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The Functions and Problems of China's State-Owned Economy

Abstract: At the national symposium on the reform of state-owned enterprises, General Secretary Xi Jinping gave important instructions that state-owned enterprises are important forces in strengthening the country's overall strength and safeguarding the common interests of the people. Therefore, the country must make state-owned enterprises „stronger, better, and bigger”. Huge objections arose in the academic field. This article thoroughly analyzes China's state-owned economy from the perspective of Marx's historical materialism, national productivity, and social development, and clarifies the historical status and role of China's state-owned economy. At the same time, this article comprehensively analyzes the economic significance of making state-owned enterprises „stronger, better, and bigger” from the perspective of total factor productivity, and proposes that since the state-owned economy is backed up by the state, investing in technology research and development has its advantages. However, because the state-owned economy is biased toward administrative instructions, it often lacks efficiency, so if the state-owned economy wants to become „stronger, better, and bigger”, it must undergo reforms in terms of management efficiency.

Keywords: *state-owned economic reform, materialism, productivity*

The concept of free market and privatization has been around ever since the climax of the first state-owned enterprise reform in the mid- and late 1980s, making it seem as if there is only one way of state-owned enterprise reform – marketization and privatization. However, with the second and third state-owned enterprise reform, the strategy of “great state-owned” surfaced. State-owned enterprises had made a glorious turn back and the gradually strengthening of its status cannot be reversed (Heng, 2011). The call for privatization and marketization began to weaken, but it never stopped. Recently, with the introduction of the supply-side structural reform policy, the slogan of making state-owned economy “stronger, better, and bigger” has emerged, and the trend of privatization and marketization broke out once again. Also, the recent industrial policy debate between Zhang Weiyong, an economist

advocating free market in China, and Lin Yifu, an economist for planned economy by the government, has made the path and goal of reforming state-owned enterprises controversial once again. Scholars in favor of marketization believe that making state-owned enterprises „stronger, better, and bigger” is an obvious act of favoritism toward state-owned economy, a retrogression of market-oriented Chinese socialism economic system. Some even consider it the restoration of planned economy. Before undergoing theoretical discussion, this paper must first correct two concepts. The first one is to make state-owned enterprises “stronger, better, and bigger”, which is now the most controversial term among scholars. In fact, the term “stronger, better, and bigger” is without a doubt none other than normal since all economies hope to become “stronger, better, and bigger” instead of “weaker, worse, and smaller”. Second, what must be corrected is the understanding of justifiableness. What is justifiable? It is not the extra care and favoritism. Justifiableness is that the goal of state-owned economies is different from profit-oriented privatization economies and that “strengthening the comprehensive strength of the country and safeguarding the common interests of the people” is a premise. Furthermore, with the General Secretary’s great vision on the current status of China’s economic development, clear tasks and objectives are set for state-owned enterprises, which is to make them “stronger, better, and bigger”, otherwise, the state-owned economy will not only be unable to play the leading role in the public sector of the economy but will also bring negative effects on economic development. Only by clarifying these two points can we better understand the source of justifiableness mentioned by the General Secretary in the national state-owned enterprise reform forum.

I. The Emergence and Historical Status of State-Owned Economy from the Perspective of Historical Materialism and Modern Economics

When discussing the reform of the state-owned economy, learning the history of the state-owned economy is inevitable. That is, understanding the emergence and the historical status of state-owned economy and knowing the fundamental difference between the state-owned economy in a socialist and capitalist country. Only by doing so, can we discern the characteristics and purpose of state-owned economy, clarifying that the reform of the state-owned economy is based on the development of socialist countries and the greater „needs” of the people, rather than the marketization and profit-oriented reforms of capitalism. Historical materialism is a theory about the universal law of the development of human society. It is also a historical view of science. Historical materialism points out that the fundamental cause of all events in history is material productivity, and that the development of social history has its own inherent objective laws. If we apply the theory of Marx’s historical materialism to examine the state-owned economy, we will understand that the emergence of state-owned economy is a historical necessity and a necessity in the development of material productivity.

A. Historical Inevitability of State-Owned Economy

State-owned economy is a historical form of society. When the development of society reaches a certain degree, this form will become an inevitable necessity. This inevitability is a denial to capitalism. When we look back at the economic development of capitalism, we find that the reason for the emergence of state-owned economy in capitalism lies in its basic principles – the pursuit of profit, competition, concentration, and the decline of profit (Burgan and Rambert, 1990).

1. The Pursuit of Profit

The capitalist economy is a kind of market economy, that is to say, the purpose of production is not to satisfy the demands of direct producers. “Goods are produced for selling rather than the producer’s direct consumption” (Marx, 1982). Such selling can only be accomplished by the market. Therefore, the production of capitalism is a kind of commodity production, where the producer sells his product to make a profit rather than serve humanity. Profit has become the motivation of a capitalist economy and the pursuit of profit has also determined its development.

2. Competition

To make a profit, the capitalist must sell his product. “If the capital stops at the final stage of $W'-G'$, the unsold goods that are piled up will block the flow of circulation” (Marx, 2008). Therefore, the capitalists do their best to sell their products. The difficulty of selling products depends on the demand of the market. Therefore, competition between capitalists arises. Every entrepreneur competes with his peers for a possible customer, and every entrepreneur strives to get market share so as to sell his products and exclude his competitors. Competition depending on the pursuit of profit is a rule that every capitalist must accept and obey, that is, to either eliminate his peers or to be defeated by peers of the same industry.

