://wqxuebao.tongji.edu.cn/CN/article/searchArticle.do>.
15. Yan, H.G., Pan, C.Y. (2022) Tax incentives, innovation factor input and total factor productivity of firms. *Economics and Management Review*, 38(02):85-97. 10.13962/j.cnki.37-1486/f.2022.02.007.

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