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Article

Outward relocation of central state-owned enterprises headquarters: Impact on local tax base and economy

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Abstract: This paper aims to investigate the impact of China's central state-owned enterprises (SOEs) relocation policy from the capital city of Beijing on the economy and local fiscal revenue. We find that these enterprises play a critical role in implementing national strategies, promoting industrial upgrading, and enhancing the competitiveness of the industry chain. At the same time, their relocation has also dispersed the pressure of economic development in Beijing, promoted regional economic coordination and development, and increased local fiscal revenue. However, attention should be paid to the particularity and diversity of local areas in the process of policy formulation to avoid "one-size-fits-all" solutions. Therefore, when formulating corresponding policies, the central government should guide enterprises to handle relocation issues correctly and safeguard the legitimate rights and interests of employees and their families. Meanwhile, local governments should also formulate corresponding support policies to facilitate enterprise settlement. The ultimate goal is to solve problems and contradictions through development and achieve common prosperity. Therefore, we suggest that the government and enterprises work together to bring prosperity to everyone and jointly promote the sustainable development of the Chinese economy.

Keywords: alleviation; coordinated development; relocation of central SOEs; local tax base; industrial transformation

1. Introduction

As a rapidly developing country, China has been implementing a series of major strategies to promote economic prosperity and social progress. Among them, the decongestion of non-core functions in Beijing, the coordinated development of the Beijing-Tianjin-Hebei region, and the construction of the Xiong'an New Area in Hebei have become important directions of the central government's work. As an important force supporting China's economic development, central state-owned enterprises play a critical role in these strategies. Among them, the policy of relocating the headquarters of central state-owned enterprises is one of the important means to achieve these strategies and has been implemented in multiple cities.

However, despite the fact that this policy can promote local economic development, there are still controversies surrounding its implementation and impact on the local tax base. Therefore, this paper aims to explore in-depth the background, theoretical basis, and specific effects of the policy of relocating the headquarters of central state-owned enterprises, as well as the corresponding conclusions and recommendations.

This paper will first introduce the background and interrelationships of national strategies such as decongesting non-core functions in Beijing, the coordinated

development of the Beijing-Tianjin-Hebei region, and the construction of the Xiong'an New Area, and analyze the connection between the policy of relocating the headquarters of central state-owned enterprises and these strategies. Next, the positive impact of the relocation of central state-owned enterprises on the local tax base will be discussed, and the implementation effect of this policy will be illustrated through specific cases. Finally, based on the current situation, this paper will put forward corresponding conclusions and recommendations, targeting the problems and challenges of the policy of relocating the headquarters of central state-owned enterprises.

The purpose of this paper is to conduct an in-depth analysis of the role of the policy of relocating the headquarters of central state-owned enterprises in China's economic development, providing a reference basis for the formulation and implementation of related policies. The authors hope that through the research in this paper, readers can better understand the practical significance and value of the policy of relocating the headquarters of central state-owned enterprises and provide useful insights for promoting the sustainable and stable development of China's economy.

Scientific problem statement: In recent years, the Chinese government has implemented a number of national strategies and policies aimed at alleviating the "big city disease" in Beijing, promoting regional coordinated development, and reducing regional imbalances. One important component of these policies is the relocation of central state-owned enterprise (SOE) headquarters to local areas. However, the impact of this policy on local tax revenue has not been fully studied. Therefore, this paper aims to explore the positive effects of relocating central SOE headquarters to local areas on increasing local tax bases, and evaluate the impact of central SOE relocation on local tax revenue.

Research objectives: The objective of this paper is to investigate whether the relocation of central SOE headquarters to local areas has a positive effect on expanding local tax bases, improving tax revenue, and public service levels, and to evaluate the impact of central SOE relocation on local tax revenue.

Formation of research hypotheses: This study hypothesizes that the relocation of central SOE headquarters to local areas can expand local tax bases, improve tax revenue, and public service levels. At the same time, it is expected that the relocation of these enterprises can promote the formation of new industrial chains, fully utilize local resources, and improve production efficiency and competitiveness. The study also assumes that the departure of central SOEs from Beijing will be more conducive to the transformation of Beijing's industrial chain, resulting in increased urban efficiency. Therefore, this paper will evaluate the actual impact of the policy by comparing tax revenues before and after the relocation of central SOEs.

Description of research methods: This study uses data sources such as government public data and corporate financial reports, selects multiple provinces as samples with annual time spans, compares the difference in local tax revenue before and after the relocation of central SOEs, and explores the mechanisms and pathways through which central SOE relocation affects local tax revenue. Moreover, the study will compare tax payments before and after central SOE relocation to verify the reliability of the research hypothesis. Comparative analysis of data and other methods

will be used to comprehensively analyze the impact of relocating central SOE headquarters to local areas on local tax bases and tax revenues.

Research results: The results of this study indicate that the relocation of central SOE headquarters to local areas can expand local tax bases, improve tax revenue, and public service levels. At the same time, the relocation of these enterprises can promote the formation of new industrial chains, fully utilize local resources, and improve production efficiency and competitiveness. Additionally, the departure of central SOEs from Beijing also has a significant promoting effect on the transformation of Beijing's industrial chain. These research findings provide a reference basis for the government to formulate relevant policies and for enterprises to make decisions.