3. Concentration

In order to avoid being eliminated in the process of competition and to sell all of the products, each capitalist must reduce his cost. However, the reduction of costs can only be achieved by expanding production, increasing revenue, and reducing total expenditure. Less total expenditure, increase in revenue, and the expansion of production are only possible through the use of the most modernized equipment by large companies. Therefore, the law of competition forces capitalists to constantly improve their technology and to expand their businesses. As a result, more capital must be invested, forcing the company to expand in size, which, thus, eradicates another group of capitalists, resulting in production concentration. “The more developed the industry, the faster the production concentration of large enterprises. This is one of the most important characteristics of capitalism” (Lenin, 1949).

4. The Decline of Profit

Driven by the principle of competition, the concentration of enterprises occurs. These large enterprises which are formed by concentration, continue to use the improvement of production technology to continuously expand its productivity, resulting in its increase. This increase in productivity is only possible when there is a large increase in the ratio of constant capital to variable capital. The result of the development of capitalism leads to the continuous increase of organic composition in capital, which causes a decrease in profit margins and accumulation of excessive commodity. Thus, accumulation of capital becomes impossible. “The process from commodity to money is a risky jump. If it falls, not only the goods shatter, but also the owners of the goods” (Marx, 1975). Therefore, “profit”, the driving force of capitalism, is also the Achilles heel of capitalism. The pursuit of profit was once the basis for the significant development of capitalism, but the decline in profit rate also led to the fall of capitalism.

B. The Emergence of State-Owned Economy

The competition among the capitalists has prompted everyone among them to continuously improve and expand production so as not to be eliminated. This kind of competition is also true at the national level. If every capitalist country does not follow other countries to develop at the same speed, it will fall behind and there is a possibility of failure. Therefore, in order to safeguard sovereignty, the country must become stronger and more prosperous. The country must constantly develop its production and must not lag behind other countries. Thus, capitalist countries face an insurmountable contradiction: on the one hand, it is crucial to expand production to protect the sovereignty of the state; on the other hand, it is necessary to restrict production to maintain the profit of the capitalists, so the interests of capitalism are not compatible with the interests of the state. Compromise is impossible. Either capitalism continues to exist, and the country falls; or the destruction of capitalism, and the country maintains its development (Burgan and Rambert, 1990). Therefore, with the concentration and monopoly of capital, the contradiction between the state and the capitalists is irreconcilable, as a result, the expansionism of capitalism shifts the competition to the international level. “Capitalists can also export capital to other late developmental countries to increase profits” (Lenin, 1949). It is precisely because the capitalism in each country mobilizes the entire country to support its struggle on the international market, competition becomes a rule among capitalist countries, albeit to a different extent. The concept behind capitalism is competition and expansion. Expansion was originally purely economic, but because it is a common feature in all countries and every country wants to block the path of others, it eventually becomes political, and war becomes the only way to open up this path. This law has been very obvious since the two world wars. During the Second World War, in order to overcome the contradiction between profit and national

demands, the state had to intervene. The state intervention mentioned here refers to the government. For example, the climax of France's first nationalization happened right before the Second World War. At that time, the "Popular Front" was in power. In order to cope with the urgent war environment, while advocating anti-fascism, it also proposed the achievement of social fairness. Therefore, railways and some arsenals were nationalized and state-owned enterprises were established. For the same reason, Charles de Gaulle expanded the scope of French nationalization to basic industrial sectors such as electricity, gas, and coal mines. In addition to the actual connection with war, nationalization can also be the connection of consciousness. Also, for countries that are relatively disadvantaged in terms of military, they may sum up the lessons of humiliation and humiliation learned in history or think about the experiences of being invaded by other countries because they were not strong enough, and rush to make their country richer and strengthen their armies to guard against foreign invasion. Such mentality will also greatly speed up the process of nationalization. For example, in the early days when the People's Republic of China was first founded in 1949. In the beginning, the intervention was an attempt to help with the production of the entire society. The state tried to make the economy work by giving out loans. However, in order to maintain national development, the state had to take action to fight against the production paralysis and social anarchy caused by capitalism. Therefore, it was essential to seize the productive forces so as to conform to an economy that the country generally needs, rather than an economy that only pursues profits. This economy is called a state-owned economy (Burgan & Rambert, 1990).

If we look at the state-owned economy from the perspective of the development of modern economics, the emergence of state-owned economy is also a necessary supplement to the development of market economy.

First, Keynes' macro state intervention policy. After the war, major capitalist countries such as Britain and the United States adopted Keynes' macro state intervention policy in an attempt to regulate the national economy to achieve full employment and to balance and stable economic development. For Keynes's policy to be effective, it must have a corresponding economic foundation. That is to say, the country as the main body of regulation must control the necessary materials, financial resources, and certain methods of control to ensure the government's management authority. The enterprises that were the methods of government control are mainly the central banks such as the Federal Reserve Bank of the United States, the Bank of England and the French Bank of France, etc. Keynes's macro state intervention policy is one of the main reasons for the trend of nationalization.

Second, the planning of the national economy. If the implementation of Keynes's macro state intervention policy is mostly a random intervention of the national economy, then the implementation of the planning of national economy is to try to standardize and stabilize this government influence. For example, the nationalization of *Électricité de France S.A.* (EDF) is part of the government's job to a special planning process. The nationalization of the Paris public transport system is only part of the government's duty to the Paris transporta-

tion plan. Of course, we do not believe that the planning and the resulting nationalization played a decisive role in the development of French economy, but we must admit that after the war, French economic development has achieved remarkable results, and planning is the main reason.

