

Coordination Between Tobacco Resource Development and Regional Economy

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Objectives: This paper studies the relationship between the development of tobacco resources and the coordination of regional economy under the background of tobacco monopoly. **Methods:** This paper takes the institutional change theory as the theoretical fulcrum and the cost-benefit analysis as the main line, the correlation between regional economy and the development of tobacco industry is compared. This paper expounds the evolution history and institutional characteristics of China's tobacco monopoly system, and analyzes the changes of production, supply and marketing relationship, institutional characteristics and benefit distribution of the tobacco industry in each period. After the theoretical and empirical analysis of the costs and benefits of China's tobacco monopoly system, this paper studies the role of tobacco resource development in promoting regional economy by comparing the costs and benefits of radical and gradual reform. **Results:** On the premise of retaining tobacco monopoly, we should take the separation of government and enterprises and the reform of tobacco fiscal and tax system as the breakthrough. This can change the tobacco industry from administrative monopoly to economic monopoly and form tobacco trust. The linkage mechanism of "tax, profit and price" should be established to protect the interests of tobacco farmers. A tobacco auction center shall be established and a third-party tobacco rating agency shall be guided. **Conclusion:** The net income of the new system is higher than that of the old system. The healthy development of tobacco industry can promote regional economy.

Key words: tobacco resources, tobacco industry development, regional economy, coordination.

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China's tobacco industry is a pillar industry of China's economy¹. The upstream and downstream of the tobacco industry chain involve three industrial sectors: agriculture, industry and commerce. China is a major tobacco growing country, cigarette producing country and cigarette consuming country in the world²⁻³. Tobacco planting, cigarette production and consumption account for nearly one-third of the world

share. The tobacco industry is not only related to the national fiscal and tax revenue, but also related to the vital interests of many tobacco farmers, cigarette operators and smokers⁴. Therefore, the reform of tobacco industry has a great impact on the national social economy. It is of great significance to study the reform of the tobacco industry system, scientifically design the reform path, carefully arrange the reform steps,

and properly deal with various complex interest relations for the development of the socialist economy and the construction of a harmonious society.

Tobacco products are different from general commodities⁵⁻⁶. Smoking the smoke produced by tobacco combustion will make people feel happy and excited, and easy to become addicted. For example, long-term smoking will damage human health. "Addiction" and "harmfulness" are the characteristics that distinguish tobacco products from other commodities. If countries cannot fundamentally ban tobacco consumption, they will strictly control the tobacco industry. Their control means are different, which can be summed up in two ways, namely "taxation" and "monopoly"⁷. Taxation is a way of "combining prohibition with taxation". Heavy taxes are imposed on the tobacco industry, and the tax lever is used to raise the price of tobacco, which can increase the national fiscal revenue and control tobacco consumption⁸⁻⁹. Monopoly is more stringent control, which can be divided into complete monopoly and incomplete monopoly, that is, the state monopolizes all or part of the production, circulation and consumption of the industry, so as to control the development of the tobacco industry¹⁰.

China has always adhered to the tobacco monopoly system, and the tobacco industry has not made any major adjustment in monopoly for a long time. However, in the tobacco industry carried out a drastic reform in the organizational structure¹¹. In, Anhui China Tobacco Industry Corporation was established, which opened the prelude to the reform of the separation of industry and Commerce in the tobacco industry. In the following two to three years, the reform was basically completed throughout the country¹². Through the separation of industry and commerce, the company of the Provincial Tobacco Monopoly Bureau lost its ownership of the tobacco factory,

lost the interest impulse to protect, and relaxed the entry threshold of tobacco outside the province to a certain extent. Since 2002, the inter provincial allocation of cigarettes has gradually increased, creating certain conditions for the tobacco industry to form large brands and enterprises¹³⁻¹⁵.

METHODS

Institutional Costs and Benefits

To understand institutional cost, we must first clarify the concept of transaction cost. Transaction cost is the cost for individuals to exchange their ownership of economic assets and establish their exclusive rights. Transaction cost includes the cost of preparing the contract in advance, supervising and enforcing the contract afterwards. Different from production cost, it is the cost of performing a contract. Like other costs in economic theory, transaction cost is an opportunity cost, which can also be divided into variable cost and constant cost. The reason why transaction cost has not entered the analysis of mainstream economics is that even so far, most economic theories and models assume complete information, and transaction cost is related to the cost of obtaining information about transactions to a certain extent.

