An Analysis of the Relationship between River Engineering and Water Conservancy Construction and State Capacity in the early and middle periods of the Qing Dynasty (A.D. 1644 - A.D. 1820)

Shuhai Zhang

Abstract:

The study in this paper focuses on the relationship between the financial situation related to river engineering and water conservancy and state capacity in the early and middle periods of the Qing Dynasty. There have been some controversies in the study of state capacity in the Qing Dynasty. Taking the governance of the Yongding River in the Kangxi Dynasty and the governance of the Jiangsu and Zhejiang Seawalls in the Yongzheng and Qianlong Dynasties as examples, this paper argues that in the river engineering and water conservancy construction in the early and middle periods of the Qing Dynasty, the expenditures were not only supported by the part of the total amount of regular fiscal income, but by the positive extra revenue other than regular fiscal income. This fact suggests that the state's capacity in the early and middle periods of the Qing Dynasty was recognizable in handling practical affairs and might not be as weak as it appeared.

Keywords: state capacity, the early and middle period of the Qing Dynasty, river engineering, water conservancy, positive extra revenue

1. Literature review

Researches on state capacity[1] The early Qing Dynasty was fruitful, and different scholars have analyzed the state capacity of the Qing Dynasty from their perspectives. As an emerging political science concept, state capacity has been widely used in historical studies to explain different historical developments of countries. Scholars in the "Great Divergence" school[2] , such as Kenneth Pomeranz, hoped to explain the divergence between the Economies of Europe and China in the 18th century A.D. by resorting to the concept of state capacity.

Kenneth Pomeranz[3] was pessimistic about the state capacity of the Qing Dynasty. He argued that the Qing state, although highly centralized in power, lacked a strong ability to draw on local resources. In addition, for various reasons, the Qing government's already insufficient revenues were invested in areas that required a great deal of wealth,ultimately resulting in a huge financial deficit. He also suggested that the root cause of the Qing government's financial difficulties was that it invested a large amount of resources into maintaining and constructing infrastructure. The Qing government, influenced by the Confucian culture on the one hand, adopted a tax policy that did not pursue growth and kept taxes relatively low and, on the other hand, had been in the habit of infrastructure construction. The purpose of these infrastructure constructions was to guarantee the most basic living conditions for residents, to meet the military needs of the state, and to develop the national economy. These infrastructures, such as the Grand Canal and various local water conservancy projects, brought limited benefits, but the maintenance costs brought by the construction increased year by year. Because of the low tax policy that had been adhered to and the absence of a national debt system, these projects caused great pressure on finance. Accompanied by land degradation, resource scarcity, and climatic hazards, the economy of the Qing Dynasty was in serious trouble. Economic problems, in turn, led to serious political problems, and the state capacity of the Qing Dynasty was further restricted because of serious political problems, such as the Opium War and the Taiping Rebellion. Eventually, the Qing Dynasty gradually widened the gap with the West.

1 State capacity: This refers to the ability of the State to translate its consciousness and goals into reality.

2 Great Divergence School: a school of history known for the Great Divergence Theory developed by American historian Kenneth Pomeranz.

3 Kenneth Pomeranz, "Between Benign Neglect and Heroic Failure: State Capacity and the Qing Economy in Broad Outline," translated by Zhoulin, Journal of Research in Chinese Economic History, Vol. 2, 2021, pp. 19- 38.

Agreeing with Kenneth Pomeranz, Peng Kaixiang[4] Thought that the Qing government was too much influenced by the "Original Amount Doctrine"[5]. Peng Kaixiang's understanding of the Original Amount Doctrine was that "'the doctrine does not mean that the state's revenue was fixed at the original amount, but that the fiscal revenue did not show a systematic increase in proportion to the economic growth and financial needs."[6] . In this case, the financial revenue of the Qing government could not meet the increasing expenditure needs, and the financial revenue growth was weak, resulting in financial difficulties, which made it difficult for the state to control social resources. So, the government needed to cooperate with civil organizations and rural gentry to complete various social constructions. But it didn't mean the lack of absolute power of the central government since it was also mixed with institutional and cultural reasons. In short, no matter what accounted for the emergence of the " Original Amount Doctrine, "it would result in difficulties in maintaining the dynamic balance of financial income and expenditure and increasing the financial capacity of the Qing Dynasty.