Third, anti-monopoly. In the process of economic development in capitalism, especially after the end of the 19th century and the beginning of the 20th century, monopoly gradually replaced total competition and became dominant in the economy. Historically, monopoly has indeed greatly promoted the development of productive forces. However, it is also undeniable that some large monopoly enterprises control and manipulate the production and sales of certain industrial sectors on purpose, which hinders technological progress, reduces product quality, maintains high monopoly prices, ignores social needs, infringes on consumer interests, etc. All these not only results in economic inefficiency, but also loses the people's support politically. Therefore, the government must do something to fight back. In the anti-monopoly process, the government can take measures such as taxation, price control, production restriction, and support other enterprises, as well as establishing new enterprises or shareholding existing enterprises. Above all, nationalization promotes competition.

Fourth, bear investment risks to make up for the shortcomings of private ownership. Under capitalist conditions, some sectors and industries have longer investment cycles, greater risks, and requires more funds. Private capitalists are either reluctant to invest or have limited funds. Under such circumstances, the bourgeois government comes forward to overcome the limitations of the principle of maximizing the profits of private capitalists. This is the case with the nationalization of the British Rolls-Royce Company.

Fifth, special industrial policies. Typical examples in this regard should be Japan. Generally, the so-called industrial policy mainly considers the structural problems between various sectors of the national economy, or the problems involving the macroscopic field. What's special about Japan's industrial policy is that, first, it directly involves the micro level, and second, in addition to subsidies or other support measures, it nationalizes certain industries or companies and puts them under the protection of the country. After the World War II, science and technology developed rapidly in Japan. Various new products continued to emerge, hitting European and American markets and ranking among the best in developed countries. To a certain extent, Japan has benefited thanks to this special industrial policy.

Sixth, ensure full employment. During the development of capitalism, especially after World War II, science and technology continued to advance and the industrial structure continued to change. Out-dated enterprises closed down, and existing personnel were thrown out of the enterprise. In order to maintain the employment of labors in certain areas, ease conflicts between labor and capital, and maintain social stability, the government has invested in building factories in these areas to absorb structurally unemployed workers, which has accelerated the process of nationalization. Such examples are everywhere in China.

C. The Historical Status of the State-Owned Economy

The emergence of state-owned economy in capitalist countries is a common phenomenon. The essentiality of such state-owned economy is the result of the development of productive forces and historical evolution. Socialism is a historical form of society that derived from the evolution of capitalism, therefore, a transitional phase exists between capitalism and socialism (Burgan & Rambert, 1990). In a socialist system, the goal of production is to meet the demands of the people, instead of the profit-oriented emphasized in a capitalist system. How can a production system that is rooted in profit transform into a system rooted in needs? An economy led by the state is the only method to transform from one system to another. According to American economist Ravi Ramamurti, for the whole society, the state-owned economy is more suitable for doing good things; as for whether it can do things well, that is another question.

Judging from the above-mentioned emergence and historical status of state-owned economy, the development of the state-owned economy is the unavoidable result of historical development and the required development of productive forces. After the pursuit of profit, competition, concentration, and the decline of profit, inescapable contradictions in the development of a country's internal economy and national development will emerge. Such contradiction will directly lead to an evolution toward socialism. The direction of this evolution is clear, but its process may not be so smooth, because before the development of socialist productivity reaches full maturity, there will be a transitional stage. This stage is defined as the primary stage of socialism, which is essentially the stage of construction under state-led socialism. In order to ensure that the transitional phase goes smoothly, the state has to keep the resources in its hands and develop production, because this is conducive to the development of socialist productivity. In other words, as long as the productivity of socialism does not become an evident advantage, there is a need for such transitional phase. Therefore, the state-owned economy is different from the profit-oriented capitalist economy. It is guided by the development of the country and the greater needs of the people. It is the foundation for the transition from capitalist ownership to socialist ownership.

II. Further Discussions on State-Owned Economy from the Perspective of National Productivity

“Should the criteria be productivity or wealth?” That is the question! Throughout the history of human development, whether it is a change in production mode under the so-called speculative historical theory structure that progresses in stages and has gone through the four stages of hunting, nomadic, farming, and industrial and commercial (Sun, 2013); or the classification of the process of economic development at a certain stage when society surrounds industrialization, including traditional society, pre-conditions for take-off, take-off, self-sustaining growth, maturity, high mass consumption, and the pursuit of the quality of life

(Rostow, 2001); or the social form resulting from the connection between productivity and production relations if we understand humans from a broader perspective, be it primitive society, slave society, feudal society, capitalism, and socialism, there are questions we must think about. For example, what is the relationship between social productivity and wealth? Does the improvement in productivity equal to the growth of wealth? Also, does the expansion of wealth prove that productivity is enhancing as well? What are the standards and criteria of the level of social development? Should the criteria be productivity or wealth?

Setting off from their theory of value, Adam Smith and David Ricardo believe that producing lower-cost goods in other countries is better because it is more cost-effective and beneficial to buy them from other countries. Friedrich List opposes to this statement, saying that “the productivity of wealth is much more important than wealth itself”. The classical economics school believes that if capitalist countries only produce goods with lower production costs and purchase other goods from other countries, a reasonable international division of labor will be formed. Such division of labor can only be realized through spontaneous and free competition without the interference of the state. List argues that this theory is a kind of cosmopolitan economics that obliterates the different levels of economic development and historical characteristics of individual countries (List, 1983). List’s idea was proven to be correct, because according to Ricardo’s comparative advantage, even countries with overall backward labor productivity may have comparative advantage, thus entering the international division of labor and earning profits. However, such theory does not think from the perspective of the development of countries with backward productivity. Examining from the perspective of comparative advantage in the long run may bring about the solidification of productivity, and can only be at the low end of the value chain, blocking the progress of national productivity. On the surface, it is earning short-term profit, however, it is in fact hindering the enhancement of productivity. From List’s point of view, the criteria of the development of a country should be the improvement of the country’s productivity, not the increase of profits. However, there is a contradiction between the interests of the state and the interests of private enterprises in this regard. A profit-oriented private ownership economy does not have the responsibility of safeguarding the development of national productivity. The best way to alleviate this contradiction is to have state-owned economy that represents national interest make up for the deficiencies of profit-oriented private ownership economies.

