

Can the pilot city policy of cultural consumption stimulate cultural consumption

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Abstract: In 2016, China officially implemented the pilot city policy of cultural consumption. However, whether this policy can effectively stimulate the cultural consumption of urban residents is still a proposition to be proved. Taking the data of 14 prefecture level cities from 2008 to 2018 as samples and using the synthetic control method as a tool, this paper tests the impact of the cultural consumption pilot city policy implemented in 2016 on the growth of cultural consumption in Huizhou. At the same time, the placebo test method is used to analyze the effectiveness and robustness of the above results, and the composition degree of several key variables affecting cultural consumption. The study found that the implementation of the cultural consumption pilot city policy has effectively promoted the cultural consumption level of Huizhou urban residents, in which the per capita disposable income and urbanization factors have always been the main driving force for residents to carry out cultural consumption, and the proportion of potential high-quality consumers and the quality of cultural products are also important factors to promote residents' cultural consumption. On this basis, combined with the existing literature and data statistics, this paper puts forward some suggestions for effectively stimulating cultural consumption.

1. Introduction

The improvement of cultural consumption is an important embodiment of the common improvement of people's living standards and spiritual standards. In 2016, the Ministry of culture and the Ministry of Finance officially issued the notice on carrying out the ten point work of guiding urban and rural residents to expand cultural consumption, and published the first phase of the list of national pilot cities for cultural consumption (the first time) in July of that year, aiming to mobilize the strength of the public to stimulate, develop and improve the level of military and civilian cultural consumption. In 2019, the per capita consumption expenditure of national residents was 28063.4 yuan, of which the per capita expenditure on education, culture and entertainment was 1290.92 yuan, an increase of 6.7% compared with the previous year, accounting for 4.6% of the per capita consumption expenditure, showing an obvious growth trend. However, China's total cultural consumption has always been low. In 2016, the proportion of per capita education, culture and entertainment consumption in per capita disposable income was the highest, which was still less than 0.079^[1], and the increase of cultural consumption was significantly out of proportion to the growth of per capita disposable income. Based on this, whether the cultural policy is effective and whether the cultural consumption is really driven are the propositions to be proved. This paper aims to explore whether the issuance and implementation of the policy of the pilot city of cultural consumption can really drive the growth of cultural consumption in non first tier cities, promote the upgrading of residents' cultural consumption structure, and accelerate the recovery and development of cultural industry.

2. Literature review

In the past two years, scholars have mainly started from the rural level on how to stimulate cultural consumption. Taking the "three rural" issues pointed out in the report of the 19th National Congress

of 2017 as the background, Xu Wang (2020) and Liang Jun (2009) found that the current low level of cultural consumption, structural defects and backward ideas of rural residents hinder the development of cultural consumption of rural residents^[2]. Based on the "three rural" issues, Wang Qiyan and Cao Qian (2020) analyzed with GETIS ord GI * index and panel data model, and believed that income level, urbanization level and supply level had a significant positive impact on cultural consumption, and there were great differences in provincial culture.

Due to the different definitions of cultural consumption at home and abroad, many foreign scholars do not directly analyze cultural consumption, but analyze the role of cultural consumption through the development driving mechanism of education, tourism, entertainment and other industries. In terms of market integration, Rong he, Heqing Li, Zeng Lian, Jie zhengd (2020) said that cultivating stronger personal awareness plays a significant role in boosting consumption. In terms of education consumption^[3], Tanzi (1995) believes that education consumption helps to improve consumers' language reading ability at the micro level. Herbertsson and Orszag (2003) believe that when education consumption is a consumption type, it can directly promote economic growth^[4].

We found that many scholars mainly focus on cause analysis when exploring China's cultural consumption mechanism, and have an obvious tendency of rural analysis, but rarely involved in the effectiveness of relevant pull methods. Based on the research results of other scholars, taking urban residents as the research object, taking the data of 14 different provinces as the main variables and Huizhou as the target city, this paper explores whether the policy solutions based on the above problems can effectively stimulate regional cultural consumption, and judge the forward path of cultural consumption from the macro perspective of policy.