To understand the benefits of the system, we must accurately grasp the function of the system. The reason why a good system generates benefits is that it can reduce the uncertainty of human behavior and promote the efficiency of behavior. Because it reduces the exclusive cost, coordination cost, transaction cost, organization cost, enforcement cost, agency cost and other costs, the benefits of the system come from the system function.

The author believes that the system has the following functions, namely, institutional benefits: (1) coordinate human behavior and strengthen

interpersonal trust. One function of the system is to make the complex interpersonal communication process easier to understand and foresee, so that the coordination between different individuals is simpler. The system reduces the complexity of the world and provides a key function to simplify the identification burden. The system makes the reactions of others more predictable and the world more orderly, which makes it easier for individuals to deal with a complex and changeable world, and also makes it easier for individuals to avoid "overload identification".

(2) Protect all kinds of property rights. Property rights include private property rights, collective property rights and community property rights. As mentioned earlier, an important function of the system is to define property rights, including exclusive ownership of an asset, free transfer right and residual claim right. The clear definition of property rights by the system can reduce people's uncertainty and opportunistic behavior in the process of communication and transaction, and make the owner of property produce certain expected benefits for the disposal and application of property. System can protect property rights from the interference of other people or organizations, which is one of the basic human values.

(3) Avoid and resolve conflicts. Another important function of institutions is to help alleviate conflicts between individuals and groups. In many cases, conflicts are inevitable between individuals acting independently. When different people pursue their personal goals and exercise their free will, they often affect others. Rules of conduct can avoid or resolve conflicts by delimiting the scope of independent action and providing adjudication mechanism.

Costs And Benefits Of Monopoly System

The monopoly system needs to be formulated and maintained by state organs, including the National People's Congress, public security, procuratorates, courts and other systems, as well as the administrative departments of the monopoly industry. The monopoly system can be promulgated and implemented only after it is discussed and adopted by the Standing Committee of the National People's Congress. The competent department of the monopoly industry is responsible for the specific operation of the monopoly system. When there is a conflict between the operation of the monopoly system and the outside world, the monopoly administrative law enforcement agency shall enforce the law according to law. If it touches the criminal law, the public security and law enforcement system shall perform the duties of law enforcement and judicature and maintain the seriousness of the law. As an economic system widely implemented throughout the country, in order to ensure smooth operation and improve efficiency, the monopoly system must be raised to the level of laws and regulations, so that there are laws to abide by, law enforcement must be strict, and violations of laws must be prosecuted.

Therefore, the cost of monopoly system includes legislative cost, law enforcement cost, judicial cost and administrative cost of the main executor of monopoly system. The above costs can be divided into two categories. One is the operation cost of the monopoly system, that is, the internal cost of the monopoly system, which is the main cost of the monopoly system, which is theoretically expressed as "agency cost". The other is the extension cost of the operation of the monopoly system, which is closely related to the monopoly system, but not the direct cost of the monopoly system, such as the cost of legislation, judicature and law enforcement.

(1) Revenue content of monopoly system: as a system, monopoly system must have the universality of the system and all the benefits of general system. At the same time, it also has its own particularity, which is reflected in the income obtained by the exclusive production and operation of the industry under the monopoly system. This kind of income can be divided into monopoly profit, excess monopoly profit, tax evasion by state-owned enterprises and positive externality income obtained by providing some public services.

(2) Essence of monopoly income and profit: monopoly system is a form of state monopoly, and monopoly operation and management organization is the specific executor of monopoly system, so the monopoly income obtained belongs to the state. The income of the monopoly system is the monopoly income obtained by the monopoly organization through monopolizing all or part of the operation of a certain commodity. Part of this income is used to pay various expenses in the monopoly operation and management, and the other part belongs to the state property as tax profit, which can be allocated or withdrawn by the state. As the monopoly management organization of national enterprises, it should not only pay various taxes, but also pay part of the profits to SASAC and fulfill its obligations to the investors.

(3) Net income of monopoly system: The net income P_n of monopoly system can be expressed by the formula $P_n = P_i - P_c$. P_i stands for the income of monopoly system, which means the social income increased after adopting this system than before adopting this system. P_c stands for the cost of monopoly system, which is the social cost increased after adopting this system than before adopting this system. When $P_i > P_c$, the net income P_n of monopoly system is positive, otherwise, it is negative.