From the history of social production in capitalist countries, the state-owned economy itself derived from a market economy with private ownership as the center. This is the internal contradiction of capitalism, the inevitable result of the outbreak of private production and social production. The emergence of the state-owned economy is to compensate for the inadequacy and contradictions of social production in capitalism. From the developmental history of Western developed countries, no country completely denies the role of state-owned economy, whether it is the United States, Western Europe, or Japan. In an era of insufficient products, social production’s need for products makes the goal of production and the way

to make profits simple, that is, to expand production capacity as much as possible. This production capacity is still different. For the products in people's lives, the market has a natural advantage, because the market is rooted in the big environment of people's lives, and the market has natural sensitivity and information completeness. However, the market is often flawed. The existence of the market is profit-oriented. Without profit, there would be no possibility for the existence of the market. However, with the development of large-scale social production, profits are not eternal. From Adam Smith to Ricardo, the condition of economics is the lack of material and the purpose of economics is to explore how to expand production capacity. Now, material is no longer scarce, and production is no longer urgent. Therefore, the production of modern society is no longer for satisfying the needs of survival, but to satisfy the growing desires of the people. Under this circumstance, the concept of production and economic development from impoverished times are no longer suitable, and realistic problems cannot be solved because the purpose and means of production have changed. Galbraith believes that production in an affluent society is not about increasing products but about employment. This concept is in essence in consistency with Keynes's views. The purpose of the market is not to satisfy employment but to make a profit. When profit no longer exists, the purpose of private production will not change. This will result in a crisis, so the government has to intervene. Public goods and state-owned economy have become the best tools and means (Galbraith, 1965).

III. The Role of China's State-Owned Economy from the Perspective of Social Development

From the perspective of historical development, capitalism will turn into socialism because of its own defects, and this transformation requires a process, which is the primary stage of socialism. At present, China's basic national conditions has not changed. It is still in the long-term primary stage of socialism. Such realistic national condition shows that China has not yet completed the great goal of socialism and is on the road to socialism (Wang, 2007). The gradual emergence of state-owned economy in capitalist countries is a common phenomenon. The necessity of such state-owned economy is the inevitable result of historical evolution. It is the result of the incompatibility between the interests of capitalism and the interests of the state. The state is the only tool to transit from one system to another, that is, to transit from a production system rooted in profit into a system rooted in demand. The state-owned economy is a transitional period between capitalism and socialism. It is a necessary stage on the path to socialism. At present, China is still in the primary stage of socialism and will be so in the long-term. This is a basic determining fact that the stage of state-owned economy cannot be ignored. State-owned economy can be said to be the basis on the road to socialism. If we do otherwise and weaken the power of state-owned economy, this would be a retrogression on the road to socialism, a violation to the law of social development and a disagreement to the law of the development of socialism. The

reform of any socialist economy is to better meet the growing demand of the people and thus achieve socialist production. The production of socialism does not have an eye on profit, but on the needs of the people. Therefore, the goal of state-owned economy is to produce based on the needs of the people, not simply production based on the increase of profit. At present, academia has suggested that the core of state-owned economy reform is institutional reform, that is, to carry out institutional reforms in various areas surrounding the market so as to promote the vitality of state-owned economy. Such a proposal cannot be said to be wrong, because the improvement of the market mechanism promotes the vitality of economic development, which enables enterprises to obtain profit and at the same time benefit the people. But does improving the market mechanism equal to weakening state-owned economy and undermining the role of public ownership? These two cannot be discussed together. The historical position of state-owned economy is not profit-oriented. It shoulders the “greater need” of the people, which is the development and stability of the country. This “need” cannot be found in a simple profit-oriented market. Therefore, market-oriented reform of private ownership cannot be used as a basis for reform, but a means of reform. State-owned economic reform can only be based on how to meet the needs of the people, and this need includes not only the material needs of the people, but also people’s “needs” to enjoy the stability and development of the country as citizens of the country.

From the perspective of productivity development, the emergence of state-owned economy is the inevitable result of the development of productive forces, and the result of the contradiction between the profit-based production of capitalists and the demand-based production of the state in a capitalist country. “The answer is always a general statement like this: when an industrial nation reaches the peak of its history, it has also reached its peak of production” (Marx, 1971). The key for a country to achieve economic growth is to look at its production. If a country has problems with production, the entire system will have problems. But production is also divided into the production for profit and the production that is needed for the country and the people. The emergence of state-owned economy is to make up for the lack of profit-oriented production. The production of atomic energy and the research and development of aerospace technology have always been state-owned since the establishment of the country. These productions are supported by the state. Profit-oriented private economy is incapable of completing this kind of productivity development. If the prosperity of the country is to be achieved, we must proceed from the perspective of productivity. Without productivity as the fundamental basis, development is illusory and has no foundation. Judging from the historical status of the state-owned economy, an economy controlled by the state is the evolution of a profit-oriented economy and the result of enhanced productivity. Therefore, from the perspective of productivity, state-owned economy is undoubtedly the most competitive. Of course, when a new economy is forming, the production relations it adapts to will change. “When the social state corresponding to a certain stage of production has just emerged or is already dying, disorder in production relations will occur naturally, despite the difference in its degree and impact” (Marx, 1971).