3. Relevant mechanisms of Cultural Policy Stimulating cultural consumption

The mismatch between supply and demand of cultural products and services, including the loss of high-end cultural and creative talents, has become the core contradiction to effectively stimulate residents' cultural consumption. Keynesian demand theory says that low marginal consumption propensity will lead to insufficient consumption demand, and the weakening of consumption demand will lead to the decline of investment demand and the shortage of total social demand. Due to the chain reaction between demand and employment, the employment rate will also decline sharply, and even produce an economic crisis. Therefore, maintaining the marginal utility consumption tendency of consumers for cultural products is of great significance to effectively stimulate the demand for cultural consumption. Among them, people's desire to consume is affected by the long-term income level in a certain period of time. Generally speaking, individuals with unstable income and low income level have low marginal tendency. Compared with urban residents and rural residents, cities and towns have obvious advantages in the issue of income stability. Therefore, this paper selects urban residents as the main research object for analysis^[5].

It is not difficult to find that marginal propensity to consume plays a very significant role in stimulating consumption, while marginal propensity to consume actually refers to people's "consumption will" for a product, and the role of the government in regulating the allocation of resources also appears here. At the same time when the government policies are issued, the human, material, financial and other social resources of relevant cultural industries and cultural consumption will flow immediately. Governments at all levels will respond to the relevant policies issued by the Ministry of culture and strengthen residents' awareness of culture and cultural consumption according to local conditions according to different cultural development and cultural characteristics of different prefecture level cities Stimulate the enthusiasm of local residents for cultural consumption. Therefore, it can be said that the implementation of the policy can theoretically stimulate residents' cultural consumption by creating residents' cultural consumption atmosphere and changing residents' cultural consumption concept.

4. Construction of model and selection of variables

At present, propensity score matching method, double difference method and synthetic control

method are the main methods used for policy evaluation. Combined with the "objectivity" advantage of synthetic control method, this paper will take synthetic control method (SCM) as the main test method. The synthetic control method, model setting and variable selection will be described below.

4.1 Synthetic control method

At present, synthetic control method (SCM) is widely used by many scholars in policy evaluation research such as real estate tax pilot and capacity expansion policy pilot^[6]. This method has the significant advantage of objectivity. This paper will conduct empirical research with the following operations: ① select the appropriate control group and determine the reasonable prediction variables combined with the conclusions of the existing literature and the economic relationship; ② Fit a suitable hypothetical synthetic group; ③ The differences between the synthetic group and the treatment group were compared to evaluate the impact of the implementation of the policy in the pilot cities of cultural consumption. Based on this, according to the basic principle and operation steps of SCM, this paper will elaborate the application of synthetic control method in evaluating the policy of pilot cities of cultural consumption to stimulate cultural consumption.

Here, this paper uses Abadie et al. (2010) to propose a benchmark model: $Y'_{m,t} = \alpha t \delta_t Z + \theta_t \mu_m + \varepsilon_{m,t}$ synthetic estimation of $Y'_{m,t}$ to determine the size of $\beta_{m,t}$. Where, M represents the number of cities in the control group not subject to policy intervention, T_0 indicates the year when the policy of cultural consumption pilot cities is implemented, and $1 \leq T_0 \leq T$, $Y'_{m,t} = Y''_{m,t} - \beta_{m,t}$ denotes $t \in T_0$, T is the "treatment effect" of the implementation of the policy of the pilot city of cultural consumption, that is, the growth reflected in the hesitation of the per capita consumption expenditure of urban residents in the M city to receive the policy intervention of the pilot city of cultural consumption at time T . The difficulty is that the city M intervened by the policy of pilot cities of cultural consumption is in T_0 . The per capita cultural consumption level that is not interfered by the policy after 0 years cannot be observed, that is, the hypothetical City M is not interfered by the policy after T_0 years $Y'_{m,t}$ can only be known by weighting and synthesizing the data of different cities through the model.

In operation, all cities not interfered by the policy will get a weight w_m respectively. The $(M * 1)$ -dimensional vector $W = (w_1, w_2, \dots, w_{m+1})'$ composed of all weights represents the synthetic vector of the target city under the policy of the pilot city of cultural consumption. The weight of the cities not interfered, that is, their contribution to the target city actually processed by the synthesis, Any M satisfies $w_m \geq 0$ and $w_1 + w_2 + \dots + w_{m+1} = 1$. For the target city subject to policy adjustment, the vector W represents the potential synthetic control combination, and each w in the combination w_m measures the synthetic contribution rate of cities in the control group to the target city. Therefore, the result variables of synthetic control are:

$$\sum_{m=2}^{M+1} w_m Y_{m,t} = \square_t + \delta \sum_{m=2}^{M+1} w_m Z_m + \theta \sum_{m=2}^{M+1} w_m \mu_m + \sum_{m=2}^{M+1} w_m \varepsilon_{it} \quad (1)$$