However, Peng Kaixiang also admitted that fiscal conservatism did not necessarily mean negative public welfare provision. The Qing state still partially succeeded in dealing with social, economic, and environmental challenges and at least prevented itself from falling into the Malthusian trap caused by population growth before the 19th century. The prerequisite for the effective increase in public welfare was the cooperation between the Qing government and the private sector, which utilized extra resources other than regular fiscal revenues to sustain economic and social development, build infrastructure, and safeguard people's well-being.

In short, both scholars discussed the construction and maintenance of infrastructure during the Qing Dynasty. Kenneth Pomeranz argued that the Qing state's capacity was limited, and its financial drawing power was not the same as that of the West during the same period. Still, it invested too much fiscal revenue and other resources into constructing and maintaining infrastructure, ultimately leading to greater financial deficits. Peng Kaixiang argued that due to the lack of state capacity, the Qing central government had to cooperate with localities to meet the country's financial needs by tapping into extra revenues as much as possible.

Of course, some scholars believed that the state capacity of the early Qing Dynasty was not inferior to that of the West during the same period. He Wenkai[7] gave a very high evaluation of the state capacity of the Qing Dynasty. He didn't fully agree with Western scholars' definition of state capacity, which judged the size of a country's state capacity based on its level of socio-economic development or the amount of wartime resources it could call upon. He redefined state capacity from two perspectives: the first was the amount of resources that a state could mobilize in a state of war, and the second, more easily overlooked, was the amount of social well-being that a state could provide domestically, which discussed the state capacity from the aspect of people's livelihood and the influence of the state on the overall social and economic development. In the early Qing Dynasty, the state built many infrastructures, including large-scale water conservancy projects, such as the Beijing-Hangzhou Canal Project, funded by the central government, and local infrastructures, funded by the local government and residents. He Wenkai argued that although the finance of the state was characterized by backwardness and structural rigidity, in the early and middle periods of the Qing Dynasty, i.e., before the Taiping Rebellion, the central government was still able to effectively allocate the finance of each province thanks to a centralized financial system established based on the submitting expense accounts. Provinces were also able to meet the local financial expenditure needs through different methods, such as appropriation donation; it meant the state capacity of the early Qing Dynasty was not weaker than that of Europe in the same period from the point of view of people's livelihood, especially in infrastructure construction. As a result, He Wenkai gave a very high evaluation of the state's financial capacity in the Qing Dynasty.

4 Peng Kaixiang, "The State in the Economic History of the Ming and Qing Dynasties: An Attempt at Dialogue," Studies in Chinese Economic History, Vol. 2, 2021, pp. 91-100.

5 Iwai Shigeki, a Japanese scholar, first put forward the Original Amount Doctrine, which refers to the contradiction between a rigid, positive amount of income that does not correspond to economic expansion and the increasing financial demand with the expansion of social development and the activities of state institutions, as well as the characteristics of the fiscal system that is derived from positive additional finance to make up for this contradiction, " A study of the fiscal system in late imperial China," Jiangsu Publishing House, the first edition, Nov 2020,p272.

6 Peng Kaixiang, "The State in the Economic History of the Ming and Qing Dynasties: An Attempt at Dialogue," Studies in Chinese Economic History, Vol. 2, 2021, 92.

7 He Wenkai, "Fiscal System, Justification of State Power and State Capacity: Re-examining State Capacity in the Qing Dynasty," Studies in Chinese Economic History, Vol. 1, No. 1, 2021, pp. 18-31.

Ni Yuping[8] also gave a high evaluation of the state capacity in the early Qing Dynasty from the financial management perspective in the Qing Dynasty. The Qing government had specialized agencies to manage state finances in different areas. The Ministry of Internal Affairs managed royal expenditures and the Ministry of Revenue managed state expenditures. The fiscal reforms of the Kangxi and Yongzheng dynasties, such as the Kangxi period's "Nurturing the field and never adding taxes" and the Yongzheng period's "Apportioning the land tax based on land size, unifying the surtax on silver" greatly reduced the burden of the peasants who had little land, and increased the supply of labor force. Under these circumstances, the Qing government could collect taxes at a lower rate yearly. After deducting the part of these taxes that were mostly used for military pay, some of these taxes were still widely used to improve people's livelihood by constructing large-scale infrastructures to achieve disaster relief, increase income, and benefit the people.