Marx's theory makes sense. When a social form shifts to another social form, some degree of disorder in production relations will appear. Such disorder is unavoidable and natural. After learning about state-owned economy, we are often affected by this natural and temporary disorder in production relations, forgetting the result of the development of productive forces and mistaking this temporary phenomenon as a permanent one, which results in illusions and misunderstandings. State-owned economy is often criticized for inefficiency brought about by the various institutions. Such inefficiency is actually the problem of production relations. However, problems in production relations, such as inefficiency, does not necessarily mean low productivity. These two are completely different. If we are familiar with the principles of TFP, we will know that the factors influencing productivity are technological progress and the efficiency it brings. In other words, productivity cannot be measured only from one dimension. Many domestic scholars have criticized state-owned economy and believe that the problem of efficiency is the problem of productivity. Such criticism is very biased. State-owned economy has unique advantages in technological development in terms of its resource allocation and its reliance. Because of this, almost every country hands over top strategic technologies to state-funded economies. However, if an excellent state-owned economy has problems in management efficiency, problems will arise. State-owned economy is often criticized for its inefficiency, including management efficiency, scale efficiency, input efficiency, etc. However, problems in efficiency is just one aspect. We cannot negate the whole thing from just one part of it. This is a fallacy, so what we have to do is effectively enhance the efficiency of state-owned economy, rather than denying its advantage of enhanced productivity and historical role.

From the perspective of China's current economic development, American economic historian and development economics pioneer Walter Whitman Rostow uses historical induction methods and divides economic development into six stages: traditional society, preparation for take-off, take-off, self-sustaining growth, maturity, high mass consumption, and the pursuit of the quality of life (Rostow, 2001). Rostow's six economic growth stage theory is a law summed up in the process of industrialization in Western countries. It mainly reflects the change in stages and a series of strategic choice-making a country has to encounter in the process of economic development. If we look at China's current economic status from Rostow's six-stage economic development theory, China is currently only in the fourth stage of economic development – moving toward maturity, instead of the high mass consumption stage we think we are already in. Because in terms of contribution rate, the high mass consumption stage is an economic development stage based on the service industry with its consumption contribution rate exceeding 70%, while the current consumption contribution rate in China hovers around 50% (see Figure 1). The path toward the stage of maturity in economic development is the beginning of high mass consumption stage. This stage must be based on the high development of the manufacturing industry. This is the law of the industrialization process in the Western developed countries. However, at present, for the manufacturing industry in China, we have not yet taken the lead in the

world. For example, in the global ranking of science and technology strength announced in 2016, China Manufacturing ranked in the fourth echelon, tying with India, Mexico, South Africa, and other developing countries. This shows that our industrial technology strength still lags behind strong Western countries in Europe and America. Our industrial level is still far behind those of developed countries.

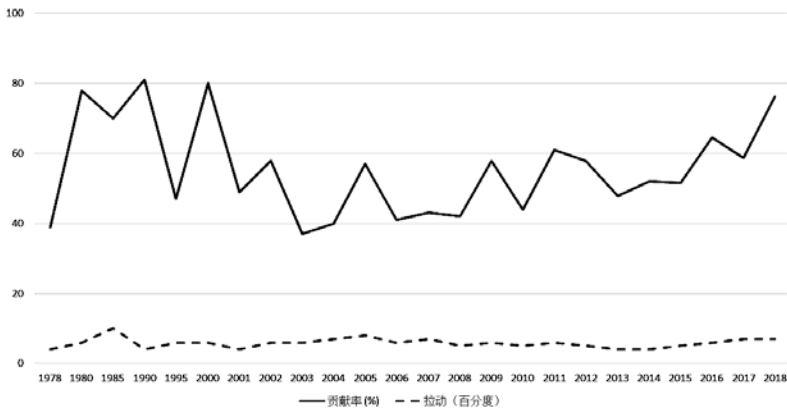


Figure 1. Final Consumption Expenditure
Source: National Statistical Yearbook 2018

In this case, blindly reducing state-owned economy will definitely lead to failure. In an economy that has not yet entered the stage of high mass consumption, the development of manufacturing is the key. Without the foundation of manufacturing, blindly expanding the market to promote consumption will only be counterproductive and investment efficiency will be low. What is even more serious is that, without a good manufacturing system, the development of the country would be without foundation, resulting in an easy fall into the “trap of developing countries”. From within the country, most of the manufacturing development that meets the needs of the development of the country does not come from a profit-oriented private economy, but rather, from the government-guided state-owned economy (Chu, Zhou and Zhou, 2016). From an international perspective, in today’s economic globalization, China’s manufacturing industry faces international competition against strong large-scale Western multinational corporations with large scale and rich experience. Western large multinational corporations control the global economy with strong economic and technological strength. As a latecomer to industrialization, China’s economy faces tremendous pressure and resistance in the upgrading in all fields. In order to enhance China’s comprehensive national strength in the fierce international economic competition, we must have a big group of large-scale enterprises with strong international competitiveness (Chu,

Zhou and Zhou, 2016). At present, other than a very small number of private enterprises, companies capable of contending to the international market and Western large-scale multinational monopoly companies are still mainly large state-owned enterprises in China. Over 70% of the top 500 enterprises in the world are state-owned enterprises in China, including major industries of state productivity, such as mineral, energy, steel, military, etc. therefore, it is irrational to blindly weaken state-owned enterprises (Fortune, 2018).