Cost And Benefit Of Tobacco Monopoly System In New China

Tobacco monopoly system belongs to a special monopoly system. It not only has cost and income components similar to the general monopoly system, but also shows the particularity of special cost and income due to plan management and tobacco fiscal and tax system. As we all know, centralized management can improve performance. It is under the guidance of this idea that the national management of the tobacco industry has changed from decentralized management to trust management, and then from trust management to tobacco monopoly system. Due to the continuous concentration and centralization of power, the number of cigarette factories in China is decreasing. In 1963, the trust was established on a trial basis. China Tobacco Industry Corporation uniformly operated the production of cigarettes and the purchase and distribution of flue-cured tobacco throughout the country, and managed cigarette factories and tobacco procurement and allocation institutions. And redrying plants, machinery plants and printing plants serving the tobacco industry. At the end of 1964, they took over the tobacco purchase and supply business from the national supply and marketing cooperatives, realizing the integration of supply and production, and the cigarette products are uniformly underwritten by the commercial departments. At the same time, the number of cigarette factories in China was adjusted from 104 to 61, and 43 were closed down and transferred. As shown in Table 1, a total of 5.6 billion yuan of taxes and profits were paid from 1963 to 1966, which was higher than that in the period of unified purchase and marketing and the "Cultural Revolution". The centralized management of trust improved the concentration of the tobacco industry and produced economies of scale.

Table 1 Tax Profit Of Tobacco Industry Before Tobacco Monopoly System

Particular year	Tax profit (100 million yuan)	Time	Remarks
1953-1957	46	Period of unified purchase and underwriting	Cigarette industrial enterprises are directly managed by the Ministry of light industry, and small and medium-sized enterprises are still managed by local governments
1958-1962	42	Period of unified purchase and underwriting	All the enterprises under the management of the Ministry are delegated to the province, and the enterprises under the management of the province are delegated to prefectures and cities
1963-1966	56	Trial trust period	In 1963, it tried to establish a trust, which was highly centralized
1966-1976	The economic benefits have decreased significantly	During the Cultural Revolution	All decentralization

Note: according to the history of Chinese tobacco

After the tobacco monopoly system has operated under the planned economic system for many years, due to the changing environment of the times and the diminishing marginal efficiency of the monopoly system, its planned system and fiscal and tax system lead to local protection, and the national monopoly has become a local monopoly. In order to break the local protection and further improve the performance of the tobacco monopoly system, the State Tobacco Monopoly Bureau began the reform of separating industry and Commerce and organizing the supply of goods according to customer orders. The separation of industry and Commerce reorganizes tobacco industrial enterprises within each province. The reform cost is less

than the inter provincial reorganization, but it can form large industrial enterprises in the province to achieve certain scale benefits. Therefore, it is also supported by the provincial government. Therefore, the reform resistance is small and the reform cost is not high, but it breaks the protection of commercial enterprises to local industrial enterprises to a certain extent. As shown in Table 2, cigarette production has increased rapidly since the separation of industry and Commerce in 2003. In 2003, the national cigarette output was only 35.8086 million boxes, and in 2004, it increased rapidly to 37.4727 million boxes, showing the high institutional income generated by industrial and commercial separation and industrial restructuring.

Table 2

China's Cigarette Output From 1999 To 2009 (Unit: 10000 Cases)

Particular year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cigarette output (10000 cases)	3340	3397	3402	3467	3580	3747	3877	4043	4287	4439	4580

It can be seen that, as a mandatory institutional change, the state's reform and evolution of the management mode of the tobacco industry is more about improving the operation efficiency of the current system and whether the cost of reforming the current system is high, but there is no deep-seated and detailed prediction of the institutional performance after the reform.

RESULTS

An Empirical Analysis On The Cost And Benefit Of Tobacco Monopoly System In New China

Estimation method of cost of tobacco monopoly system in New China:

(1) Rent seeking cost estimation. The rent-seeking cost is generally included in the management cost of enterprises. In this paper, the ratio of management cost to main business cost of food manufacturing industry with a high degree of marketization is used as a reasonable cost-benefit ratio. The part where the ratio of management cost to main business cost of tobacco industry is higher than a reasonable cost-benefit ratio is roughly regarded as the rent-seeking cost of tobacco monopoly system. Food manufacturing industry is selected because it belongs to light industry with tobacco products industry, and their production and processing methods and cost structure are similar. Food manufacturing industry is a non-government regulated industry and the market competition is fierce, so the rent-seeking cost of the industry is very low.