Assuming that there is a vector group $(w_2^*, \dots, w_{m+1}^*)$, for the target city intervened by the policy of the pilot city $m = 1$ of cultural consumption, it meets the following requirements:

$$\sum_{m=2}^{M+1} w_m^* Y_{m,1} = Y_{1,1}, \sum_{m=2}^{M+1} w_m^* Y_{m,2} = Y_{1,2}, \sum_{m=2}^{M+1} w_m^* Z_m = Z_1, \quad (2)$$

If $\sum_{m=2}^{T_0} \lambda'_t \lambda_t$ is nonsingular, the following formula holds:

$$Y'_{m,t} - \sum_{m=2}^{M+1} w_m Y_{m,t} = \square_t + \delta \sum_{m=2}^{M+1} w_m \sum_{m=2}^{T_0} \lambda_t (\sum_{m=2}^{T_0} \lambda'_t \lambda_m)^{-1} \lambda'_s (\varepsilon_{m,s} - \varepsilon_{1,t}) - \sum_{m=2}^{M+1} w_m^* (\varepsilon_{m,t} - \varepsilon_{1,t}) \quad (3)$$

Abadie et al. (2010) proved that the left side of equation (3) approaches 0. Therefore, during the implementation of the policy of cultural consumption pilot cities, w can be used $W_m^* Y_{m,t}$ to approximately replace $Y'_{m,t}$. For the target city $m = 1$ intervened by the policy of pilot cities of cultural consumption, the impact of the establishment of the pilot city of cultural consumption on its cultural consumption is: $\hat{\beta}_{1,t} = Y'_{m,t} - \sum_{m=2}^{M+1} w_m^* Y_{m,t}$, $t \in [T_0 + 1, \dots, T]$. To get $\hat{\beta}_{1,t}$. For the optimal unbiased estimation of (1, t), this paper will determine the optimal weight w_m by minimizing

$||X_1 - X_0W||$, based on the theory experimented by Abadie et al.(2010). Where, X_1 refers to the $(k*1)$ viterbilt vector Z_1 of the target city before the policy intervention of the pilot city of cultural consumption, X_0 refers to its $(k * m)$. Witt sign vector Z_2 after the policy intervention, and $m > 1$, where Z_1 and Z_2 represents any linear combination of the control variables considered.

Based on this, this paper uses the synth program developed by Abadie et al. (2010) to estimate the impact of the cultural consumption pilot city policy on the growth of cultural consumption in Huizhou by Taking Huizhou as the cultural consumption pilot city policy processing group and multiple cities at the same level in China as the control group.

4.2 Variable selection and description

This paper mainly explores the impact of the 2016 pilot city policy on the growth of cultural consumption in Huizhou, so cultural consumption is taken as the evaluation variable. According to the existing research conclusions, this paper defines the influencing factors of per capita urban cultural consumption as urbanization rate, income, potential scale and the number of domestic films per unit. Based on the alternative variables adopted by Li Cheng (2016), Liao Fan (2019) and Gu Jiang (2018), taking the proportion of college students per 10000 people as the potential consumption scale, the number of Chinese films in the top 20 national film and television rankings in 2008-2018 is used to measure the effective supply of cultural production^{[7][8][9]}, and the income and urbanization rate are used as the key prediction variables, And logarithm all variables^[10].

This paper takes the data of 14 prefecture level cities in China from 2008 to 2018 as the initial sample, Huizhou as the policy processing group, and the other 13 cities as the composite group. All the data involved in this paper are from the official statistical yearbook data of the people's Government of each city, and the missing data in a few years are supplemented in the annual report of the corresponding city.

5. Analysis of empirical results

The empirical analysis ideas of this paper are as follows: ① use the synthetic control method (SCM) to find out the appropriate synthetic group to test whether the implementation of the policy of cultural consumption pilot cities has an impact on the level of cultural consumption in Huizhou;② The placebo test is used to judge the robustness of the policy of pilot cities of cultural consumption to driving the level of cultural consumption in Huizhou.