In summary, it is difficult to draw a definitive conclusion about the state capacity of the early and middle periods of the Qing Dynasty. The state capacity of the Qing Dynasty could not be assessed only by the amount of resources the state could deploy in wartime because in a long period, especially in the early and middle periods of the Qing Dynasty, the state capacities of the East and the West were measured in two different categories, since the early Qing Dynasty did not fall into frequent wars as in Europe. This paper hopes to illustrate, through the analysis of investment in infrastructure in the early and middle periods of the Qing Dynasty, how much the state's financial capacity to centralize and deploy resources in a specific historical activity and the relationship between the corresponding fiscal policies and the state's capacity and to present some useful reflections on this issue.

2. Analysis of the relationship between river engineering and water conservancy construction and state capacity in the early and middle periods of the Qing Dynasty

2.1 Reasons for choosing river engineering and water conservancy construction to analyze state capacity

This paper focuses on analyzing the relationship between constructions in river engineering and water conservancy and state capacity in the early and middle periods of the Qing Dynasty. There are three main reasons for choosing the topic.

Firstly, river engineering and water conservancy are important to national infrastructure. Therefore, the construction of the river water conservancy can reflect the investment in infrastructure and the ability of the Qing State to centralize and dispatch resources. Secondly, the construction of river water conservancy has not only economic significance but also strong social significance. In the early and middle periods of the Qing Dynasty, floods were serious and brought great disasters to agricultural production, people's activities, and even grain transportation. So, the Qing government attached great importance to it. The Kangxi Emperor said, " Since the administration of the government, the revolt of the three feudatories, river affairs, and grain transportation were the three major issues. I had written them down and hung the notes on the palace pillars". [9] For agricultural countries, controlling floods and constructing river works is the government's responsibility. Thirdly, the river engineering issue is complicated and multilevel, involving the state and the connection between the state and the society, which can deeply show the specific situation of the state's capacity.

2.2 Basic situation of fiscal revenue and expenditure in the early and middle periods of the Qing Dynasty

The construction of the river water conservancy required a lot of manpower and material resources. As a national act of great significance, its construction could not be separated from the support of state finance. In the finance of the Qing Dynasty, the funds for river engineering occupied a large proportion. In the early Qing Dynasty, military expenditure accounted for about 70% of state financial expenditure, salaries accounted for about 20%, and the remaining 10% was used for river water conservancy and other expenditures.[10] Raising the cost of river work was an important part of the state finance. Therefore, before discussing the construction of river engineering and water conservancy in the early and middle periods of the Qing Dynasty, it is necessary to briefly introduce the state finance of the Qing Dynasty.

8Ni Yuping "Rethinking the fiscal governance capacity of the Qing dynasty under the vision of "Great Diversion," Studies in Chinese Economic History, Vol. 1, Vol . 1, 2021, pp. 32-39.

9 The Record of the Holy Father of Qing Dynasty, Volume 154 Transcribed by Huang Tianhua, A History of China's Fiscal System, Shanghai People's Publishing House, 2017.10, p. 2197

10 Data from: Chen Feng, "Taxation, Finance and National Livelihood in Traditional Chinese Society," Teaching History, Vol. 18, 2021, p. 12.

In the early and middle periods of the Qing Dynasty, the traditional fiscal model of"make ends meet " was mostly adopted. Still, when the income was not enough, the rulers had to obtain extra revenue to make up for the lack of expenditure by levying taxes, apportionment, and other means, which was also an important feature of the fiscal model of the Qing Dynasty. The financial revenue of the Qing Dynasty was divided into two parts. One was the regular revenue, which mainly included various taxes with fixed items and amounts. In the early and middle periods of the Qing Dynasty, the state mainly collected land tax and salt tax as regular revenue for state finance. In the early and middle periods of the Qing Dynasty, the annual regular revenue could reach 30 million taels to 40 million taels of silver.