(2) Estimation of unnecessary loss. The estimation of deadweight loss (DWL) adopts the commonly used calculation method of deadweight loss caused by monopoly, that is, the calculation method proposed by Haberg, which is as shown by the formula $DWL = 1/2r\epsilon P_m Q_m$, r is the economic profit rate of tobacco industry, ϵ is the price demand elasticity of cigarette products, and $P_m Q_m$ is the sales income of tobacco industry.

(3) Cost estimation of monopoly administration. Because tobacco monopoly organizations and tobacco circulation enterprises have "two brands, one set of people", the government and enterprises are not divided, and the funds are unified, the current accounting system does not list the subject of "monopoly administration cost". And it is mixed with "operating and management expenses", so it is necessary to determine a certain proportion and separate it from "operating and management expenses". The cost of tobacco monopoly management accounts for 30%-40% of the system management cost of tobacco monopoly bureau. Here, 35% is taken for estimation, that is, monopoly management cost = operation and management expenses of tobacco monopoly bureau \times 35%.

Estimation method of income from tobacco monopoly system in new China:

(1) Estimation of excess monopoly profits. Excess monopoly profit is the excess profit of tobacco industry exceeding the average profit of light industry department. The excess profit (M_1) can be estimated by the formula:

$M_1 = (\text{cost profit rate} - \text{average cost profit rate of light industry department}) \times \text{total industry cost}$.

(2) Estimate the income from less tax evasion. According to Xu Wen's calculation, under the condition of underestimating the scale of tax evasion, the average tax evasion rate of domestic value-added tax in China was 28.71% during 1995-2003 and 18.34% during 2001-2003. After inquiring the relevant person in charge of tax collection of the tax department, the proportion of tax evasion by enterprises was determined as 25% from 1995 to 2000, and 15% after 2000. The following formula can be used for less tax evasion M_2 :

$M_2 = (\text{main business taxes and surcharges} + \text{VAT payable} + \text{income tax}) \times (x)\%$. Evaluation of cigarette GDP (CGDP) from 2005-2020 is shown in Figure 1.

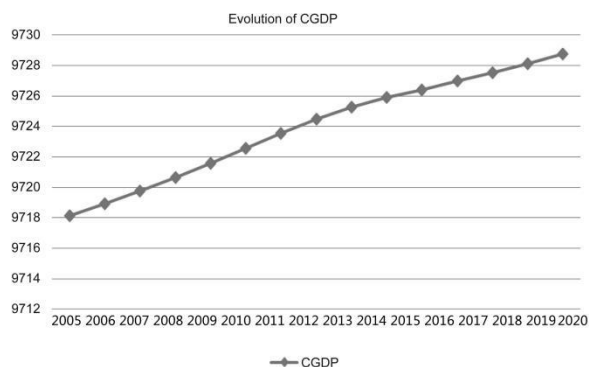


Figure 1 Evaluation of cigarette GDP(CGDP)

Empirical Analysis

After summarizing the cost of tobacco monopoly system, table 3 is obtained.

Table 3
Cost Summary Of Tobacco Monopoly System (Unit: 10000 Yuan)

Particular year	Rent-seeking cost	Deadweight Loss	X low efficiency	Tobacco monopoly management cost	Total cost of tobacco monopoly system	GDP	Proportion
1997	-56756	206792	2895875	780000	3825911	789730000	0.48%
1998	-61355	151794	5223974	800000	6114413	844023000	0.72%
1999	-63663	154884	5896864.8	390000	6378086	896771000	0.71%
2000	-68202	186393	5250108.8	600000	5968300	992146000	0.60%
2001	-22928	245228	6477760.8	820000	7520061	1096552000	0.69%
2002	11143	330798	7888412	910000	9140353	1203327000	0.76%
2003	39267	506428	9622389.2	1000000	11168085	1358228000	0.82%
2004	103582	905837	9947314.3	1190000	12146733	1598783000	0.76%
2005	183936	1093153	12044737.6	1480000	14801826	1832174000	0.81%
2006	378563	1738347	11795673.6	1600000	15512584	2119235000	0.73%
2007	502814	2313739	14953870.8	1750000	19520425	2573056000	0.76%
2008	696924	3011858	16991013.6	2020000	22719795	3140450000	0.72%
Total	1643325	10845251	108987994.5	13340000	134816572	18444475000	0.73%

