



## Analysis of China Technical Education Fund Investment between Governments on Two Levels from Perspective of Dividend Distribution of State-owned Capital Gains

Xiao-Ling Zheng  
Minjiang University, CHINA  
Renming University, CHINA

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### ABSTRACT

The development of China's technical education has been severely constrained by the shortage of education funds. China's technical education funding are too small. The main source of education comes from fiscal revenue. A large proportion of State-owned enterprises profit income as a major source of fiscal revenue are still retained in the enterprises. We should turn over a portion of State-owned enterprises profit for technical education funding in order to alleviate insufficient technical education funds. The central government should decentralize powers to ensure the activity of local government, thus achieving the optimal coordination of benefits between the two, so as to increase the local government technical education funding. We should further refine the responsibility of all levels of government, improve the management mechanism of technical education funds. And then we should implement a comprehensive, multi-level technical education funding management mechanism.

**Keywords:** technical education funds, state-owned capital gains, two-level government, dividend of state-owned enterprises, benefit relationship

### INTRODUCTION

The system of capital investment in China is an important guarantee for educational funds of Vocational and technical education. At the same time, it is also an important way and means for the government to adjust the development of technical education. (Rodriguez, 2013). With the continuous deepening of the concept of technical education, China's investment in technical education has increased significantly, but from strategic perspectives the shortage of the investment can't match the growth of technical education and the development of public welfare. The governments do not define explicitly the investment in technical education so that there is a strong arbitrariness of the technical education funds in the actual investment process. (Zhang, Ning, & Barnes, 2016)

The technical education funding per capita in most developed countries are relatively high and keeping increasing trend. So that the degree of emphasis on technical education and efforts to gradually strengthen would be gradually strengthened and the coordination of investment in technical education and economic growth would be better. (Arcalean, & Schiopu, 2016)

Conversely, if the technical education funding per capita declined, the development of Vocational Education would slow down and then the coordination of technical education and economic growth would be

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**Correspondence:** Xiao-Ling Zheng, *School of Economics and Management, The research Center of Haixi Fiscal and Financial Development, Minjiang University, Fuzhou, Fujian 350108; Address to No.200, Xi yuan-gong Rd. Shangjie Town, Minhou County., Fuzhou City 350108, Fujian Province, China. Tel: +86-13599062993.*

✉ [54538750@qq.com](mailto:54538750@qq.com)

#### **State of the literature**

- The shortage of the investment can't match the growth of technical education and the development of public welfare in China. The governments do not define explicitly the investment in technical education so that there is a strong arbitrariness of the technical education funds in the actual investment process.
- After the reform of profit delivery, the state-owned enterprises did not turn over a penny to the government.
- The operation focus of state-owned assets system reform in China was shifted from the central government to the local government. The property right should be further divided according to the requirements for optimization of economic structure, based on the importance of state-owned assets in different regions; at the same time, due to the fact that the natural conditions and economic development level differ greatly in different regions, and significant different exists in terms of financial capacity and operation condition of state-owned assets.
- It is very important and urgent to decentralize the power appropriately by granting the local government the benefit distribution power that corresponding to their ownership and right of use.
- Whether the division of power of distribution of state-owned assets depends on whether the division of the property right of state-owned assets is reasonably.

#### **Contribution of this paper to the literature**

- If we gathered a portion of State-owned enterprise profit as the investment fund to technical education, it would alleviate the shortage of the investment in technical education.
- It can be seen that the rationality and optimal design of distribution of state-owned assets gains between the central and local governments are posing a great impact on operation efficiency of development of state-owned enterprises; an effective division system of state-owned assets gains can to a great extent enhance the initiative of the local government to increase fiscal income, and improve the utilization efficiency of social funds and the financing capacity of the local government, thus meeting the fund demand of the local government in terms of technical education construction.
- From the perspective of property right and management system efficiency, the reform goal to establish the "level-by-level ownership" of state-owned assets owned by the central and local governments can be achieved if the system and economic conditions allow. In another word, the central government and the local government are two completely equal property right subjects of the state-owned assets in terms of market significance. Furthermore, for the overall architecture and internal relationship of state-owned economy, a sound system and law protection system can be built up based on the "one-level government, one-level property right and one-level credit" principle.
- In order to achieve a more equal allocation of technical education resources, the governments should use State-owned enterprise profit to increase the input to poor regions according to the economic development of different regions.
- The government should actively guide social forces to support the development of Technical Education so as to build a government-led, industry enterprises, social groups and individuals to actively participate in the diversification of technical education funding mechanism.

relatively weaker. (Abramo, et. all 2011) Such as the Australian government financial investment accounted for about 80%, the United Kingdom was about 75%, the United States was more than 55%. Developed countries have diversified ways of raising funds for technical education to ensure the effectiveness of investment in technical education. Therefore, the investment of education funds is based on the scale of education, which would be shared principle by three aspects of government, society and individual. (Dougherty, Jones, Lahr, Natow, Pheatt, & Redy, 2014).