The second was extraordinary income, also known as positive extra revenue. Positive extra revenue mainly included tax increases in special periods, donations and services, etc. Analyzed in terms of quantity, the regular revenue occupied the main body of the financial revenue of the Qing Dynasty. In contrast, the positive extra revenue varied from year to year and was often adjusted according to the state's expenditure. From the middle of the Kangxi Dynasty to the JiaQing Dynasty, the Qing government needed an average of about 9 million to 10 million taels of silver per year in extraordinary revenues to make up for the shortfall of the regular fiscal revenues.[11]

Fiscal expenditure in the early and middle periods of the Qing Dynasty also consisted of two parts, i.e., regular and exceptional expenditures. Like the "budget expenditure" mentioned in today's finance, regular expenditure refers to the financial expenditure with fixed items and fixed amounts that could be planned. Exceptional expenditures, equivalent to today's "off-budget expenditures,i.e., temporary expenditures, are financial expenditures with unfixed projects and uncertain amounts that could not be met in advance.

2.3 Expenditure pattern and basic situation of river engineering and water conservancy construction in the early and middle periods of the Qing Dynasty

In the early and middle part of the Qing Dynasty, huge investments were made in the construction of river engineering and water conservancy, and the expenditure on river engineering and water conservancy accounted for about 10% of the total national expenditure at that time. Converted into silver, the average annual cost of the country was 3 million taels to 4 million taels of silver.

11 Chen Hua, "River Workers and Finance in the Qing Dynasty," Studies in Qing History, Vol. 8, 2005, p. 34.

Expenditures for river engineering and water conservancy construction could be roughly divided into two major items: regular and exceptional expenditures.

2.3.1 Regular expenditure of the Qing State

In water conservancy, the Qing Dynasty specially set up the River Silver (silver for annual repair) as the construction of river water conservancy's regular expenditure and set up the post of river governor to manage river water conservancy. Taking the Shunzhi dynasty for example, It was stipulated in the early years of Shunzhi that if the River Silver was more than 300 tael, it would be recorded once it was all used up within a year. The state-appointed the provincial river governor to take the responsibility of monitoring the usage of the funds. The Qing government had strict regulations on using River silver as a regular expenditure. The amount of annual River Silver in each river channel and even in the river section was fixed, and the silver in different river channels was different. For example, the South Canal was repaired with 15,000 taels of silver, while the North Canal was repaired with 19,000 taels of silver.[12]

2.3.2 Exceptional Expenditure of the Qing State

In addition to the regular expenditures, such as the silver for annual repair, other river engineering and water conservancy expenditures are mostly exceptional. Exceptional expenditures are often applied to major projects and other projects. These projects were often arduous tasks on a large scale, and the construction expenditure far exceeded the daily expenditure of annual repair. In the Kangxi Dynasty, the floods became more and more serious, especially in the Yellow River. The severe flooding of the Yellow River caused it to burst its banks almost every year, which seriously affected the state's grain transport and greatly threatened the life and property safety of the residents in the Yellow River basin. So, the government decided to control the Yellow River, and this project was a typical large work. In A.D. 1677, Kangxi appointed Jin Fu, governor of Anhui, as governor of the river and allocated 3 million taels per year to govern the Yellow River. But in fact, the construction of the Yellow River Conservancy may cost more. According to Jin Fu's report, governance of the Yellow River budget could reach 2014.8 million taels of silver.[13]

2.3.3 The basic information of river engineering and water conservancy expenditures in the early and

12 Chen Hua, "River Workers and Finance in the Qing Dynasty," Studies in Qing History, Vol. 8, 2005, p. 36.

13 Huang Tianhua, A History of China's Fiscal System, Shanghai People's Publishing House, 2017.10, p. 2198.

middle periods of the Qing Dynasty

According to the above analysis, the Kangxi Dynasty invested a lot in river engineering and water conservancy construction. The governance of the Yellow River alone cost 20,148 thousand taels of silver, and the actual construction of the river might have consumed more funds. The construction expenditure of river engineering and water conservancy in the Yongzheng and Qianlong Dynasties was extremely large. According to the records of the Great Qing Dynasty, the funds for river workers in Henan, Zhili, Shandong, Jiangsu, and other provinces were about 740,000 taels of silver in Yongzheng, about 970,000 taels of silver in Qianlong, and about 2.42 million taels of silver in Jiaqing.[14] However, this was only the incomplete statistical data of regional river engineering and water conservancy construction expenditure in some areas. In the Jiaqing Dynasty, river engineering and water conservancy expenditures continued to rise. From A.D. 1805 to A.D. 1810, the annual repair of Nanhe alone used an average of 6.8 million taels of silver annually.[15] .Although the fiscal revenue in these years was unknown, assuming the fiscal revenue in A.D. 1812 was 40.13 million taels, the expenditure of the Nanhe project alone would account for 17% of the national revenue. [16]In the fiscal expenditure of the Qing government in the first and middle periods, the proportion of the expenditure on river engineering and water conservancy would exceed 10%. As time went by, the proportion of the expenditure on river engineering and water conservancy would become larger and larger. The figure of 10 % might be derived based on the country's income and expenditure within the regular amount and did not account for part of the country's exceptional expenditure. Therefore, in the early and middle periods of the Qing Dynasty, the regular and exceptional expenditure on river engineering and water conservancy and the source of the above expenditures are the issues mainly elaborated below.