For example, in 2018, there are 48 central enterprises on the list (as shown in Table 1). However, other than these 48 central enterprises, there is an additional 11 companies funded by the Ministry of Finance and 24 state-owned local enterprises, which means that the total of state-owned enterprises listed on the Global 500 by Fortune is actually 83.

Table 1. The Number of Chinese Enterprises Listed in the Global 500

Year	Number of Nominated Central Enterprises	Total Number of Nominations
2011	38	69
2012	43	79
2013	44	95
2014	47	100
2015	47	106
2016	50	110
2017	48	115
2018	48	120

Source: Fortune, 2018.

However, judging from the data of Chinese enterprise holding corporations, the number and growth rate of China's private enterprises far exceed state-owned enterprises. Therefore, we can see that China sets up state-owned enterprises strictly according to industrial classification. In other words, it chooses industries that meet the growth of productivity and the needs of the country, rather than sharing the market with private enterprises (as shown in Figure 2).

Moreover, Western developed countries will use their power to control and manipulate the world economy, setting rules for the international economic system. Especially when the economic development level of developing countries is close to that of developed countries, they will create various excuses to "kick open the ladder", so that developing countries never reach the height of developed countries (Chang, 2009). Therefore, for a developing country with rapid economic development, it is difficult to break through this shackle simply with private enterprises. Such obstacles and rules can only be broken by vigorously developing state-owned enterprises with strong international strength so as to enable many private enterprises to become international, thus ensuring the stability and sustainable development of the national economy.



Figure 2. Number of Corporate Entities by Holdings
Source: China Statistical Yearbook 2019

IV. The Core Problem Making State-Owned Enterprises “Stronger, Better, and Bigger” Has to Solve.

Before arguing about making state-owned enterprises „stronger, better, and bigger”, we must first understand what „stronger, better, and bigger” means. This paper contends that „stronger, better, and bigger” refers to advanced technology, high efficiency, and large scale, which is also the economic meaning of total factor productivity (TFP). TFP is the ratio of the total output of a system to the actual input of all production factors. The formula goes like this: (TFP) productivity = output/input (Huang, Fu and Huang, 2010). If we analyze the economic principles of total factor productivity, we can figure out the meaning of „stronger, better, and bigger”.

Suppose that the output is Y , input is X , and the productivity $TFP = Y/X$. To make comparisons between the different periods, we suppose that the output of s period and the output of t period is $Y(s)$ and $Y(t)$, and that $TFP(s) = Y_s / X_s$ or $TFP(t) = Y_t / X_t$. Therefore, the output growth Y_t/Y_s from s period to t period can be broken down into $X_t/X_s * [(Y_t/X_t)/(Y_s/X_s)]$, where X_t/X_s is the input growth from s period to t period and that $(Y_t/X_t)/(Y_s/X_s)$ is the TFP growth from s period to t period. From the decomposed formula, we can see that the growth of total output in an economy over a period of time is actually a combination of input growth and TFP growth. This process can be explained in further detail with the following figure (Huang, Fu and Huang, 2010).

From Figure 3, we can see that during a fixed period, the technical boundary of productivity is fixed. This is determined by the level of social productivity during this period.

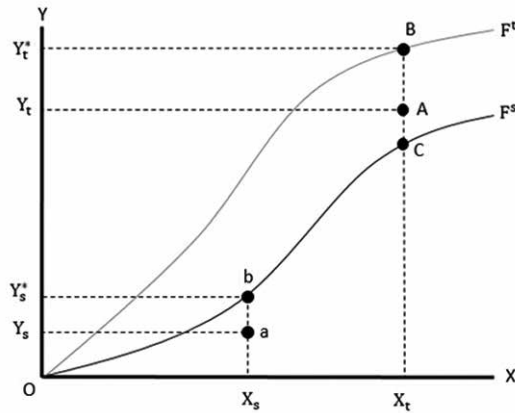


Figure 3. Output-oriented boundaries and efficiency

Therefore, the technical boundary line of F_t during t period in Figure 3 is higher than the technical boundary of F_s during s period, meaning that under the same input, the output of F_t is higher than F_s . If we analyze within the same period, that is, making a comparison on the efficiency under the same technical curve, the productivity is composed of technical boundaries and efficiency. For example, in the case of F_s , the maximum output of input quantity X_s at F_s is at point b , which means that, when there is no efficiency loss, the maximum value of the input of X_s is b . However, in reality, the input of X_s usually cannot reach point b , and can only reach point a . The main reason for this is efficiency loss. The higher the efficiency, the closer the output is to point b . In other words, the lower the efficiency, the farther away X_s is from point b . From this, we can see that in addition to the technical boundary conditions, efficiency is also a key factor in determining the amount of output. Therefore, the principle of total factor productivity is to think comprehensively from the two dimensions of technical boundary and efficiency. If we use the TFP principle to analyze the direction of state-owned economic reforms of making them “stronger, better, and bigger”, we will find that these three points are in full compliance with the law of TFP growth. The essence of making the TFP principle “stronger” is to enhance technical level, which, according to Figure 3, to raise it from F_s to F_t , because only by improving the technical level can the improvement of production capacity be fully reflected. If the technical level is not improved, such as the F_s in Figure 3, even if the efficiency and the scale have been increased, it still cannot break through the bottleneck. Therefore, making it “stronger” is the fundamental basis. The “better and bigger” of the TFP principle is to optimize efficiency, including improving the technical efficiency and scale efficiency brought by technological improvement. When we enhance technical levels (from F_s to F_t in Figure 3), we must also raise the efficiency of the level of high technology. If only the technical level is improved and the efficiency fail to follow up in time (from A , a to B , b in Figure 3), advantages brought by technological

improvement cannot be obtained, sometimes even hindering technical progress and affecting the development of productivity. This is actually what Marx elaborated in his theory of historical materialism. Productivity is the source of all social progress and the enhancement of productivity, without doubt, requires a corresponding production relationship. At the same time, production relations will also have a negative effect on productivity. Reasonable production relations promote the development of productivity, while negative ones do the opposite. Therefore, “stronger, better, and bigger” is an indicator of overall improvement in productivity, among which “stronger” is the foundation. Only with “stronger” can “better and bigger” be possible. In other words, “better and bigger” are necessary requirements. Without “better and bigger”, the value of “stronger” cannot be reflected, and neither can “stronger” be called “stronger”. As a result, “stronger, better, and bigger” is a reasonable general direction, and it is, of course, “justified”.