5.1 Effect of pilot policies on cultural consumption in Huizhou

Table 1 Weight chart of each state

	Unit_weight					
Co_No	3	4	5	6	7	8
Unit_Weight	0	0.396	0	0	0.087	0.298
Co_No	9	10	11	12	13	14
Unit_Weight	0.08	0	0.075	0.052	0	0.013

Three cities in Guangzhou have implemented the pilot city policy of cultural consumption. In this paper, two cities with significantly higher development levels than most provinces in China, Guangzhou and Shenzhen, are excluded, and Huizhou is selected as the treatment group without secondary synthesis. The contribution weight of each city in the synthesis group is shown in table 1. In the specific empirical operation, number 2 represents Huizhou City, and numbers 3, 4 and 5 represent prefecture level cities such as Maoming City, Meizhou city and Shanwei City respectively. Among them, seven cities such as Meizhou City, Chaozhou City and Jieyang City have weight, while five cities such as Maoming City, Shanwei City and Zhongshan City have zero contribution to the

integration of "Huizhou City", which indicates that in the 12 cities in the sample set, Meizhou city and Jieyang City are most similar to Huizhou City before the implementation of the policy with weights of 0.396 and 0.298.

The composite results before and after the implementation of the policy can be obtained by obtaining the weight of each city in the composite group, as shown in Figure 1. The solid line in the figure represents the actual cultural consumption of Huizhou, and the dotted line represents the cultural consumption path of the composite group cities. As shown in the figure, before the implementation of the policy in 2016, the paths of the synthetic group and the real treatment group almost completely coincided, and the MPSE value before the intervention was 73.08, as shown in Figure 2, which was significantly lower than the MPSE value when the random synthetic analysis unit was used as the hypothetical treatment group. It shows that the synthetic analysis unit better fits the growth path of cultural consumption in 13 cities except Huizhou before the implementation of the policy of cultural consumption pilot cities. Specifically, after the implementation of the cultural consumption pilot city policy in 2016, the solid line and dotted line in the figure have obvious path separation, and the solid line is significantly higher than the dotted line, which shows that the cultural consumption pilot city policy implemented in 2016 has an obvious positive driving effect on cultural consumption in Huizhou city. It can be seen that the policies of the pilot cities of cultural consumption have driven the level of cultural consumption in the areas where the policies are implemented.

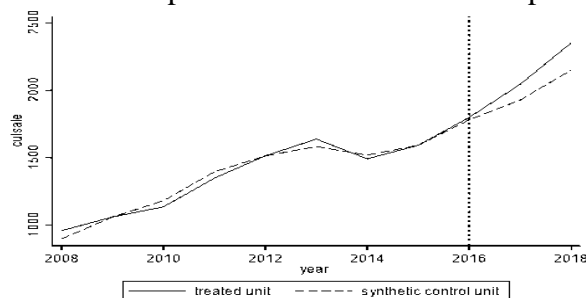


Figure 1 Synthesis control results of Huizhou City as the control group

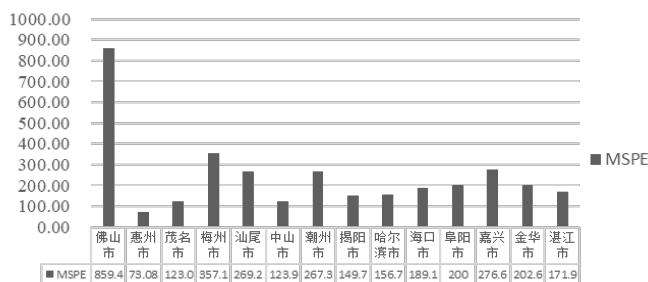


Figure 2 MSPE value of each state

In order to better reflect the pull of the policy on the cultural consumption of the treatment group, this paper calculates the average growth rate of the cultural consumption of the treatment group and the composite group after 2016. (the table and calculation of the growth rate can be put in the appendix) the growth rate of cultural consumption of the treatment group from 2016 to 2017 is about 0.142, and the growth rate from 2017 to 2018 is 0.15. The growth rate of cultural consumption of the composite group in 2016-2017 and 2017-2018 was only 0.057 and 0.089, which was significantly lower than the growth level of cities intervened by cultural consumption policies. This shows that the policy of cultural consumption pilot cities has significantly promoted local cultural consumption. Among them, the effective promotion of cultural consumption from 2016 to 2017 was 245.42 yuan, and the effective promotion of cultural consumption from 2017 to 2018 was 306.70 yuan (data source: calculated by the author).