2.3.4 The application of positive extra revenue in the river engineering and water conservancy construction in the first and middle periods of the Qing Dynasty and the source of positive extra revenue

It was common to use the extra revenue to build large river engineering and water conservancies in the early Qing Dynasty, constituting a large part of the expenditure on river engineering and water conservancy. Take repairing the Yongding River in the Kangxi Dynasty as an example. The Yongding River originates in Shanxi Province and flows through mountainous areas in its upper and middle reaches before flowing into the plain in its lower reaches. After the Qing Dynasty's establishment, the flooding of the Yongding River was incessant, seriously affecting the production and life of the country's residents near the capital. In A.D. 1698, the emperor inspected Bazhou, Zhili, Dacheng, and other prefectures and counties and lamented the ongoing harm caused by the flooding of the Yongding River. So Kangxi appointed Yu Chenglong, the governor of the river, and Wang Xin to manage the Yongding River flood. This matter was also recorded in the "Records of Management on Rivers in JiFu " compiled by Qing people, "The Hun River embankment was washed by water throughout the Liao, Jin, Yuan, and Ming dynasties, intermittently lasting for countless ten years, although there had been renovations occasionally. Since A.D. 1698, the Yongding River has been opened, and the barriers on the north and south sides have been built. The old defenses of the previous generations have been abandoned or preserved."[17]. Emperor Kangxi visited the Yongding River in person the following year and proposed further governance matters, proposing to change the river channel into a direct current. Since the ruler himself attached great importance to the management of the Yongding River, the Kangxi Dynasty built more river engineering water conservancy in the Yongding River basin. Therefore, in A.D. 1700, the central government added a river to the south bank of Yongding River as the South River. The original river changed to pass out of Bazhou Liu fork, through Guo Jiuwu and Tianjin into the sea. There were 179 li levees along the road.[18]. In 1701, the dike on the south bank of

14 "Records of Examples of Great Qing Dynasty " vol. 904-906 River Engineering, reproduced in Xu Jianqing, "Public Utility Expenditures in the Early Qing Dynasty," Studies in Chinese Economic History, Vol. 4, 1994, p. 122.

15 Xu Jianqing, "Public Utility Funding in the Pre-Qing Period," Studies in Chinese Economic History, Vol. 4, 1994, p. 122.

16 Xu Jianqing, "Public Utility Funding in the Pre-Qing Period," Studies in Chinese Economic History, Vol. 4, 1994, p. 124.

17 Jiang Xiaocheng, "The Source and Structure of River Engineering Funding in the Pre-Qing Period - Centering on the Governance of the Yongding River in the Kangxi Dynasty," Agricultural Archaeology, Vol. 3, 2020, p. 158.

18 (Qing Dynasty)Wang Shutai.Records about Management Rivers in Jifu Near Capital [M] Renewal of the Siku QuanShu (Volume 849) Shanghai: Shanghai Ancient Books Publishing House, 1996. Transcribed by Jiang Xiaocheng, "The Source and Structure of River Engineering Funding in the Early Qing Dynasty - Centering on the Governance of the Yongding River during the Kangxi Dynasty," Agricultural Archaeology, Vol. 3, 2020, p. 158.

Yongding River was rebuilt, and the original sand dike was changed to a stone dike. At this point, the main work of repairing the Yongding River in the Kangxi Dynasty was declared over, and then the repair of the Yongding River turned into daily maintenance. From the perspective of the source of expenditure, the funding of expenditure of this project mostly relied on the donations of "abandoned officials," and the expenditure within the regular amount used by the government was very small. In addition, in the construction of river engineering, the central government relied heavily on the labor of the Eight Banners and the Ministry of Internal Affairs. Taking the construction of the south Bank embankment as an example, the stone embankment project on the south bank of the Yongding River in A.D. 1701 saved as much as 700,000 taels of silver, equivalent to 78% of the project budget, which was quite surprising[19]. Also, in A.D. 1719, when floods in summer and autumn destroyed the barrier of the Yongding River, the government still used a large amount of extra revenue to repair the dam by "appointing rich households "to pay for the dam's construction on the south bank.