When it comes to the historical position and future purpose of state-owned enterprises, problems in the current development of state-owned economy should not be overlooked. So far, the greatest problem of state-owned economy is its efficiency. In the beginning of the 21st century, through long-term research, Michael Pettis found out that much of the investment in China did not receive effective distribution (Pettis, 2016). This phenomenon is not caused by individuals, but by the wrong operation in the entire system. He thinks that the entire supplier system in China encourages enterprises to make great scale investments without taking return into consideration, resulting in great wastes and excessive productivity. Among these enterprises, the state-owned ones have the most severe problems. The essence of the difference in investment and return is that the cost efficiency in output is too low. Investments are large, but results are small. Of course, many might think of this problem from a political perspective, thinking that this is the issue of state institutions. Because of its particular political mission, state-owned enterprises receive support from the state, gaining easy access to investments. At the same time, they lack awareness to risks and reckless of results. Therefore, they can “make great scale investments without taking return into consideration”. This paper does not wish to analyze state-owned enterprises from the political system and economic system or discuss it in a super macro stream of consciousness manner, but to give an in-depth thought on the cost efficiency issue in state-owned economy from an economical perspective, and to find out the true cause of it.

If the state-owned economy wants to become „stronger, better, and bigger”, it definitely cannot avoid problems in current development. At present, the biggest problem with the state-owned economy is cost efficiency. The following figure is introduced in order to make a clear explanation on cost efficiency. Suppose there are two inputs (X_1 and X_2) during production and a production boundary $PF_1(y)$, if an economy uses X_1 and X_2 to produce Y , the cost would be $C=W_1X_1+W_2X_2$, with W_1 and W_2 as the price of X_1 and X_2). C^* , C^0 , and C are isocost lines, and $PF_1(y)$ is the isoquant curve. As shown in the figure, the dotted line that runs through point X is the isocost line of a known cost level C . On the same isocost line, all combination points have the same cost C . Obviously, the production of point X does

not have technical efficiency because when ray forms contract into $PF_1(y)$, $x^0 = (\theta x_1, \theta x_2)$, even with the same output, its corresponding cost turns to C^0 , and $C^0 < C$. Therefore, an input-oriented technical efficiency would be $TE_1 = \frac{C^0}{C}$. In terms of geometrics, this is also the ratio of the distance between rays of the origin and point X^0 to the ray between the origin and point X , written as $\left(\frac{OX^0}{OX}\right)$.

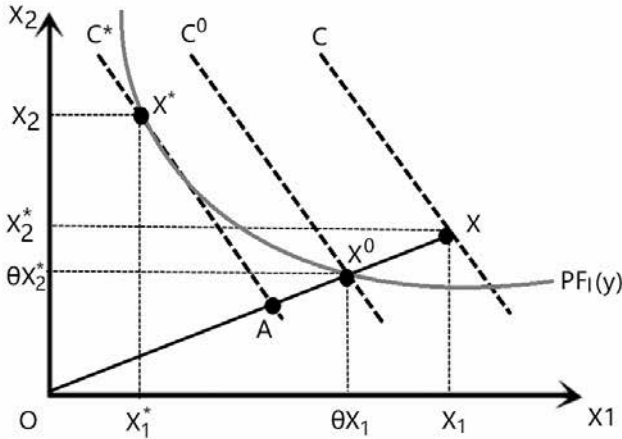


Figure 4. The cost boundary and cost efficiency of input

From the figure, we can also see that when input price $w = (w_1, w_2)$ is known, the input point $x^0 = (\theta x_1, \theta x_2)$ is not the best input point under minimum production cost. The minimum input boundary exists in point $x^* = (x_1^*, x_2^*)$, with C^* as its corresponding cost and that C^* does not exceed C^0 .

$$C^* = w'x^* = w_1x_1^* + w_2x_2^* \leq C^0$$

The corresponding cost C^0 of the isocost line that runs through point x^0 is higher than the corresponding cost C^* of the isocost line that passes through point x^* . Because both $x^0 = (\theta x_1, \theta x_2)$ and $x^* = (x_1^*, x_2^*)$ are on the same boundary $PF_1(y)$ curve, the two combination points has technical efficiency and that $TE_1 = 1$. As a result, these two different combination points have the same technical efficiency, and the difference in cost comes from the inappropriate distribution of input. The input allocative efficiency (AE_1) can be defined with the following ratio,

$$AE_1 = \frac{C^*}{C^0} = \frac{w'x^*}{w'(\theta x)}$$

In terms of geometrics, this is the ratio of the distance of the ray between the origin and point A and the ray between the origin and point x^0 , written as $\left(\frac{OA}{OX^0}\right)$. Therefore, the

measurement of cost efficiency CE includes technical efficiency, TE_i , and allocative efficiency, AE_i , that is,

$$CE = \frac{C^*}{C} = \frac{C^0}{C^0} \times \frac{C^*}{C^0} = TE_i \times AE_i$$

From the figure and formulas, we can see that cost efficiency comes from two places: One is TE_i , that is technical efficiency. This is the issue of efficiency space that appears after the enhancement of techniques. The other comes from AE_i , that is the efficiency of the use of production factors and the essence of this efficiency is management. Both TE_i and AE_i determines cost efficiency. In other words, in terms of enterprises themselves, the reduction of costs should be achieved from two aspects, one is the increase of technical efficiency, and the other is to make reasonable use of production factors. Both are indispensable. The influence of policies or taxes are not discussed here, because they belong to external factors and enterprises cannot make such changes on their own.