2. Background of Beijing's non-capital core function relocation

Since the founding of the People's Republic of China in 1949, Beijing, as the capital city, has gone through three important phases of urban planning (Zhao, 2018). The first phase was a 30-year period of building an industrialized socialist capital, during which time the total population of Beijing rapidly grew from 2.092 million in 1949 to 8.715 million in 1978. It became the political center, cultural center, economic center, and industrial base of China. The second phase was a 32-year period of reform and opening up until 2011, during which time emphasis was placed on highlighting Beijing's function as the capital city. In the "Beijing Urban Construction Master Plan" approved in July 1983, the urban nature of Beijing was defined as "the national political and cultural center", no longer mentioning "economic center" or "industrial base", and for the first time, controlling population size was proposed. In the "Beijing Urban Master Plan" approved in 2005, it was proposed to build Beijing into a "livable city". The third phase is the current phase of promoting the relocation of non-capital core functions, which began in 2012 (Zhao, 2018). The problem of "big city syndrome" brought about by China's economic development has attracted national attention. General Secretary Xi Jinping proposed the strategic positioning of Beijing, namely the four centers: the national political center, cultural center, international communication center, and science and technology innovation center. Among them, "economic center" or "industrial center" was not mentioned, but the positioning of Beijing as a "science and technology innovation center" was emphasized.

Based on relevant data regarding Beijing's urban development in the last year of the second phase, 2011, bottlenecks emerged during this phase.

From the perspective of population size, according to statistical data, as of the end of 2011, the permanent population of Beijing reached 20.186 million, an increase of 131.62% compared to 1949 when reform and opening up began. This phenomenon indicates that the population of Beijing has expanded rapidly. In addition, it is noteworthy that according to a survey conducted by Forbes in 2010 on the world's most densely populated cities, the population density of Beijing's urban area reached 15,752 people per square kilometer, ranking 12th in the world. These data show that Beijing's population size has become very large, which not only puts higher demands on urban infrastructure construction, but also makes the handling of social problems more complicated.

From the perspective of air quality, according to a survey of air quality data collected from 1081 cities globally by the World Health Organization in 2011, the average concentration of inhalable particulate matter PM10 (particles with aerodynamic diameter less than or equal to 10 μm) in Beijing ranked 1035th globally, making it one of the cities with the worst air quality in the world. People in Beijing even wear masks to protect themselves from air pollution while traveling on the streets.

From the perspective of transportation, Beijing's Road network density is relatively low, but by 2011, the number of motor vehicles in Beijing exceeded 4.6 million. According to an analysis of dynamic data uploaded by vehicle-mounted GPS devices on over 30,000 taxis in the city, it takes 1.5–2 h to drive from the outskirts of Changping district to the city center during peak commuting hours. The average daily commuting time for Beijing residents exceeds 45 min. According to a global survey on commuting, Beijing's commuting pain index ranked first in the world. Poor traffic conditions also exacerbate negative social effects such as exhaust pollution, noise pollution, and traffic accidents (Creutzig et al., 2011). Research has shown that the negative externalities caused by small cars in Beijing in 2010, including traffic congestion, air pollution, climate change, traffic accidents, noise, and bus speed, resulted in social costs exceeding 90 billion yuan.

From the perspective of housing, according to data released by the Beijing Municipal Bureau of Human Resources and Social Security and the Beijing Municipal Bureau of Statistics in 2012, the average monthly wage of workers in Beijing in 2011 was 56,061 yuan (median replacement wage), while the price of second-hand houses around the fifth ring road in the city reached 27,000 yuan per square meter. Calculated based on an 80-square-meter unit, the house-price-to-income ratio reached 38, far exceeding the internationally recognized reasonable range of 4–6. High housing prices make it impossible for young people to choose to start businesses in Beijing and instead opt for cities with lower startup costs.

The "big city syndrome" characterized by crowded population, poor air quality, congested traffic, and unaffordable housing has become a nightmare for residents of Beijing. This goes against the "livable city" goal in Beijing's overall urban plan. According to international experience, if left unchecked, not only will Beijing become a bottleneck for national development, but it may even develop into slums similar to Cidade Tiradentes in Mexico and Dharavi in Mumbai, India. To alleviate the "big city syndrome" in Beijing and promote regional balanced development, the Chinese Communist Party (CCP) has planned a series of national-level strategies and plans, including "relocating non-capital core functions from Beijing," "promoting coordinated development between Beijing-Tianjin-Hebei," "developing the Xiong'an New Area in Hebei Province," and the "Central Enterprises Headquarters Relocation Plan." The implementation of these strategies is based on agglomeration effect and geographical economic theory.

Agglomeration effect theory suggests that the concentration of economic activities generates positive feedback, attracting more resources and talents to the region, thereby promoting economic growth. However, excessive concentration may also lead to negative effects such as traffic congestion, pollution, and high costs, offsetting the benefits of agglomeration (Pan and Xia, 2014). Therefore, striking a balance between the concentration and dispersion of economic activities is crucial.

Geographical economic theory emphasizes that the geographical location (such as transport costs, natural resources, and human capital) determines the economic development of a region. Different regions have different comparative advantages and disadvantages due to their unique geographical, historical, and cultural backgrounds.

The "relocating non-capital core functions from Beijing" policy refers to moving some non-core functional institutions and industries unrelated to the capital from Beijing to other areas to relieve Beijing's pressure. Specifically, it involves relocating some government administrative agencies, cultural and educational institutions, universities, research institutes, and other non-core functional institutions from Beijing to the Xiong'an New Area, which is about 100 km away from Beijing, to reduce Beijing's population density and traffic pressure, and improve the ecological environment. This is one of the most direct and effective means of alleviating the "big city syndrome" in Beijing. From international experience, building new cities is often used to solve the "big city syndrome," such as the Moscow New Area (Xiao, 2022). Therefore, relocating non-capital core functions can reduce the pressure on Beijing while also promoting the development of surrounding areas, achieving optimal allocation of resources and coordinated development between regions.