The use of the extra revenue to build large water conservancy projects was widely used not only in the capital region but also in the rich Jiangsu and Zhejiang regions. Take the annual repair of Jiangsu and Zhejiang seawalls, for example. Seawall was a series of DAMS built in China's coastal areas to resist seawater erosion and backflow of the tide. The building materials of seawalls were usually soil, sand, and stone. Small-scale seawall construction work was usually undertaken locally. However, due to the developed economy in Jiangsu and Zhejiang regions, the construction of seawalls not only effectively protected the safety of coastal areas but also promoted the development of the local social economy through land reclamation from the sea. The central government also participated in the construction of seawalls in the early and middle periods of the Qing Dynasty. Part of the appropriation by the state came from establishing special funds, which were regular expenditures. However, when the special funds were insufficient to support the huge construction costs, the state would draw additional money to supplement the insufficient funds, which was an exceptional expenditure. Due to years of war, the Kangxi Dynasty had an insufficient treasury surplus, so the state did not build seawalls in Jiangsu and Zhejiang on a large scale but relied on local governments to build them. In Yongzheng, the National Treasury was gradually filled, and the state set up special funds for the construction of seawalls. With the support of the central government, the construction of seawalls had achieved remarkable results. "In A.D. 1725, Yuyao, Shangyu, and Xiaoshan Shitang shared 98,000 taels of silver in the construction of seawalls."[20]. "In A.D. 1727, Qiantang, Haining, Haiyan, Kuaiji (now in Shaoxing City) and other counties shared 18,185 taels of silver."[21]. The central government presided over the construction of these two seawall, and the expenditure came from the national Treasury. However, as mentioned above, the annual repair funds stipulated by the state were limited and could not support large-scale construction of seawalls. Therefore, in the Qianlong period, it expanded the original annual repair fee based on the original annual repair fee and used additional apportionment of salt taxes, miscellaneous taxes, interest gained by lending to merchants, donations, and other means to supplement the shortage of annual repair fee. "In A.D. 1754, 10,000 taels of silver were allocated each year as the annual repair fee for the seawall, and then the wages of the provincial guard were reduced. A total of 20,000 taels was used to build the seawall."[22] The increase in the allocation of these seawall mainly depended on the government's additional collection of land and salt in Zhejiang and other coastal provinces, as well as the "interest gained by lending to merchants[23]

In addition, in the early and middle periods of the Qing Dynasty, merchants were encouraged to donate to river workers. In the early Qing Dynasty, to make up for the

19 Jiang Xiaocheng, "The Source and Structure of River Engineering Funding in the Pre-Qing Period - Centering on the Governance of the Yongding River in the Kangxi Dynasty," Agricultural Archaeology, Vol.3, 2020, p. 161.

20 (Qing Dynasty) Fang Guancheng et al. and Zha Xiang et al. wrote. : "Record of Imperial Repair of Zhejiang SeaWalls" volume 4, " Architecture in this dynasty. " Liu Dan, Chen Junjing, "On the Funding Sources and Financing Methods of Seawall Construction in Ningshao Area in Qing Dynasty," Chinese Social and Economic History Studies, Vol.4,2021, p50

21 (Qing Dynasty) Fang Guancheng et edited., Zha Xiang et wrote. : "Record of Imperial repair of Zhejiang SeaWalls" volume 4 " Architecture in this dynasty ". Liu Dan, Chen Junjing, "On the Funding Sources and Financing Methods of Seawall Construction in Ningshao Area in Qing Dynasty," Chinese Social and Economic History Studies, Vol.4,2021, p50

22 Xu Jianqing, "Public Utility Funding in the Early Period of Qing Dynasty," Studies in Chinese Economic History, Vol. 4, 1994, p. 120.

23."