This paper mainly discusses the sources of fiscal education funds of state and local governments. In recent years, as the main source of education funding-China's fiscal revenue showed sustainably growth trend. However,

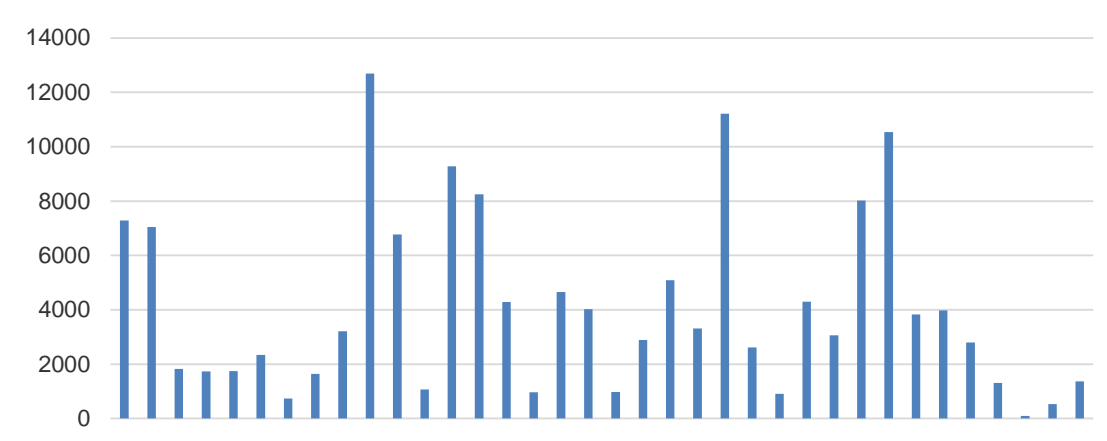
technical education in various provinces of China unevenly developed. The single source of funds come from the state finance. Thus, the government's financial resources are very limited and then the shortage of funds are a serious impediment to the development of technical education.

Accordingly, we should focus on how to expand the sources of funds under the limited financial resources. After the reform of profit delivery, the state-owned enterprises did not turn over a penny to the government. If we gathered a portion of State-owned enterprise profit as the investment fund to technical education, it would alleviate the shortage of the investment in technical education. Since the central government of China took back the distribution power of state-owned capital gains, the distribution ratio of the state-owned capital gains between the central government and local government has been up in the air.

Before the 16th National Congress of the Communist Party of China, the predominant characteristic of the state-owned assets management system implemented in China was that the ownership of the state-owned assets of China was highly centralized at the central government, which was reflected by the fact that the ownership vested with the central government. As a result, the contributors were not in place, with each department acting on its own; the property right and gains were not aligned; the property right of the contributor was hard to be exercised. After the 16th National Congress of the Communist Party of China, according to the spirit of the 3rd Plenary Session of the 16th Party Central Committee of China, for large state-owned enterprises, infrastructure and important natural resources that were related to the lifelines of the national economy and national security, the central government should act as the contributor on behalf of the state; for other state-owned assets, the local government should act as the contributor on behalf of the state. In 2003, China set up the state-owned assets supervision and administration commission on the central government level and city (prefecture) level, in an effort to reform the management system of state-owned assets by defining the rights of contributors. The property right of contributors include: Contribution decision making power, distribution power of state-owned assets gains, power of appointment and removal of property right representatives and major rights of management and decision making. In particular, the distribution power of state-owned assets gains is directly related to the distribution of benefit between the local government and central government. As a result, reform of the power of distribution of state-owned assets gains between the local government and central government became the key factor that influences maintenance and appreciation of state-owned assets value, drives the strategic adjustment of economic structure, reform of state-owned enterprises, guarantees optimized configuration of state-owned assets and helps to realize the overall target of macro-economic regulation and control of the government.

Since establishment of the State-owned Assets Supervision and Administration Commission of the State Council, the fields in which the central state-owned assets were involved have been gradually contracted and simplified. The number of central enterprises directly under its supervision was 196. Through year-by-year adjustment, the 196 central enterprises in 2003 were turned into 102 enterprises in 2016 through assets restructuring. Among the nearly 180,000 enterprises in China, the central government contributor will act as the contributors of the assets of the 102 state-owned enterprises, and the provincial or city-level governments should be act as contributors of assets of other enterprises. As such, the operation focus of state-owned assets system reform was shifted from the central government to the local government. The property right should be further divided according to the requirements for optimization of economic structure, based on the importance of state-owned assets in different regions; at the same time, due to the fact that the natural conditions and economic development level differ greatly in different regions, and significant different exists in terms of financial capacity and operation condition of state-owned assets, it is very important and urgent to decentralize the power appropriately by granting the local government the benefit distribution power that corresponding to their ownership and right of use.