In June 2015, the CCP Central Politburo approved the "Planning Outline for the Coordinated Development of the Beijing-Tianjin-Hebei Region" and included the "Beijing-Tianjin-Hebei Regional Coordinated Development" strategy in the Thirteenth Five-Year Plan for China's National Economic and Social Development (2016–2020). The "Beijing-Tianjin-Hebei Regional Coordinated Development" strategy aims to establish a more coordinated urban cluster around Beijing to make up for the lack of resources for its own development and promote the economic development of surrounding areas. This region is located in northern China, adjacent to the Bohai Sea and the Yellow River Basin, east of Shanhaiguan, and west of the Taihang Mountains. The area covers approximately 210,000 square kilometers, with a population of approximately 100 million, including the capital city of Beijing. Tianjin, the second-largest city in northern China, is only 120 kilometers away from Beijing, and Tianjin Port ranks tenth in the world in terms of container throughput. Hebei Province is rich in mineral resources, and its iron ore production accounted for 49% of China's total in 2022. This strategy aims to form a regional coordinated development pattern, enabling Beijing, Tianjin, and Hebei Province to cooperate based on their own advantages, achieve resource sharing and mutual benefit.

The construction of the Xiong'an New Area in Hebei Province is the third important strategy directly aimed at solving the "big city syndrome" problem in Beijing. The Xiong'an New Area is a major strategic deployment proposed by the Chinese government in recent years, following the Shenzhen Special Economic Zone, Shanghai Pudong New Area, and Tianjin Binhai New Area. It is located at the junction of Beijing and Baoding in Hebei Province, with a planned area of approximately 2,000 square kilometers and an expected construction period of about 15 years.

Although Beijing began gradually relocating non-capital core functions and strictly controlling its population size from 2014, resulting in a significant slowdown in the growth rate of its permanent population, the dispersed relocation of non-capital core functions produced little agglomeration effect, and the effects of coordinated development between Beijing, Tianjin, and Hebei were not significant enough, and

the pace of development fell short of expectations. On 1 April 2017, the Chinese government officially announced the establishment of the Xiong'an New Area to address these issues. This new area is expected to become a high-quality development zone, with functions including scientific innovation, green ecology, cultural inheritance, and modern service industries.

The Xiong'an New Area has been designed to relieve Beijing's "big city syndrome" by shifting non-capital core functions, such as administrative offices and colleges, to the new area. This will effectively reduce the population density in Beijing and promote coordinated development between Beijing, Tianjin, and Hebei. In addition, the development of the Xiong'an New Area is also expected to create new economic growth poles, drive regional economic development, and improve people's livelihoods in the region.

Overall, the Xiong'an New Area represents a major effort by the Chinese government to address the challenges posed by urbanization, particularly in Beijing and its surrounding regions. By creating a new, modern urban area that can provide a high quality of life and support sustainable economic growth, the government hopes to reduce the population pressure on Beijing and promote more balanced development across the region. The three national strategies have logical and synergistic relationships, as relocating non-capital core functions from Beijing to Xiong'an New Area and other areas will directly reduce population density, transportation, and housing pressure in Beijing, and reduce environmental pollution, providing better conditions for the coordinated development of the Beijing-Tianjin-Hebei region. These three strategies work together to promote coordinated development and optimize layout in the Beijing-Tianjin-Hebei region, achieving the long-term sustainable development goals of the regional economy.

3. Background of central state-owned enterprises relocation

Central state-owned enterprises in China refer to enterprises whose equity or assets are controlled by the central government of China. Their history can be traced back to the reform and opening-up policy in 1978. Since then, the Chinese government has been promoting the reform of state-owned enterprises, aiming to introduce market competition while maintaining their state-owned attributes, improve management level and operational efficiency, prevent losses of state-owned assets, and strengthen the state-owned economy. Central state-owned enterprises mainly focus on key areas such as energy, transportation, aerospace, communications, finance, etc., providing solid support for the modernization process of China, with political, economic, and social attributes.

Currently, there are 133 central state-owned enterprises in China, among which 98 are industrial enterprises supervised by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), involving important industries that are related to the lifeline of the national economy, such as energy, oil, steel, chemical, power, aerospace, automobile, real estate, etc. There are also 27 financial central enterprises directly or entrusted by the Ministry of Finance, mainly involving banks, insurance, securities, and other fields. In addition, there are four cultural central enterprises and four administrative central enterprises. These

enterprises play a leading and stabilizing role in the development of the Chinese economy and society.

The 98 central state-owned enterprises directly managed by SASAC are considered the narrow definition of central state-owned enterprises. From 2012 to 2022, the total assets of these enterprises increased from RMB 31.4 trillion to RMB 81 trillion, with an average annual growth rate of 11.4%. The total revenue of these enterprises increased from RMB 22.3 trillion to RMB 39.6 trillion, with an average annual growth rate of 6.8%. The total profit increased from RMB 1.3 trillion to RMB 2.6 trillion, with an average annual growth rate of approximately 7.2%. Among the 98 central state-owned enterprises, seven of them have profits exceeding RMB 100 billion and four of them have profits exceeding RMB 500 billion. In 2022, the 98 central enterprises under SASAC's supervision contributed a total of RMB 2.8 trillion in taxes and fees.

Due to the rich political resources of the central government located in Beijing, it is more conducive for corporate executives to communicate with the national decision-making level, reduce corporate decision-making costs, and promote corporate development. As a result, most central state-owned enterprises are concentrated in this city. However, as the Beijing market develops and the city scale continues to expand, the concentration of central state-owned enterprise headquarters in Beijing has caused problems, not only exacerbating the burden of urban operations in Beijing and worsening its "big city syndrome," but also causing limitations on the development of the industrial chain centered around Chinese state-owned enterprises and hindering the development of other regions such as the "Northeast Revitalization," "Tianjin Binhai New Area," "Yangtze River Economic Belt," "Pearl River Delta Economic Belt," "Chengdu-Chongqing Economic Zone," etc. However, central state-owned enterprises are not only economic organizations but also political organizations. Their major actions must serve the development of China's socialist cause, and their decisions must be considered from the perspective of regional coordinated development and common prosperity of the people. Therefore, in the process of national development, attention should also be paid to the regional development imbalance caused by the excessive concentration of large state-owned enterprises in certain areas, and new development models should be explored.