As can be seen from table 3, the overall trend of the cost of the tobacco monopoly system has increased from 1997 to 2008, and the proportion in GDP has increased from 0.48% in 1997 to 0.82% in 2003, and then gradually decreased. It shows that the industrial and commercial separation reform of tobacco monopoly system in 2002 has increased the institutional cost of tobacco monopoly system. Over the past 12 years, the average cost of tobacco monopoly system has accounted for 0.71% of GDP.

Due to the lack of data on protecting the income of tobacco farmers, it is impossible to judge the overall trend of the income of tobacco monopoly system. In the years 2004-2008 with complete observation data,

the income of tobacco monopoly system was unstable, sometimes high and sometimes low, accounting for an average proportion of 0.60% of GDP. Finally, the costs and benefits of tobacco monopoly system are summarized and compared. Because the data of costs and benefits before 2004 are incomplete, only the costs and benefits of tobacco monopoly system from 1997 to 1998 and 2004 to 2008 are selected for comparison. As shown in Table 4, since 1998, even if the income of tobacco farmers is overestimated, the cost of tobacco monopoly system is still greater than the income. According to the relationship between cost-benefit decision and institutional change, once the institutional

cost exceeds its income, there will be an internal driving force to promote its reform, which will eventually lead to institutional

change. Therefore, the tobacco monopoly system needs to be reformed in essence.

Table 4

Particular year	Cost Benefit Comparison Of Tobacco Monopoly System				
	Total revenue of tobacco monopoly system	GDP	Income as a percentage of GDP	Cost as a percentage of GDP	Total cost of tobacco monopoly system
1997	5000633	789730000	0.63%	0.48%	3825911
1998	4397651	844023000	0.52%	0.72%	6114413
2004	9489836	1598783000	0.59%	0.76%	12146733
2005	11350876	1832174000	0.62%	0.81%	14801826
2006	13926428	2119235000	0.66%	0.76%	15512584
2007	14151413	2573056000	0.55%	0.76%	19520425
2008	18357604	3140450000	0.58%	0.72%	22719795

DISCUSSION

At present, there are three opinions on the reform of the tobacco monopoly system in China. One is to adhere to the tobacco monopoly system. Most of the people who hold this view are employees of the tobacco industry. The second is to abolish the tobacco monopoly system, represented by Liu Lian and Yang Xiang. The third is to adhere to the reform under the tobacco monopoly system, represented by Tao Ming and he Yunsheng.

The author believes that it is inappropriate to adhere to the tobacco monopoly system. First, it will cause higher social costs and damage social welfare. Through the above analysis, the cost of tobacco monopoly system exceeds the income. If it continues to be maintained, its system costs such as rent-seeking cost, unnecessary loss, X low efficiency and huge monopoly management cost will further expand, resulting in greater social losses. Second, if we continue to maintain the current operation mode and existing interest pattern, maintain plan management, and

keep the tobacco fiscal and tax policies unchanged, local protection cannot be completely broken. The tobacco industry cannot become bigger and stronger, and its competitiveness cannot be improved. Third, it will hinder the formation of a unified cigarette circulation market and damage the interests of cigarette operators and consumers. Therefore, solidifying the existing tobacco monopoly system and refusing to reform are unfavorable to most interest groups.

This paper holds that China's tobacco monopoly system must be de monopolized because the institutional cost exceeds the institutional income, and should adopt a gradual approach because of the high cost of institutional change. Therefore, on the premise of retaining the tobacco monopoly, we should take the separation of government and enterprises and the reform of tobacco fiscal and tax system as a breakthrough to transform the tobacco industry from administrative monopoly to economic monopoly, form tobacco trust, improve the performance of tobacco monopoly system, and cancel the tobacco monopoly system only after the tobacco

trust operates normally. After the abolition of the tobacco monopoly system, the government should also retain appropriate control over the tobacco industry, establish a "tax profit price" linkage mechanism, protect the interests of tobacco farmers, establish a tobacco auction center, and guide the establishment of a third-party tobacco rating agency. Theoretically, the net income of the new system is higher than that of the old system.

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