In December 2007, the Ministry of Finance and the SASAC released the *Tentative Measures for Management of Collection of State-owned Capital Gains of Central Enterprises*, to provide reference for the local government to collect state-owned assets gains; at the same time, it facilitated the collection of state-owned assets gains by the local government on each level. Before that time, Guangdong and Shanghai had already started collection of state-owned assets. For instance, according to the requirements of *Tentative Regulations on Management of Collection of State-owned Assets Gains of Guangdong Province* implemented in 2005, all enterprises under supervision of the provincial SASAC or with stock held by the provincial SASAC are required to submit 20% of the operating profit, which is



From left to right: Beijing; Hebei; Inner Mongolia; Dalian; Heilongjiang; Zhejiang; Jiangsu; Fujian; Jiangxi; Qingdao; Hebei; Guangdong; Hainan; Guizhou; Shaanxi; Qinghai; Ningxia

**Figure 1.** Distribution of Total Quantity of State-owned Assets by Regions in China of 2014. Unit: 100 million yuan

10% higher than the maximum submission ratio of the central enterprises. (Xin, 2014) In 2016, the Ministry of Finance and SASAC re-published the *Measures for Management of Collection of State-owned Capital Gains of Central Enterprises* (CZ [2016] No. 32) to modify the Tentative Measures released in 2007, and further regulated the submission method of state-owned assets gains.

## RESEARCH DESIGN

### Definition of stock property right: a prerequisite for distribution of state-owned assets gains

The goal of relationship reform of distribution power for state-owned assets between the central government and local government is to establish a management system of distribution power of state-owned assets gains with one-level government and one-level gains distribution power. In another word, in the distribution system, the central government and the local government should collect the state-owned assets gains according to their ownership of the state-owned assets and the right of use. Therefore, whether the division of power of distribution of state-owned assets depends on whether the division of the property right of state-owned assets is reasonably.

In recent years, the overall regional distribution of state-owned assets is as follows: The local state-owned assets are mainly distributed in coastal areas in east China and only a small part of them are distributed in the central west China. The quantity of state-owned assets owned by different regions also differs greatly, with unbalanced distribution. Shanghai, Guangdong and Chongqing boast the most of the state-owned assets, while Qinghai and Hainan boast only a small part of the state-owned assets (as referred **Figure 1**).

According to the actual distribution of state-owned assets stock and the basic concept of the property right theory that “the contributor should be the beneficiary”, the source of state-owned assets stock should be defined in the first place. For state-owned assets stock with clear investment source and single investment subject, the dividing criteria that “the contributor should be the beneficiary” are applicable. The state-owned assets can be divided into two major categories, i.e., the state-owned assets formed by investment of the central finance, and that formed by investment of the local government. In addition, the two-level assets monitoring system and assets budget system involving both the central government and the local government should be respectively established. The central regulator should supervise state-owned assets of the enterprises directly controlled or owned by the central government s, as well as the central-level non-profit-making and resource assets, and should provide business

**Table 1.** Enterprises under Supervision of Central SASAC and Local SASAC in 2014

Index content		Number of state-owned enterprises	Number of employees (10,000 persons)	Total quantity of state-owned assets at the year end (100 million yuan)
By the supervision mode	Enterprises under supervision of the central SASAC	40615	3100.3	103018.2
	Enterprises under supervision of the local SASAC	73156	1455.9	140014.4
	National merger	113771	1644.4	243032.6

guide for the local regulators; the local regulators will, in turn, be responsible for supervising the state-owned assets of the provincial-level or a lower level. In addition, related laws and regulations should be introduced to define the guidance relationship in terms of supervision business between the contributors on the two levels under the “level-by-level ownership” system frame. As shown in **Table 1**, the number of state-owned enterprises, number of employees and total quantity of assets under supervision of the local government all exceed the state-owned enterprises under supervision of the SASAC.

The dividing criteria that “the contributor should be the beneficiary” are not applicable to the state-owned assets with diversified investment subjects, and complicated property relation. As the unified collection and allocation of funds by the state were implemented as the fiscal system during the planned economy period, theoretically, the central government was the only investment subject of the entire society, and the local government served only as the investment agent, and did not have the nature of an investment subject. (Xie, 2014). If the “contributor should be the beneficiary” dividing criterion was adopted, the state-owned assets formed during the period would all belong to the central government and this goes against the original intention of “level-by-level ownership”. Allowing the local government to “perform job duties of a contributor and enjoy interests and rights of an owner on behalf of the state” means that the local government enjoys the four basic rights involved in the ownership. With this rule unchanged, the local government can be regarded as the ownership subject of the state-owned assets within its investment management scope, and it can exercise the full distribution power of the assets as a contributor. After making clear that the local government can act as the ownership subject of state-owned assets, the report further specifically divided the basic content of “level-by-level ownership”, and stated that “the central government should act as the contributor of the large enterprises, infrastructure and important natural resources that are relevant to the national security and lifelines of the national economy on behalf of the state; and the local government should act as the contributor of other state-owned assets on behalf of the state”. (Liao, 2010). Such “highly autonomous rights” obviously can provide a clear policy basis for shift of the state-owned assets under “level-by-level management” of the local government of various levels to the “level by level owned” state-owned assets.