To solve the problem of the concentration of central state-owned enterprise headquarters in Beijing, it is possible to promote regional layout by these enterprises, distribute their headquarters and important businesses to different cities to alleviate the operational burden of Beijing and better serve the economic and social development of various regions. At the same time, it is necessary to strengthen the innovation capability of central state-owned enterprises, continuously explore new fields and markets such as intelligent manufacturing and cloud computing, and improve their competitiveness and influence. Large state-owned enterprises can leverage their advantages in available capital scale, risk resistance, and innovative research and development capabilities compared to private enterprises and collectively-owned enterprises, etc., to promote state-owned capital investment in key areas, establish operating companies, and promote the development of backward regions' economies and the narrowing of regional development imbalances.

In fact, since 2016, the headquarters of eight physical central state-owned enterprises have gradually relocated out of Beijing, are shown in **Table 1**. The Xiong'an New Area in Hebei Province is a key location for relocation because it is only 100 km away from Beijing, causing minimal negative impact on the enterprises, and the policy incentives provided by the planning and construction of the Xiong'an New Area. However, other enterprises focus more on opportunities closer to markets and the synergies of upstream and downstream industries. Shenzhen, a southern coastal economic zone with over 30 years of experience in electronic manufacturing, attracted the China Electronics Corporation (CEC)'s headquarters to relocate there in 2021. The China Three Gorges Corporation's headquarters also returned to Wuhan City, Hubei Province, in 2021, next to its core business area, making it easier to promote the implementation of national major strategies such as the development of the Yangtze River Economic Belt and the rise of the central region. Shanghai, with the largest container throughput in the world and an economic volume surpassing Beijing to become China's economic center, successfully attracted the headquarters of China Electrical Equipment Group and China State Shipbuilding Corporation (CSSC). Since 2017, the headquarters of eight industrial central state-owned enterprises have already completed their relocation. Currently, 68 physical central state-owned enterprise headquarters are registered in Beijing, accounting for 69% of the total. The authors note that many enterprises, such as China National Gold Group, are negotiating plans to move their headquarters out of Beijing with local governments.

Table 1. Tax revenue changes for selected central SOEs after relocation (2016–2021), ¥.

Central state-owned enterprise	Place of arrival	Tax paid in previous year of relocation	Tax paid in subsequent year of relocation	Tax revenue change after relocation	Year of relocation
China State Shipbuilding Corporation Limited (CSSC)	Shanghai	8,316,435,733.79	9,220,626,750.12	10.87%	2021
China Huaneng Group Co., Ltd. (CHNG)	Xiong'an New Area	8,842,610,209.99	7,066,919,572.10	−20.08%	2021
China Three Gorges Corporation (CTG)	Wuhan	20,777,932,885.21	27,173,147,358.03	30.78%	2021
China Electronics Corporation (CEC)	Shenzhen	12,259,539,334.18	11,831,357,292.14	−3.49%	2021
China Ocean Shipping (Group) Company (COSCO)	Shanghai	5,391,051,902.01	6,260,547,963.16	16.13%	2016
China Information and Communication Technologies Group Corporation (CICT)	Wuhan	-	2,472,922,630.81	-	2018
China Electric Equipment Group Co., Ltd (CEEG)	Shanghai	2,531,424,000.36	3,736,610,050.46	47.61%	2021
Sinochem Holdings Corporation	Xiong'an New Area	1,036,450,315.24	1,209,619,282.76	16.71%	2021

Source: China State Shipbuilding Corporation Limited (CSSC) (2022); China Huaneng Group Co., Ltd. (CHNG) (2022); China Three Gorges Corporation (CTG) (2022); China Electronics Corporation (CEC) (2022); China Ocean Shipping (Group) Company (COSCO) (2018); China Information and Communication Technologies Group Corporation (CICT) (2021); China Electric Equipment Group Co., Ltd (CEEG) (2022); Sinochem Holdings Corporation (2022).

In summary, the national strategies proposed by the Central Committee of the Communist Party of China (CPC), including "shedding non-capital functions from Beijing," "coordinated development of the Beijing-Tianjin-Hebei region," "construction of the Xiong'an New Area in Hebei province," and the relocation of central state-owned enterprise headquarters out of Beijing are closely interrelated. These measures aim to alleviate the issue of "urban disease" in Beijing, promote regional coordinated development, and reduce regional development imbalances. With the support of the agglomeration effect and geographical economic theory, the government can allocate resources and advantages more equitably, thus promoting the healthy development of the national economy. However, when implementing these policies, it is necessary to make adjustments and moderate coordination based on specific circumstances, fully consider the differences in resources and development levels as well as actual conditions in different regions. At the same time, it is also essential to strengthen monitoring and evaluation of policy effects, timely revise and improve policy content, and ensure the effectiveness and sustainability of policy implementation.

4. The positive impact of central state-owned enterprise relocation on local tax base increase

China's tax revenue sharing system is a joint taxation and revenue-sharing system between the central and local governments, where taxes are collected and distributed in certain proportions. During the planned economy period, the central government exercised high levels of control over economic activities, while the financial revenues and expenditures of local governments were significantly restricted, resulting in limited financial autonomy for local authorities. With the deepening development of socialism with Chinese characteristics, China's national governance structure has undergone changes, gradually implementing hierarchical management of central and local finances according to the fiscal decentralization theory. Among them, the most influential reform was the tax-sharing system reform of 1994. This reform divided national tax revenue into proportions allocated to the central and local governments, strengthening the financial autonomy and flexibility of local governments to increase their revenue. This also enabled local governments to better provide public services and promote local economic development (Wang et al., 2021).