The most crucial step in analyzing the cost efficiency problem of state-owned enterprises is to look at state-owned economy as an economy. If we look at it as a product of politics, then analysis would not be necessary and a mere political institution reform or privatization would have solved the problem. However, if we look at state-owned economy as an economy, then this would be a super macro scope because state-owned economy involves many industries with each of them facing completely different demands of technique upgrading and types of production factor. As Yang Rui Long proposed, whether state-owned enterprises are an analysis or a reform, classification is needed. Different state-owned economy encounters different problems in development and reform (Yang, 2015). In terms of TE_i , technical efficiency, some industries have technical advantage in state-owned enterprise, for example, communication, aerospace technology, energy, etc. If a country hopes to enhance its technical level, the strength and intensity of investment from the state is something that private economy can never compare with. This is also true in the technical efficiency of these fields. Because these industries involve national security and operations, technical efficiency dare not slack off. However, the technical efficiency in some state-owned economy are disadvantaged in some fields, for example, non-energy, non-key strategic industries, daily necessities such as food and clothing. This is because these industries are highly sensitive to the flexible demands of the people and private economy has sufficient flexibility. This flexibility may come from competition or from its high sensitivity to the market. Private economy has a much higher desire to enhance technical efficiency. Their goal is to seize the market and gain profit, which naturally hastens the frequency of the improvement in technical efficiency. So far, the major problem in the technical efficiency of contemporary state-owned enterprises in China is not its hardware, because China imports a lot of technical equipment each year. However, there is a serious lack of cultivating excellent high-tech technicians. This results in the inability to enhance technical efficiency. Without corresponding technicians, hardware upgrading cannot reach its required level. The biggest problem in state-owned economy is more in its AE_i , the efficiency of production factors.

In some industries, if you compare the AE_1 of state-owned economy and private economy, you will be shocked by how low the efficiency of state-owned economy is. The key in these problems is management. To be precise, it is the issue of level and awareness. The concept of management level is easy to understand, and survival of the fittest is very normal in a market economy. The level of management directly determines the future development of an enterprise. An excellent management team can deal with production factors such as labor, capital, production materials, etc. to its full potential, which in turn does its best to make marginal revenue equal to marginal costs, leading to the survival, development, and even the strengthening of an enterprise in market competition. On the other hand, management that is not good enough will fall behind in competition, resulting in the reduction of revenue. State-owned economy involves various industries. From an economical perspective, it is essential that we pick the most professional management in every industry from the market. It should have a more political-oriented ability rather than an economical one. Therefore, looking at management level simply from an economical point of view is not enough. Besides, management level is also influenced by management awareness. This is a core problem in state-owned economy that requires our in-depth reflection. The right for the use of production factors in an economy is decided by the head of each department. Leaders of private economies take responsibility for the enterprise. The reasonable use of production factors in an enterprise without doubt determines the survival of an enterprise. However, the head of departments in a state-owned economy make decisions according to the task given to them by superior office, that is, the fundamental purpose of the decision made by a leader of state-owned economy is to accomplish an administrative order. Such decisions are not economic decisions, but rather, an administrative one. If the decision of an economy is not an economic behavior, how can utility rate of production factors enhance according to the laws of economics? Therefore, integrating both aspects of TE_1 and AE_1 , the core problem of state-owned economy is not about its techniques, but focuses on efficiency, especially the utility rate of production factors. If the problem of cost efficiency is not solved, even if state-owned economy has the upper hand in techniques, mainly in investment, the full productivity shown in Figure 4 can never be realized. To briefly sum up the problem of state-owned economy, state-owned economy does not fall behind, but it has low efficiency.

V. Conclusion

Since the beginning of state-owned economy, it has had great influence on the economic development of each country, and this piece of actual history cannot be denied. From the political system and development objectives of China, the future purposes of state-owned economy are significant and should not be neglected. When looking at the problem of state-owned economy, we should not think with rigid uniformity, because the state-owned economy is itself a phenomenon of “economic chaos”, that is, it is a combination of politics

and economics, profit and productivity, wealth growth and economic development. Hence, this reflects that the state-owned economy bears heavy responsibility and tasks. In the forum on state-owned enterprise reforms, General Secretary Xi Jinping made major instructions, saying that the state-owned economy strengthens the comprehensive strength of the state and ensures the mutual benefits of the people. Therefore, it should be made “strong, better, and bigger”. This is not showing partiality and extra care toward state-owned enterprises, but pointing out clearly that state-owned economy is the direction for future development. State-owned enterprises contain the potential to be made “stronger, better, and bigger”, and can bear the great responsibility of improving the entire production of the nation. This is an inborn advantage of state-owned economy that private economy does not have, therefore, how to solve the problem of state-owned economy by making use of its advantage is the most crucial thing. We should not look at state-owned economy from a single aspect and to deny it just because it has low efficiency. If we blindly kill this growing problematic “backbone of socialism” in its cradle, it will inevitably result in great loss in the establishment of socialism in China.

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