5.2 Validity and robustness test

5.2.1 Validity test

In order to enhance the effectiveness of the demonstration, this paper uses the RMPSE ratio of the target analysis unit and the similar control unit before and after the policy intervention to judge the effectiveness of the policy of consumption pilot cities in stimulating cultural consumption. This method belongs to the category of placebo test. It mainly extracts and compares the RMPSE value after the policy intervention by selecting the control unit similar to the target analysis unit. The following figure mainly shows the RMPSE chart curve of the control analysis unit similar to the target analysis unit after 2016.

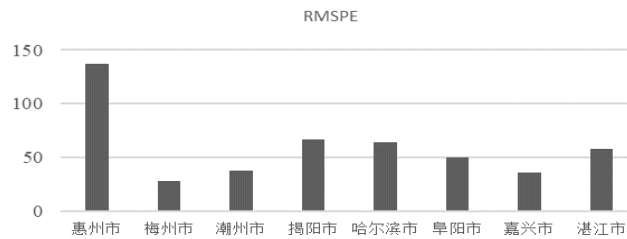


Figure 3 RMPSE values predicted by States

Judging from the effectiveness of the placebo test, the RMPSE value of Huizhou is 136.8, which is significantly higher than the RMPSE value of other similar control units with weights, indicating that the empirical result of cultural consumption driven by the policy of pilot cities estimated by the synthetic control method is effective. It is worth mentioning that the synthetic control unit with a weight of 0 must be eliminated for the placebo test, and the effective average weight shall be judged according to the number of units that effectively provide the weight. The greater the weight, the greater the similarity and contribution between the synthetic unit and the target analysis unit. In this example, there are 14 urban units in total, of which 7 contribute to the weight, so the average weight is 0.143 (1 / 7). Therefore, Meizhou and Jieyang should be selected as the objects of placebo test, but the comparison results of other cities are still added in the chart to better highlight the RMPSE value of Huizhou after the implementation of the policy in 2016.

5.2.2 Placebo test for exogenous variables

2016The establishment of cultural consumption pilot city policy in has become a large exogenous impact for many established cities. In order to ensure the robustness of the analysis results and exclude the impact of different control groups and the particularity of estimation methods on the empirical results, this paper uses the placebo test method to test the robustness and interference of the empirical results.