The tax relationship between the central and local governments needs to reflect the division of labor and cooperation between the central and local governments in promoting national economic and regional development during different stages of development. As the builder of China's tax system, the central government classified enterprise taxes into central taxes, local taxes, and shared taxes according to their tax attribution, with the aim of guaranteeing both the control and fiscal coordination ability of the central government through the tax system, as well as stimulating the administrative vitality of local governments (T. Wang, 2022). This is a process of unity of contradictions. To stimulate the administrative vitality of local governments, it is necessary to adjust the tax system structure that suits different stages of economic development, promote the coordination of local governments' power and fiscal power, and ensure that financial resources correspond to expenditure responsibilities to ensure

stable and sustainable operation of local governments (Bai, 1996). And complete the three basic functions of taxation in public finance, namely organizing revenue, regulating the economy, and maintaining social stability.

According to the viewpoint of the supply-side school in economics, there is a U-shaped relationship between government taxation and tax rates. Increasing tax rates can increase tax revenue, but when the tax rate surpasses a certain limit, further increasing it will suppress enterprise development, raise operating costs, hinder investment, reduce production, lead to a decrease in profits and result in a reduction in tax revenue (Zhang and Wang, 2003). Therefore, appropriate tax rates can promote the development of enterprises and bring optimal tax revenue. Taxation has an automatic adjustment function as an "intrinsic stabilizer" in economic operations, moving in the opposite direction during economic prosperity and decline, suppressing sudden fluctuations in the economy. When large-scale assets and business income of central state-owned enterprises relocate to local areas, this will expand the breadth and stability of the tax base, increasing the source of local government's fiscal revenue without adjusting the tax rate. According to fiscal decentralization theory, local governments must establish their own tax base to raise more financial resources for public product and service expenditures. However, it should be noted that China's value-added tax and income tax, although shared taxes, are more like transfer payments from central finance to local finance in the absence of local tax legislation rights (Zhang, 2017). Local governments cannot predict or anticipate policy changes made by the central government in the tax system, which reduces the stability and expectation of local tax revenue.

The authors examined the tax situation of the central and local governments before and after the relocation of central state-owned enterprise headquarters in 2017. Analysis of tax revenue data published by the State Administration of Taxation from 2005 to 2015 showed that the share of central government tax revenue in total tax revenue remained above 55%, and even reached 65% at one point. However, the share of local government tax revenue in total tax revenue increased continuously, rising from 36% in 2005 to 45% in 2015, with the financial autonomy allocated to local governments by the central government continuously increasing. However, the share of local government tax revenue in local fiscal expenditure has been decreasing since 2005 and had fallen to 42% by 2015. This means that for local governments, the gap between tax revenue and fiscal expenditure as a proportion has not narrowed but expanded despite the increase in the share of tax revenue, thus failing to catch up with the rapid growth in fiscal expenditure.

Starting from 2015, China has significantly increased support for local economies. In 2015, the state approved the "Beijing-Tianjin-Hebei coordinated development plan outline." In 2016, the "Opinions on Promoting the Development of the Yangtze River Economic Belt" was issued. In 2017, the state established the Hebei Xiong'an New Area and signed the "Framework Agreement on Advancing the Construction of the Guangdong-Hong Kong-Macao Greater Bay Area". These regional economic growth plans covered a population of 855 million people, accounting for about 61% of China's population.

Generally speaking, the authority of China's local governments is slightly greater than that of the central government. Considering the principle of finance theory that

power and spending responsibility should be matched, the central government should also enhance the financial capabilities of local governments, especially when promoting large-scale regional economic growth plans. China's central government linked the "relocation of non-capital core functions from Beijing" initiative with the policy of enterprise headquarters relocation, encouraging central state-owned enterprises to move their industrial chains to local areas. This is a theoretical practice of China in implementing the tax-sharing system reform, expanding the local tax base, and utilizing economic geography theory to tap into the agglomeration effect of central state-owned enterprise industrial chains.

Since 2017, over 10 central state-owned enterprises headquartered in Beijing have begun relocating operations. By the end of 2022, eight of these enterprises had completed their moves, resulting in a total asset value of RMB 6.28 trillion, a workforce of 1.0656 million employees, and an annual revenue of RMB 2.55 trillion. These figures indicate that the relocation of these enterprise headquarters has had a significant impact on China's economic development. Firstly, the massive size of these enterprises' assets underscores their importance and role within the Chinese economy. Secondly, the substantial number of employees directly affects social stability and economic growth. Finally, the remarkable annual revenue of these enterprises reflects their competitiveness and influence in the market. Additionally, the relocation of these enterprises signifies their pursuit of better development opportunities and environments. This may be due to the fact that their original locations no longer meet their development requirements or that new geographic locations offer more resources and opportunities (P. Wang, 2019). Whatever the case, the relocation of these enterprises sends a positive signal, demonstrating their active adaptation to market changes and pursuit of development opportunities.

5. The impact of central state-owned enterprises' relocation on local tax revenue from the perspective of local tax revenue

The tax revenue paid by central state-owned enterprises can be divided into two parts, with one part going to the national tax revenue and the other part going to the local tax revenue.

According to data released by the National Bureau of Statistics of China, the total tax revenue in China in 2022 was RMB 16.1 trillion, of which 98 state-owned enterprises in the physical industry sector cumulatively paid RMB 2.8 trillion in taxes throughout the year. The types of taxes paid by central state-owned enterprises include a total of 18 categories, of which 11 kinds of taxes are 100% retained as local tax revenue, reaching RMB 562.8 billion. In addition, 25% of domestic value-added tax, 40% of corporate income tax, and 40% of personal income tax are also shared taxes that will be retained as local tax revenue. **Tables 2** and **3** provide a breakdown of the composition of local and central government taxes related to the activities of central SOEs, respectively. Comprehensive analysis shows that value-added tax and corporate income tax comprise the majority of both local and central taxes related to central SOEs. It is estimated that the central government receives around 60% of the taxes paid by central SOEs, with the remaining 40% going to local governments. Therefore,

the role of central state-owned enterprise taxation in national finance and local finance is relatively balanced.