Given the clear division of the property right, the distribution power of state-owned assets gains can be further divided between the local government and central government on this basis. Considering the uneven distribution of state-owned assets in different regions, there will also be great difference between different regions in terms of quantity of state-owned assets and gains, which will result in serious imbalance between regions in terms of economic benefit. In the past more than 10 years, various issues, including insufficient social security fund for laid-off workers, and explicit and implicit pension debt of state-owned enterprises, were generated during operation of state-owned assets. The source of funds used to solve such issues is partly the gains of state-owned assets. Therefore, for division of distribution power of gains between the local and central governments, such issues should be taken into consideration. (Jiao, 2005). At present, the distribution power of state-owned assets gains is centralized at the central government, and reform is urgently needed. In fact, the division of distribution power of gains refers actually to the power decentralization and centralization regarding the gains of state-owned assets.

In reality, the “level by level ownership” of the local and central governments is an established fact. From the perspective of increment, according to the “the investor should be the beneficiary” principle, it is a widely accepted phenomenon that the local government owns all gains of the state owned enterprises within its jurisdiction (including the profit and the income tax); from the perspective of stock, at present, the number of mega enterprises directly under the central government is only 103, with most of the enterprises managed and governed by the local government. It is clear that if the “level by level ownership” system is applied to the large-scale state-owned assets, the central government can concentrate on management of the enterprises directly upper the central government, such as the enterprises controlled or owned by the central finance, so as to reduce the management pressure and efforts needed. This way, the goal to maintain and increase the value of state-owned assets can be fully achieved.

Division of distribution power of state-owned assets gains between the local and the central governments requires a secured dominant position of the central government. However, this is not to say the central government should have as much distribution power of state-owned assets gains as possible. In fact, the national conditions of China should be considered, with the distribution power appropriately decentralized. In a level-by-level contributor representative system, the local government with state-owned assets of larger quantities and better quality may attach more importance to the autonomous governance of assets gains within their own regions; on the contrary, the local government with state-owned assets of smaller quantities and more troubled enterprises may require the local government to distribute the state-owned assets gains on an overall level, with regulation and control implemented, in hope that the problem left over by histories in those regions could be solved through transfer payment with the state-owned assets by the central government.

### **Optimal Solution to Division of State-owned Assets Gains between the Local and the Central Governments**

Assume that the “economic men” include participants in economic activities and even political activities. The benefit relationship is the most basic social relationship between the participants. Different participants are different behavior subjects and benefit subjects, and the benefit difference between them and their pursuit for benefit difference are actually the foundation for generation of benefit game (Wu, Wu, & Rui, 2012). Based on the benefit relationship between the central and the local governments given the current fiscal power decentralization system, the benefit difference between the local and the central governments is determined by the dual characteristics of the local government’s benefit. Property right is the sum of a series of rights to a certain quantity of assets. Therefore, in a state-owned assets management system of “unitary ownership and level by level management”, the property relation between the local and the central governments is mainly reflected by the increment, with the stock assets actually posing little impact on the property relation between the two. With establishment of the new state-owned assets management system, adjustment of state-owned assets stock becomes urgent. Restructuring of central enterprises will surely result in change of the property relation between the central and the local governments. The quantity of assets owned by the central and local governments poses a directly impact on the resource control capacity of the two, and might also trigger benefit conflict between the two. In the social economic system, every local benefit requirement is rational in its own way. In addition, the benefit game and benefit division between the local and central governments have always been one of the key factors influencing the policy making.

The central government stands for the overall benefit of the state and the general benefit of the society. The benefit of the central government is the most centralized representation and reflection of the entire state and society. However, the local benefit as represented by the local government boasts dual characteristics. On one hand, the benefit of the central government and the local government is consistent, as they are both seeking development of society and economy, improvement of people’s living standard and promotion of harmonious advancement of the society. On the other hand, the local benefit involves relative independence and rational active ability and decision making ability. The local government can fully utilize the information it obtains to acquire the maximum benefit.

It can be drawn that both the central government and the local government meet the assumption of “economic men”. Specifically, the behavior characteristic of the local government is the calculation and comparison

of cost and benefit, based on which it makes choice; in addition, the benefit relation between the local government and the central government is the core content of the relation between the two. The policy game between the two is built up based on the benefit difference between them.