Interest gained by lending to merchants referred to the business of the government, which lent silver to merchants and asked for specific interest from the lending.

fiscal gap caused by the shortage of customary income, such as land tax and tariff, the Qing government took various measures to increase additional income, among which donation was the most important.[24] In A.D. 1810, Henan dredged and excavated the Zhanghe and Weihe rivers, which cost more than 8,000 taels. "There were salt merchants from Caozhou County and Changlu, who were divided into six salt groups and required to donate." [25]In the early and middle periods of the Qing Dynasty, the state had great flexibility in the construction of water conservancy projects.

3.Conclusion and reflection

In short, the sources of river engineering and water conservancy expenditures in the Qing Dynasty were diverse. In addition to the fixed annual repair money, the state would also collect extra revenue according to the actual situation of the construction, such as donations from officials and businessmen and levying taxes on the actual amount of money and grain to make up for the lack of positive income. In addition, the state could also enlist the eight banners and ordinary people to build large river and water conservancy projects in the form of service, which would further make up for the construction cost. If the state capacity was defined as the country's ability to absorb resources, then with the infrastructure construction of river engineering and water conservancy as a reference, it was completely possible to gather a large number of financial, human, and material resources in a short period according to the national needs in the early and middle period of the Qing Dynasty. From this point of view, the state capacity of the early Qing Dynasty was relatively strong. This was also in line with He Wenkai's view.[26]

Many scholars, such as Kenneth Pomeranz and Chen Feng[27], believed that the main reason for the weak state capacity of the Qing Dynasty was that they paid more attention to the regular fiscal income. The Confucian thought of low taxes influenced the Qing Dynasty, and did not want to raise the national income level through high taxes. Secondly, as an agricultural country, its tax sources mainly relied on land and salt taxes, making it unlikely to rely on commercial taxes as European countries did, which could raise national taxes with higher tax rates. This kept the level of taxation in the Qing Dynasty very low. Most of the limited tax revenue was spent on the military, official salaries, etc. Only a small part of the revenue was used in some areas that could bring social and economic development, such as infrastructure construction. However, when analyzing state capacity in the early and middle periods of the Qing Dynasty, we should consider the positive additional income. That was Peng Kaixiang's point.[28] In the early Qing Dynasty, the stable political environment and the high authority of rulers allowed the state to withdraw a large number of positive extra revenue through various means. These revenues filled the possible shortfall in fiscal expenditure and supported the social and economic development in the early and middle periods of the Qing Dynasty.

Therefore, if the positive extra revenue is also taken into account, the state capacity in the early and middle periods of the Qing Dynasty is not weak. The Qing state could collect large amounts of resources quickly by imposing various new taxes and encouraging merchants and officials to donate money and provide labor. But when the traditional smallholder economy of men plowing and women weaving became unsustainable for various reasons, the state reached the maximum amount of resources it could extract. With the increasing tension of fiscal revenue and expenditure, more and more "apportionment" was being added, which would inevitably lead to the imbalance of tax burden among various social classes and resulted in the custom of private gift-giving among bureaucrats such as "giving gifts" and "regulating gifts." The inflexible financial system further caused the bureaucracy to be abolished, aggravating the social conflict of interests and expanding the unstable factors. After that, a series of adverse effects made it difficult for the state to obtain more positive and additional wealth. Finally, the Qing Dynasty gradually declined due to internal troubles and foreign aggression. It can be seen that although the state capacity in the early and middle periods of the Qing Dynasty was not weak, this state capacity relying on positive extra revenue could not be sustained for a long time.

24 Shen Xuefeng., Overview of THE Scale and Structure Evolution of Fiscal Expenditure in QING Dynasty, Academic Research. History, No.7, 2004, P98.

25 Xu Jianqing, "Public Utility Funding in the Pre-Qing Period," Studies in Chinese Economic History, Vol. 4, 1994, p. 124.

26 He Wenkai, "Fiscal System, Justification of State Power and State Capacity: Re-examining State Capacity in the Qing Dynasty," Studies in Chinese Economic History, Vol. 1, No. 1, 2021, pp. 18-31.

27 Kenneth Pomeranz, "Between Benign Neglect and Heroic Failure: State Capacity and the Qing Economy in Broad Outline," translated by Zhoulin, Journal of Research in Chinese Economic History, Vol. 2, 2021, pp. 19- 38

28 Peng Kaixiang, "The State in the Economic History of the Ming and Qing Dynasties: An Attempt at Dialogue," Studies in Chinese Economic History, Vol. 2, 2021, 92.