Table 2. Breakdown of local tax revenue connected with central state-owned enterprises activity in China (billions of yuan, 2022).

No.	Tax types	Share of tax	Proportion of local tax	Tax paid by central SOEs	Local tax revenue
1	Value added tax (VAT)	29.2%	25%	817.60	204.40
2	Corporate income tax	26.2%	40%	733.60	293.44
3	Individual income tax	9.0%	40%	252.00	100.80
4	Land appreciation tax	3.8%	100%	106.40	106.40
5	Deed tax	3.5%	100%	98.00	98.00
6	City maintenance and construction tax	3.0%	100%	84.00	84.00
7	Stamp tax	2.6%	100%	72.80	72.80
8	Building taxes	2.2%	100%	61.60	61.60
9	Resource tax	2.0%	100%	56.00	56.00
10	Land utilization taxes	1.3%	100%	36.40	36.40
11	Tax on the Occupancy of cultivated land	0.8%	100%	22.40	22.40
12	Vehicle and vessel tax; Tobacco tax	0.8%	100%	22.40	22.40
13	Environmental protection tax	0.1%	100%	2.80	2.80
-	Total	-	-	-	1161.44

Source: Calculated by the authors based on data from State-owned Assets Supervision and Administration Commission of the State Council (2023).

Table 3. Breakdown of central government tax revenue from central state-owned enterprises in China (billions of yuan, 2022).

No.	Tax types	Share of tax	Proportion of central tax	Tax paid by central SOEs	Central tax revenue
1	Value added tax (VAT)	29.2%	75%	817.60	613.20
2	Corporate income tax	26.2%	60%	733.60	440.16
3	Consumption tax	10.0%	100%	280.00	280.00
4	Value-added tax and consumption tax on imported goods	12.0%	100%	336.00	336.00
5	Individual income tax	9.0%	60%	252.00	151.20
6	Tariff	1.7%	100%	47.60	47.60
7	Vehicle purchase taxes	1.4%	100%	39.20	39.20
8	Export tax rebate	−9.6%	−100%	−268.80	−268.80
-	Total	-	-	-	1638.56

Source: Calculated by the authors based on data from State-owned Assets Supervision and Administration Commission of the State Council (2023).

According to tax base theory, tax base is the key factor in determining the financial capacity and public service level of local governments. Local governments increase their financial revenue and expenditure by increasing the tax base in their regions, thereby improving the supply of public goods and welfare of residents. Central state-owned enterprises have characteristics such as large asset scale, high operating income, and high profits. After relocating their headquarters to local areas,

they can significantly expand the local tax base, immediately increasing local tax revenue and enhancing local financial strength and public service levels.

By 2022, after five years of practice in relocating non-capital functions from Beijing, according to data released by the Beijing city government, 8 central state-owned enterprises (SOEs) completed their relocation from Beijing, as well as 8 universities, 15 hospitals, and 2085 small and medium-sized manufacturing enterprises. 15 thousand government employees of Beijing had relocated, and 743,100 small and medium-sized manufacturing, wholesale, and retail companies had moved out of Beijing, a decrease of 17.8% compared to the same period in 2016. The city has demolished a total of 230 million square meters of illegal buildings over the past five years. However, the city's GDP increased from 29.9 trillion yuan in 2017 to 41.6 trillion yuan in 2022, with an annual growth rate of 6.89%. The annual average concentration of PM2.5 fell to 33 micrograms per cubic meter, a decrease of 48.3% compared to 2017 (H. Wang, 2022). The United Nations Environment Programme called it the "Beijing Miracle".

Table 4. Important industries that are related to the lifeline of the national economy (2022), ¥.

Industries	Example	Highest tax paid (billions of Yuan)	Lowest tax paid (billions of Yuan)
Energy	CHN Energy Investment Group Co., Ltd	53.93 (Value Added Tax)	1.74 (Building Taxes)
Oil	China National Petroleum Corporation	27.58 (Corporate Income Tax)	0.02 (Building Taxes)
Steel	China Baowu Steel Group Corporation	23.71 (Value Added Tax)	0.81 (Land Utilization Taxes)
Chemical	China National Chemical Engineering Group Corporation Ltd	4.10 (Value Added Tax)	0.001 (Resource Tax)
Electrical power	State Grid Corporation of China	70.51 (Value Added Tax)	0.06 (Resource Tax)
Shipbuilding	China State Shipbuilding Corporation Limited (CSSC)	5.83 (Value Added Tax)	0.001 (Resource Tax)
Aerospace	Aviation Industry Corporation of China, Ltd	18.60 (Value Added Tax)	0.001 (Resource Tax)
Automobile	China Faw Group Co., Ltd	17.19 (Consumption Tax)	0.001 (Resource Tax)
Real estate	Overseas Chinese Town Holdings Company	10.19 (Land Appreciation Tax)	0.14 (Surcharge for Education)
Bank	Industrial and Commercial Bank of China	85.58 (Corporate Income Tax)	0.03 (Surcharge for Education)
Insurance	China Life Insurance (Group) Company	1.15 (Corporate Income Tax)	0.001 (Vehicle and Vessel Tax)

Sources: China National Petroleum Corporation (2022); China Baowu Steel Group Corporation (2022); China National Chemical Engineering Group Corporation Ltd (2022); State Grid Corporation of China (2022); Aviation Industry Corporation of China, Ltd (2022); Overseas Chinese Town Holdings Company (2022); Industrial and Commercial Bank of China (2022); China Life Insurance (Group) Company (2022); State-owned Assets Supervision and Administration Commission of the State Council (2023).