## EVALUATED MEASUREMENTS

### Assumption of model

In this paper, it is assumed that the local government is in sought for the first-level gains distribution power, and the central government is seeking to maintain a certain level of distribution power centralization of state-owned assets. There is a distribution coefficient for division of state-owned assets gains between them. The Stackelberg game model was chosen from the following dynamic series models, and the distribution coefficient of state-owned assets gains between the local and central governments was introduced, so as to describe the distribution of gains between the two governments. As the state-owned assets mainly exist as enterprises, the distribution of state-owned assets gains will be explained in this paper with enterprises taken as the example.

According to the theory of the firm and the theory of the cost in the western economics, assume the price of a commodity manufactured by an enterprise is  $P$ , the capital input of the enterprise is  $K$ , labor input is  $L$ , and the capital price and labor price on the production elements market are respectively  $P_K$  and  $P_L$ ; specifically,  $R$  and  $C$  respectively stand for the gains and cost of the enterprise.

Then the expression of state-owned assets gains of the enterprise is

$$R(K,L)=P \cdot Q=P \cdot K^\gamma \cdot L^\theta;$$

The cost expression is

$$C(K,L)=K \cdot P_K+L \cdot P_L.$$

The profit of the enterprise is

$$\pi=R(K,L)-C(K,L)=P \cdot K^\gamma \cdot L^\theta-(K \cdot P_K+L \cdot P_L).$$

To facilitate model assumption, as  $K$  and  $L$  are both the elements used by the enterprise to realize the optimal profit of its own, they can be regarded as the positive efforts made by the enterprise toward maximization of the profit; assume the new parameter  $x$  represents the positive efforts made by the enterprise and is used to replace parameters  $K$  and  $L$ .

The above expression can be simplified as

$$\pi=R(x)-C(x)=kx^\gamma-nx.$$

In this expression,  $\gamma$  is the effort elasticity of the benefit,  $0 < \gamma < 1$ , which means benefit is the increasing function of efforts; however, the marginal benefit is diminishing;  $k > 0$  is the coefficient.

### Building and analysis of the model

#### (1) Central government precession

Assume in order for the local government to acquire the first-level state-owned assets gains distribution power, the central government and local government have previously agreed upon the benefit division between the two parties. Furthermore, in the event of gains risk of the state-owned assets owned by the local government, the central government will not compromise or sway. As such, the process of state-owned assets gains division between the two actually is the precession game of the central government. In such a case, in order for the central government to realize maximum benefit of its own, assume the gains division coefficient is  $t$ .

The expression of benefit of the central government in a certain enterprise is

$$\pi_{central} = tkx^\gamma;$$

The expression of benefit of the local government in a certain enterprise is

$$\pi_{local} = (1 - \epsilon)kx^\gamma - nx;$$

According to the backward induction method in the dynamic planning, the benefit maximizing decision making of the latecomer, the local government, in the given benefit condition of the foregoer is analyzed in the first place.

Assuming  $\frac{\partial \pi_{local}}{\partial x} = \gamma(1 - \epsilon)kx^{\gamma-1} - n = 0$ , and then  $x = \left[\frac{\gamma(1-\epsilon)k}{n}\right]^{\frac{1}{1-\epsilon}}$ ; in another words, when  $x = \left[\frac{\gamma(1-\epsilon)k}{n}\right]^{\frac{1}{1-\epsilon}}$ , the maximum benefit of the local government can be realized; secondly, the benefit decision making of the foregoer is analyzed; by plugging  $x = \left[\frac{\gamma(1-\epsilon)k}{n}\right]^{\frac{1}{1-\epsilon}}$  into  $\pi_{central} = \epsilon kx^\gamma$ , we know  $\bar{x} = \frac{1-\gamma}{2-\gamma}$ .

Then the equilibrium solution to the above two expressions is

$$\bar{\epsilon} = \frac{1-\gamma}{2-\gamma}, \bar{x} = \left[\frac{\gamma(1-\epsilon)k}{n}\right]^{\frac{1}{1-\epsilon}}.$$

As such, we can use the social net output to represent the social welfare, and the social welfare function is

$$\Pi = R(x) - C(x) = (kx^\gamma - nx)_{x=\bar{x}}.$$

### Local government procession

According to the characteristics of the local and central finance management system started to be implemented in 1994, there is actually contractual relationship between the two. The benefit division method between the two is specified in terms of revenue distribution, transfer payment from the exchequer and subsidy. The local government tends to carry out competitive game activity to "gain more benefits through undignified ways". Similarly, according to the expectation of the local government, in the event of gains risk of the state-owned assets, the central government will compromise or sway, and will make extra unconditional transfer payment. As such, in the long run, the state-owned assets gains division between the two is no longer the procession game between the local and the central governments, but becomes the procession game process between the local governments. (Ma 1995). Given that the contract used to define the division of state-owned assets between the two in the first stage is only nominal, if the local government takes initiative, the central government will surely follow up. Assume that the central government and the local government agree upon a benefit division coefficient, which is a division ratio  $\epsilon$ .