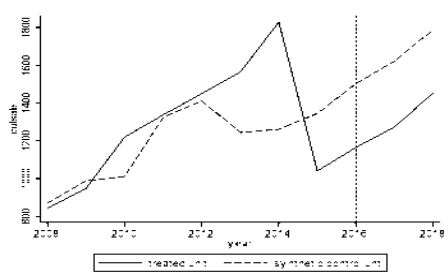


Figure 4 Shanwei City and synthetic Shanwei city

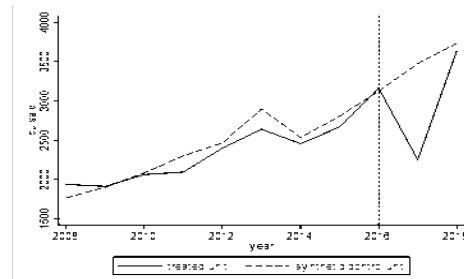


Figure 5 Zhongshan City and synthetic Zhongshan City

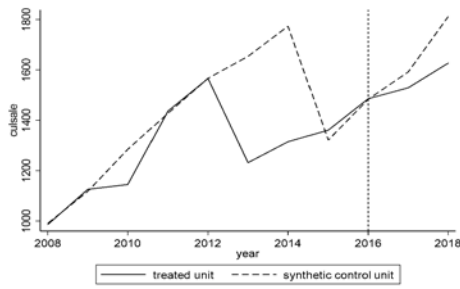


Figure 6 Chaozhou City and synthetic Chaozhou City

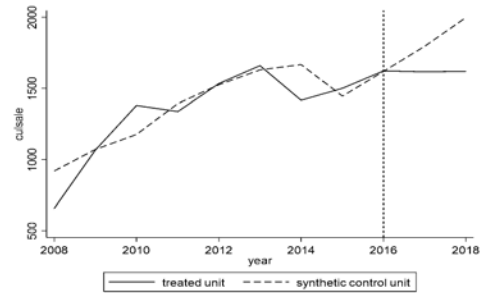


Figure 7 Jieyang City and synthetic Jieyang City

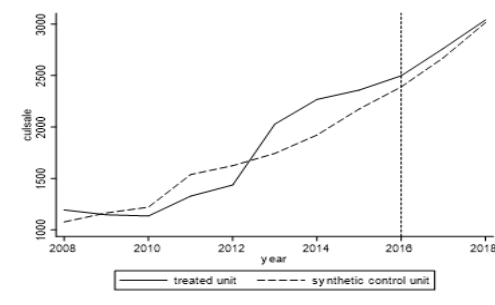


Figure 8 Haikou City and synthetic Haikou City

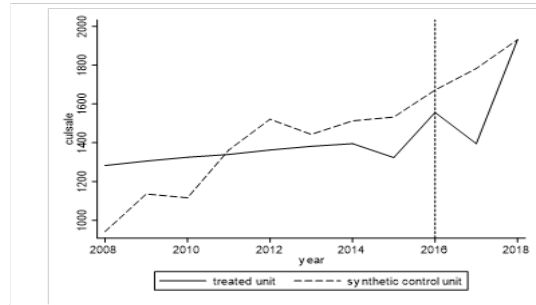


Figure 9 Fuyang City and synthetic Fuyang City

The figure above shows the empirical results of the hypothetical "policy" of cities in the six composite groups of Shanwei City, Zhongshan City, Chaozhou City, Jieyang City, Haikou City and Fuyang City. As shown in the figure, because other cities cannot synthesize Shanwei city with high quality, there is a large deviation between the treatment group and the synthesis group before the implementation of the policy. The MSPE value before the intervention is 269.2409, indicating that the curve fitting effect is poor. In addition, although the cultural consumption level of the processing group also showed an upward trend after the implementation of the policy in 2016, the solid line of the real processing group in Shanwei city was obviously below the dotted line of the synthetic control group, which was significantly different from the image trend after Huizhou was really intervened by the cultural consumption policy. In Figure 5, the composite image of the pilot city of cultural consumption in Zhongshan City before the implementation of the policy is basically consistent with the image of the actual processing group. However, after the implementation of the policy, due to the impact of other exogenous impact variables on cultural consumption in Zhongshan City, its cultural consumption shows a "V-shaped" development trend of explosive decline and accelerated rise, It is also significantly different from the rapid development path of Huizhou. The subsequent composite groups of Chaozhou, Jieyang, Fuyang and Haikou can not well fit the development path of the real city before the implementation of the policy, and their cultural consumption trend is obviously different from that of Huizhou after the implementation of the policy. The above shows that if the random synthesis analysis unit is selected to synthesize the hypothetical "treatment group", its path development and fitting are quite different from the fitting of the real treatment group in Huizhou, so the possible "placebo effect" in the empirical process can be excluded, That is, it effectively avoids the impact of the possible "psychological effect" of each city on the empirical results due to the different cities and analysis methods, which proves that the empirical results are robust.

6. Conclusion and Enlightenment

The implementation of cultural consumption pilot city policy plays an important role in guiding urban residents' cultural consumption. This paper synthesizes and compares the growth paths of cultural consumption in some prefecture level cities in China from the supply level, demand level and macro level, and finds that the implementation of the policy of cultural consumption pilot cities has obvious significance of improvement under the cultural development in recent two years.

Combined with the combing and empirical research on the historical development of China's cultural consumption, the suggestions on the measures to stimulate China's cultural consumption are as follows: ① fully understand the supply capacity of cultural enterprises and the consumption demand of residents, establish a two-way exchange mechanism with the coexistence of demand and feedback, and truly take "Literature" and justice; ② Improve and create the level of cultural consumption demand of local residents, increase the investment in school running funds of major colleges and universities, and create new cultural forms to release the vitality of local diversified cultural consumption; ③ Increase the historical burden of state-owned cultural enterprises, integrate and revitalize the stock of cultural assets, and deeply tap the market on the basis of maintaining traditional customer groups; ④ Cultivate and attract cultural and creative talents and mobilize their creative enthusiasm. In addition, it is necessary to reduce the "non economic costs" of enterprises and let the majority of cultural and creative talents "attract, do well and stay".

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