Of the 8 central SOEs that completed their headquarters' relocation from Beijing, 3 have successively moved into Shanghai, the national economic center in the eastern coastal area, 2 have moved to Hebei Xiong'an New District, which is built according to the "millennial plan" in northern China, 2 have moved to Wuhan, the core city of the Yangtze River midstream economic belt, and 1 has moved its headquarters to Shenzhen, a southern coastal city at the forefront of China's reform and opening-up. From a spatial perspective, the locations of the headquarters of these 8 companies cover four directions: east, south, central, and north of China. In the first year after relocation, 6 of the companies showed a positive growth in tax revenue, with growth

rates exceeding 10%. For example, China Electric Equipment Group paid a total of 3.736 billion yuan in taxes for the entire year of 2022, with an annual growth rate of 47.61%; China Three Gorges Corporation paid 27.173 billion yuan in taxes in 2022, with an annual growth rate of 30.78%, indicating that relocation has had a significant positive effect on the operation of central SOEs (Lei and Huang, 2023). **Table 4** showcases leading examples of central SOEs across vital industries and their highest and lowest tax payments. This highlights the diversity of central SOEs and their differentiated tax contributions across sectors critical to China's economy.

According to the theory of new economic geography, the spatial distribution and agglomeration of economic activities are determined by factors such as economies of scale, transportation costs, and demand linkages. After relocation, the transportation costs and demand linkages between various regions and Beijing have changed. Taking China Electric Equipment Group as an example, its main products are power equipment and engineering services. After relocating to Shanghai, the transportation costs between the company's customers in hydroelectric, wind power, and other renewable energy power plants inside and outside the Yangtze River Economic Belt will be reduced, while the transportation costs between the company's traditional customers in coal-fired power plants with high environmental pollution around Beijing will increase, driving the surrounding power generation enterprises to shift towards more environmentally friendly new energy sources. At the same time, the company's demand linkages in Shanghai and its surrounding areas will also be strengthened. These changes enable China Electric Equipment Group to better utilize economies of scale and external economies to improve production efficiency and competitiveness.

Taking Shanghai's urban planning and strategic emerging industries as an example, according to the "Shanghai Urban Master Plan (2017–2035)" approved by the state in 2017, Shanghai will be built into an international shipping center. After 5 years from 2017 to 2021, the "2020 Baltic International Shipping Center Development Index Report" shows that the global ranking of the Shanghai International Shipping Center ranks third. Shanghai has developed seven major shipping service clusters, including Hongqiao-Lingang focusing on port logistics and bonded logistics, and the Wusongkou area has formed a cruise industry chain. Three of the top 4 ship classification societies in the world are located in Shanghai. Among the top 50 shipping companies in the world by capacity, 31 have set up branches or offices in Shanghai. Shipping insurance companies, shipping financial companies, maritime lawyers and other shipping service elements are gathered to form a scale. In June 2021, Shanghai formulated the "Shanghai International Shipping Center Construction 14th Five-Year Plan" according to the overall planning and shipping development level, proposing to accelerate the industrial restructuring and upgrading of the shipping industry. In the same year, the relocation of the headquarters of China State Shipbuilding Corporation to Shanghai, which is highly consistent with the construction goal of Shanghai International Shipping Center, has significantly accelerated the development of both. Since 2021, the company's ship completion volume, new orders and orders on hand have all exceeded 20% of the global market share, making it the world's number one shipbuilding group. The company has entered the world's leading ranks in fields such as very large liquefied natural gas ships, ultra large container ships, dual fuel power equipment for ships, domestic aircraft carriers,

055 10,000-ton missile destroyers, and 10,000-meter-deep submersibles. The shipbuilding industry is a typical high-end manufacturing industry with long industrial and supply chains, high innovation and technology content, and strong industrial drive. This will undoubtedly promote the upstream and downstream industrial development of Shanghai and the Yangtze River Delta region. It can be seen that the microscopic development of China State Shipbuilding Corporation matches the macro strategies of Shanghai's urban positioning and industrial development planning at a high degree, significantly accelerating the development of each other. In contrast, Beijing, as a non-coastal city, obviously neither has a shipping industry cluster, nor has demand for a shipping industry cluster in the future, before the relocation of the headquarters of China State Shipbuilding Corporation.

According to calculations based on the proportion of the retained local tax revenue to the total tax revenue collected by 98 central state-owned enterprises, which is 41.48%, the annual tax revenue retained by local governments after the relocation of the headquarters of three central state-owned enterprises to Shanghai is about RMB 7.971 billion. The annual tax revenue retained by local governments after the relocation of the headquarters of two central state-owned enterprises to Xiong'an New Area in Hebei Province is RMB 821.281 million, and the annual tax revenue retained by local governments after the relocation of the headquarters of two central state-owned enterprises to Wuhan is RMB 12.297 billion, which accounts for 9.92% of Wuhan's tax revenue and has become a new pillar of its fiscal revenue. The relocation of one central state-owned enterprise headquarters to Shenzhen also results in an annual local tax revenue contribution of RMB 4.908 billion. These contributions reflect changes in the scale economy and external economic effects between different regions and Beijing after the relocation.

Take Shanghai as an example. In 2021, it accepted the headquarters of two central state-owned enterprises, China Electrical Equipment Group and China Shipbuilding Corporation. These two companies belong to two strategic emerging industries, namely, power equipment and shipbuilding, respectively. They have formed good complementary and synergistic effects with Shanghai's original industries such as automobile manufacturing, electronic information, and biomedicine, thereby improving Shanghai's industrial agglomeration and innovation capabilities, and thus increasing its tax base and fiscal revenue. **Table 5** presents tax payment data for central SOEs that have relocated from Beijing. The table includes information on the place of arrival, tax paid in the previous year of relocation, tax paid in the subsequent year of relocation, and the tax revenue change after relocation.

Table 5. Change in tax revenue for central SOEs after relocation to different locations (2022), ¥.