Then the expression of benefit of the central government in a certain enterprise is

$$\pi_{central} = \epsilon kx^\gamma;$$

And the expression of benefit of the local government in a certain enterprise is

$$\pi_{local} = (1 - \epsilon)kx^\gamma - nx.$$

According to the backward induction method in the dynamic planning, the benefit maximizing decision making of the latecomer, the local government, in the given benefit condition of the foregoer is analyzed in the first place. Then the benefit decision making of the foregoer is analyzed.

The equilibrium solution to the above two expressions is  $\epsilon=1; x=0$ . As such, its social benefit function is

$$\pi = R(x) - C(x) = 0.$$

Apparently, this is a game of the prisoner's dilemma. The Nash equilibrium of the game is also the dominant strategy equilibrium (inexertion, inexertion), which means that the local governments decides to give up for the division ratio  $\epsilon$  set up by the central government. As a result, the benefit of the entire society is damaged.



### Model conclusion

Through comparing the above two models, we can draw that we can only choose the game model with the central government procession. In another word, the behavior of the central government only serves as the decision making environment given for the local government. Or in the game theory terms, the central government takes initiative as a "natural person". For  $\frac{\partial \pi_{local}}{\partial x} = \gamma(1-t)kx^{\gamma-1} - n=0$ , when  $x < \left[ \frac{\gamma(1-t)k}{n} \right]^{\frac{1}{1-t}}$ , the greater the positive efforts the local government makes, the more benefit the local government will obtain and the greater social benefit there will be. As such, with the central government procession, the local government will set the positive effort degree  $X$  within the range of  $x < \left[ \frac{\gamma(1-t)k}{n} \right]^{\frac{1}{1-t}}$  to ensure the initiative of the local government.

## RESULTS AND DISCUSSION

### Policy thinking on distribution of state-owned assets gains between the central and local governments

According to the above analysis, it can be seen that the rationality and optimal design of distribution of state-owned assets gains between the central and local governments are posing a great impact on operation efficiency of development of state-owned enterprises; an effective division system of state-owned assets gains can to a great extent enhance the initiative of the local government to increase fiscal income, and improve the utilization efficiency of social funds and the financing capacity of the local government, thus meeting the fund demand of the local government in terms of utility and infrastructure construction. Considering the problems with the distribution power relation of state-owned assets gains between the local and central governments of China, and the goal of establishing one-level gains distribution power, this paper proposes the following policy suggestions on reasonable distribution of state-owned assets gains between the central and local governments based on the model analysis and the conclusion:

#### (1) Clear definition of the boundary between local and central state-owned assets

We should properly treat the state-owned assets ownership relation between the central and local governments, and regard the local government as the subject of state-owned assets property right. The existing management system of state-owned assets follows the following principle "the state-owned assets are owned by the state and the duties of the contributors are performed level by level". Considering from the perspective of economy, the main purpose of establishing the "level-by-level performance of distributor's duties" system is to allow the superior government (in particular the central government) to be flexible to a certain extent, so as to enhance its macro regulating and controlling capacity. However, this system may probably influence the initiative of the subordinate government to perform the duties as a contributor. Hence, from the perspective of property right and management system efficiency, the reform goal to establish the "level-by-level ownership" of state-owned assets owned by the central and local governments can be achieved if the system and economic conditions allow. In another word, the central government and the local government are two completely equal property right subjects of the state-owned assets in terms of market significance. Furthermore, for the overall architecture and internal relationship of state-owned economy, a sound system and law protection system can be built up based on the "one-level government, one-level property right and one-level credit" principle.

##### i. Supervision scope of state-owned assets of the central government

According to the boundary standard for the property right of the central and local governments, the current situation of the central enterprises and the economic system conditions of China, the industrial distribution of central enterprises and the scope to be brought under control may concentrate on sectors such as energy, basic raw materials, infrastructure construction, postal communication and transportation, machine manufacturing, high and new technology, war industry and special industry.

##### ii. Supervision scope of state-owned assets of the local government

The local government should take charge of other state-owned assets not supervised by the central government under the new system. However, this is not to say that the local government should take charge of all state-owned assets not supervised by the central government. Before determination of the ownership of the local government, the scope of the entire state-owned economy should be defined. (Li, 2014). The assets not included in the scope should be apart from the state-owned economy. The local government should only be responsible for state-owned assets other than the remaining state-owned assets supervised by the central government. Implementation of the “level-by-level ownership” system relies on strategic adjustment of the state-owned economy. It does not involve implementation of a new system for the state-owned assets without strategic adjustment. In fact, before the proper adjustment is finished, promotion of the “level-by-level ownership” management system will result in adjustment pressure on the local government. This is because that the enterprises to be supervised by the central government are definite and small in quantity. Whether the remaining enterprises will quit the state-owned economy is not related to the central government. For the final disposal, we should count on the local government alone. As such, the local government should solve the problem with strategic adjustment of state-owned economy. The state-owned assets within the jurisdiction of the central government after such adjustment belong to the scope of duties to be performed by the local government on behalf of the state as a contributor.

(2) Real implementation of a distribution mechanism of state-owned assets gains with ownership in consistency with the right to gains and financial authorities in consistency with powers

In a state-owned assets management system of “level-by-level ownership”, the central government should perform the duties of the state-owned assets contributor, and enjoys administration power over the state-owned assets within its jurisdiction, including gains, disposal and assessment. (Xin, 2014). At present, the SASAC of the State Council is supervising key central enterprises; for some of the large enterprises and enterprise groups, authorized operation is carried out. Hence, the rights and obligations of the central government regarding the state-owned assets are reflected by further improvement of the management efficiency of state-owned assets; promotion of restructuring of the central enterprises; rationalizing the conversion path between the business assets and non-business assets and value increase and maintenance of the state-owned assets of the central government. As the local government is expected to develop local economy and ensure social stability, the contradiction between its role as a contributor representative and the administrative function is inevitable. Therefore, we should define the duties of the local state-owned assets regulation and supervision authorities; set up internal organizations to ensure the duties of the contributor is better performed; and rationalize the relation between the supervisory authority and related government organs, in an ultimate effort to separate the administrative function of local government and duties of the contributor. This will be helpful for deepening reform of the management system of local state-owned assets, and promoting harmonious development of property relation between the local and central governments.

The most fundamental way to overcome decrease of the economic benefit and repeated construction of state-owned enterprises is to ensure equal property right and responsibilities and equal gains and risks between the central government and the local government. Therefore, we should define clearly the ownership and right to use and related responsibilities of the central government and the local government, and find out the gains receiving form that is in consistency with the property right, as well as the management element ownership of the specific supervisory personnel and managers and the form of element gains; correlate the property right with the responsibilities; and correlate the property right gains with the enterprise benefit. (Zhu, Liu, & Jai, 2016). At the same time, we should regulate the form of state-owned assets gains, and the order and amount of distribution of state-owned assets gains, and define the implementation scope of annual salary system of supervisory management operators of state-owned assets.

The central government should appropriately decentralize the distribution power of the state-owned assets gains to balance the benefit among regions. For regions with satisfactory state-owned assets gains, the gains distribution power can be completely released; the gains distribution coefficient can be used to share an appropriate amount of state-owned assets gains. For regions with less state-owned assets and poorer gains, the central government should take the overall charge of the distribution power of state-owned assets gains. The problems left

over by history such as social insurance fund should be solved through transfer payment of state-owned assets by the central government.

### **The way to construct the guarantee mechanism of technical education funds**

We should construct the guarantee mechanism of funds to ensure the sustainable development of Technical Education. In order to achieve a more equal allocation of technical education resources, it should be the government that increases the input to poor regions according to the economic development of different regions. The state government should establish the financial investment system suited to the scale and training requirements of technical education institutions. (Hillman, Tandberg, & Gross, 2014). The local government should try to improve the technical education colleges' school level, implement the standard of the technical education funding per capita. (Gunn, & Mintrom, 2016)

The government should actively guide social forces to support the development of Technical Education so as to build a government-led, industry enterprises, social groups and individuals to actively participate in the diversification of technical education funding mechanism. (Tandberg, 2010; White & Friendly, 2012). The incentive mechanism of Technical Education funds from the enterprise and the individual donations should be improved. (Nisar, 2015; Renzulli, 2016; Soares, 2003). In particular, the government should introduce preferential policies to encourage enterprises to participate in the training of technical education personnel, and promote the cooperation of schools and enterprises. As such, the government should give preferential policies to the enterprises in the tax area, and adopt a progressive tax model for the enterprises cooperated with schools. And the increased tax from enterprise cooperated with schools should be used as a special fund for technical education. The management system of technical education funds which would be unified and managed by provincial finance should be established. The occupation education funds should not be used for other purposes, so that all levels of government allocated funds occupation education can fully put into the actual construction process of education in Colleges and universities.

### **CONCLUSION AND RECOMMENDATION**

The historical change process of the fiscal administration system since the founding of New China shows that there is "asymmetric power distribution" in fiscal game between the local government and the central government. There is centralization of state power with regard to fiscal revenue and decentralization of power with regard to fiscal expenditure. After implementation of the reform tax system, the "asymmetric power distribution" strengthened the economic and political control ability of the central government, but also widened the economic gap between regions, with the uncertainty of combination of financial authority, power and financial resources becoming even more predominant. This carries great fiscal risks, and is not good for balanced development of economy. After implementation of the tax distribution system, the after-tax state-owned assets gains, as one of the sources of fiscal revenue, have been always reserved by the enterprise rather than being submitted. Furthermore, the central government has been always administering the distribution power of state-owned assets gains in a centralized manner and the distribution of state-owned assets gains between the central government and the local government is still up in the air. According to the foregoer behavior game analysis, the central government should take the initiative to decide the division coefficient, to guarantee the initiative of the local government. For this purpose, the reform of power distribution relation of state-owned assets gains is essential. Furthermore, a distribution system in which the central government and the local government collect the state-owned assets gains based on the ownership and occupation right of state-owned assets respectively should be established. A portion of State-owned enterprise profit used as the investment fund to technical education would alleviate the shortage of the investment in technical education. Across a long period of time the key resources of educational funds and talents are closely coordinated and integrated, so that the overall level of technical education in china will be improved.