Place of arrival	Number of central SOEs	Tax contribution from central SOEs	City-wide tax revenue	Proportion of city-wide tax revenue contributed by Central SOEs
Shanghai	3	7,971,537,120.00	1,906,729,770,000.00	0.42%
Xiong'an New Area	2	3,433,108,317.00	7,090,000,000.00	48.42%
Wuhan	2	12,297,189,831.37	123,960,000,000.00	9.92%
Shenzhen	1	4,907,647,004.78	812,400,000,000.00	0.60%

Source: Calculated by the authors based on data from State-owned Assets Supervision and Administration Commission of the State Council and companies' annual financial reports.

Losing these central state-owned enterprises will have a negative impact on Beijing's economy in the short term. Its economic output and tax revenue will decrease, and the city's agglomeration effect and industrial attraction will also be reduced. It will also lose thousands of highly paid employees with higher consumption capacity, resulting in job losses. However, short-term pain will yield long-term returns. Beijing's industrial direction will focus on two areas: technology and culture. As the city with the largest number of universities and scientific research institutions in China, it is the national education highland and scientific innovation forefront. Companies such as Baidu, Byte Dance, and Cambricon have successfully started their businesses in Beijing and have become giants in the Internet industry. Among the top 50 high-tech and high-growth enterprises in China in 2020, 17 are located in Beijing, ranking first in the country. This also fits with Beijing's positioning as a "center of scientific and technological innovation" among its four central functions. At the same time, as the capital and political and cultural center of China, Beijing has abundant historical and cultural resources and modern cultural industries, as well as strong cultural soft power and influence. After the relocation, Beijing can concentrate more on leveraging its advantages and potential in technology and culture, increasing its tax base and fiscal revenue by improving the level of technological and cultural innovation, and achieving structural adjustment and strategic transformation in its development.

6. Conclusions and recommendations

This study provides an in-depth analysis of the role of central state-owned enterprises (SOEs) in China's economic development. The following key points and recommendations are derived from this study. First, these massive enterprises play a crucial role in implementing national strategies, promoting industrial adjustment, and enhancing industrial competitiveness. Second, relocating the headquarters of central SOEs from Beijing to other regions has a positive impact on relieving Beijing's big city problems and increasing local government tax bases. The relocation of these enterprises has dispersed the pressure on Beijing's economic development, promoted regional economic synergy, and increased local fiscal revenue. At the same time, this is also an opportunity for Beijing to adjust and transform its industries and focus more on technology and culture, which are key areas of development in the new stage of urban development.

However, to successfully implement the relocation plan of central SOEs, it is necessary to take into account the differences in resources and development levels among enterprises, as well as the actual situation of market size, industrial layout, geographical location, labor force population and skill level, education level, logistics convenience, land prices, tax preferences, and other government support policies in different receiving areas. We consider that the sector of the National Economy has a crucial role. For example, energy, steel, chemical, aerospace, shipbuilding contributes the Highest Tax Paid with Value Added Tax. Another sectors—Oil, banks and insurance contributes the Highest Tax Paid with Corporate Income Tax. Two Chinese leaders of the Ranking Fortune Global 500 (2022) State Grid Corporation of China and China National Petroleum Corporation have similar characteristics: both companies have the Highest Revenue and Number of employees, but the Lowest Profit.

But State Grid Corporation of China and China National Petroleum Corporation have just a different contribution to Central and Local Tax Revenue. We concluded also that the Export Tax Rebate for SOEs seems to be the balancing factor between Central and Local Tax Revenue. We founded the fact that China National Petroleum Corporation has a higher revenue than Saudi Aramco, but its profit is less than one-tenth of Saudi Aramco' profit. Therefore, policy makers need to pay attention to the local characteristics and differences and avoid taking a one-size-fits-all approach. Based on this, we suggest that the central government should guide enterprises to handle the relocation issue correctly, reduce the negative impact on employees and their families, and fully protect their legitimate rights and interests. Local governments should also formulate corresponding support policies, protect intellectual property rights, and provide convenience for enterprise settlement.

As most of the relocation of central SOEs was completed in 2021, only data on operating revenue, profits, and local government tax revenue for 2022 are available. Therefore, it is necessary to strengthen monitoring and evaluation of policy effects during policy implementation and make timely adjustments and improvements to ensure the effectiveness and sustainability of policy implementation, thereby achieving the goals of economic development and social stability.

In contrast to the 98 central state-owned enterprises in the real economy sector that have considered relocating their headquarters based on national and regional industrial development strategies and their own resource endowments, 26 out of the 27 centrals financial SOEs have their headquarters located in Beijing. Among the top 5 banks in the 2023 Forbes Global 500, the top 4 are Chinese state-owned banks headquartered in Beijing. Industrial and Commercial Bank of China, ranking 1st among banks and 28th among all global companies on the Forbes 500 list, has its headquarters in Beijing. Compared to Beijing's abundant financial resources, the Guangdong-Hong Kong-Macao Greater Bay Area in southern China, despite being a vital global manufacturing center, lacks sufficient financial resource allocation. The region encompasses 9 city clusters in strategic emerging industries, including internet and telecommunications equipment, high-end medical devices, genes and biopharmaceuticals, industrial motherboards, new materials, new energy vehicles, and quantum information. Policymakers should increase financial services support for the real economy in the Greater Bay Area, using a "visible hand" to optimize the flow of financial resources to the region's strategic emerging industries. The authors suggest relocating the headquarters of the Industrial and Commercial Bank of China to Guangzhou, the national central city in the Greater Bay Area, and then utilize the "invisible hand" of the market to promote the development of the region's strategic emerging industries.

Most importantly, policymakers must prioritize measures that promote regional layout, innovation, and expansion into new markets to ensure that central SOEs continue to make positive contributions to China's economic development. By solving problems and contradictions through development and bringing prosperity to everyone, we can achieve common prosperity.

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