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## REFERENCES

- Arcalean, C., & Schiopu, I. (2016). Inequality, opting-out and public education funding. *Social Choice and Welfare*, 46(4), 811-837, DOI: 10.1007/s00355-015-0937-9
- Abramo, G., Cicero, T., & D'Angelo, C. A. (2011). The dangers of performance-based research funding in non-competitive higher education systems. *Scientometrics*, 87(3), 641-654, DOI: 10.1007/s11192-011-0355-4
- Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Redy, V. (2014). Performance Funding for Higher Education: Forms, Origins, Impacts, and Futures. *Annals of the American Academy of Political and Social Science*, 655(1), 163-184, DOI: 10.1177/0002716214541042
- Hillman, N. W., Tandberg, D. A., & Gross, J. P. K. (2014). Performance Funding in Higher Education: Do Financial Incentives Impact College Completions. *Journal of Higher Education*, 85(6), 826-857,
- Gunn, A., & Mintrom, M. (2016). Higher Education Policy Change in Europe: Academic Research Funding and the Impact Agenda. *European Education*, 48(4), 241-257, DOI: 10.1080/10564934.2016.1237703
- Jiao, J.-G. (2005). Relation between the Central Government and Local Government in the State-owned Assets Management System - Historical Evaluation, Practical Operation and Future Choice, *Research on Financial and Economic Problems*, 3, 71-76
- Liao, T.-T. (2010). "Level-by-level Ownership" of State-owned Assets: Theoretical Logic and Path Innovation, *Journal of Fujian Normal University*, 3, 23- 28
- Li, Y.-N. (2014). Chinese Path and Mixed Ownership Economy, *Chinese Market*, 23, 3-11
- Ma, J. (1995). Reform of Fiscal Relation between the Central Government and the Local Government, *Modern China Studies*, 02, 25-28
- Nisar, M. A. (2015). Higher education governance and performance based funding as an ecology of games. *Higher Education*, 69(2), 289-302, DOI: 10.1007/s10734-014-9775-4
- Renzulli, L. A. (2016). The Politics of Performance Funding for Higher Education: Origins, Discontinuations, and Transformations. *Contemporary Sociology-A Journal of Reviews*, 45(5), 596-597, DOI: 10.1177/0094306116664524n
- Rodriguez, G.M. (2013). Power and Agency in Education: Exploring the Pedagogical Dimensions of Funds of Knowledge. *Review of Research in Education*, 37, 87-120, DOI: 10.3102/0091732X12462686
- Soares, J. (2003). Self-interest and public funding of education. *Journal of Public Economics*, 87(3), 703-727, DOI: 10.1016/S0047-2727(01)00183-9
- Tandberg, D.A. (2010). Politics, Interest Groups and State Funding of Public Higher Education. *Research in Higher Education*, 51(5), 416-450, DOI: 10.1007/s11162-010-9164-5
- White, L. A., Friendly, M. (2012). Public Funding, Private Delivery: States, Markets, and Early Childhood Education and Care in Liberal Welfare States - A Comparison of Australia, the UK, Quebec, and New Zealand. *Journal of Comparative Policy Analysis*, 14(4), 292-310, DOI: 10.1080/13876988.2012.699789
- Wu, W.-f., Wu, C.-f., & Rui, O. M. (2012). Ownership and the Value of Political Connections: Evidence from China. *European Financial Management*, 18(4), 695-729

- Xie, L.-J. (2014). Mixed Ownership Economy: System Platform with Triple Meanings. *People's Tribune Research Front*, 6: 49-55
- Xin, G-S. (2014). Several Key Issues to Be Noted for Mixed Ownership Reform of State-owned Enterprises, *Shanghai Lawyer*, 8: 46-47
- Zhu, Q-H., Liu, J-J., & Jai, K-h. (2016). Corporate social responsibility practices and performance improvement among Chinese national state-owned enterprises. *International Journal of production economics*, 171, 417-426, DOI: 10.1016/j.ijpe.2015.08.005
- Zhang, Q-L., Ning, K., & Barnes, R. (2016). A Systematic Literature Review of Funding for Higher Education Institutions in Developed Countries. *Frontiers of Education in China*, 11(4), 519-542, DOI: 10.3868/s110-005-016-0040-8

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