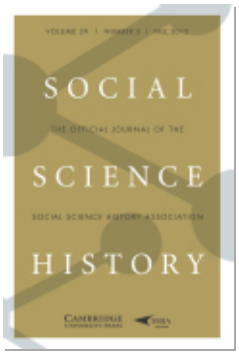
Public Interest and the Financing of Local Water Control in Qing China, 1750–1850



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River works constituted the largest civil expenditure of the Qing state. In theory, the fiscal responsibility of the Qing state only stretched to major conservancy efforts of the Yellow River and Grand Canal, as well as the construction and maintenance of major river banks and irrigation initiatives. Smaller projects were funded and managed by local communities. Nonetheless, this division of funding between the state and local society was blurred in practice. Since the early eighteenth century, the Qing state routinely advanced the monies to pay for major repair and reconstruction of nonstate water-control projects; the communities who benefited from the finished project returned the investment to the state through extra duties on land taxes. This special method for financing hydraulic projects was frequently used in the first half of the nineteenth century when the Qing state experienced increasing fiscal difficulties. By examining the application of this financing method in different places and under varying circumstances between 1750 and 1850, this paper argues that the legitimation of state power through public good provision was the major justification of this policy.

Introduction

The monopoly of legitimate use of coercive force over a delimited territory is the defining feature of the state. Studies of state formation in political science and sociology have often focused upon how and why states developed centralized institutions to extract revenues for fighting wars (Centeno 2002; Downing 1992; Hui 2005; Mann 1986; Tilly 1975, 1992). Nonetheless, this scholarship has paid scant attention to the legitimation of state power through providing public goods by nonviolent means. Recent studies of state formation in early modern Europe have emphasized that, by the late sixteenth century, domestic governance had become at least as important as international war in the institutional development of the state. With the increasing institutionalization of the state apparatus, the early modern state had become an "impersonal political authority" separate from the monarch as a person (Braddick 2000; Skinner 1978).

In this situation, where neither the personal charisma of the monarch nor the divine source of the ruler's power could justify state coercion, state actors turned to general terms such as the public welfare or public interest. Even proabsolutist political thinkers in seventeenth-century Western Europe such as Grotius and Hobbes admitted that the coercive power of the state must be legitimated by its ability to guard the common good or public welfare (Skinner 1989). Although such a legitimation of state power in early modern times was still conceived in paternalist terms—a benevolent patriarch taking care of the welfare of his subjects—it had to be embodied in concrete social

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policies involving the maintenance of social order, poor relief, public works, and even plague prevention (Braddick 2000; Epstein 2006; Slack 1988, 1999). The legitimation of state power through providing public goods is one common theme across early modern and modern states in spite of significant differences in their economic and political institutions.

Historical institutionalists have demonstrated that the capacity of state actors to set policy goals that are not captured by the particular or special interests of certain powerful social groups such as big landlords or industrial monopolists is an indispensable condition for socioeconomic development (Carpenter 2001; Evans 1995; Skocpol 1985). However, state autonomy so defined does not appear robust because one can always identify certain social groups that benefit from major policy decisions.

In contrast to this focus on policy goals, the legitimation of state coercive power by safeguarding the public interest provides a better angle from which to understand state autonomy. State actors can be independent from the particularized interests of social groups or classes either when their policy goals aim to serve the general good of society—economic development or environmental protection, for example—or when the state behaves as an impartial arbitrator in conflicts of interests among different social groups. State autonomy conceived in these general normative terms is even reflected in the attempts of state actors to reframe the interests of special groups as forms of "public interest." In practice, a state autonomy built upon the basis of providing public goods can be attained at different administrative levels of governance, ranging from the local to the central.[1] Nevertheless, in regard to cross-regional conflicts involving the specific interests of various social groups, the central government, which is the ultimate source of the legitimate use of political power within the territory of the state, constitutes an important unit in any examination of state autonomy.

This paper takes up the question of protecting the general welfare as an important means to legitimate state power in a particular early modern state, that of China under the Qing dynasty (1644–1911).[2] For our purposes, the coercive power of the state is embodied especially in collection of taxes. This research employs hydraulic engineering as a lens through which to view the interactions between the state and society surrounding a crucial and widely recognized public good: water control. Contemporary Chinese often used the term *gongli* (public interest) to discuss issues of public good or public interest related to water control, including irrigation and transportation needs and the protection of the livelihoods of the communities affected by hydraulic projects. The period covered in this paper ranges from the mid-eighteenth century to the mid-nineteenth, in which the fiscally resourceful "high Qing" state gradually declined to a weaker state troubled by increasing challenges domestically and internationally.

1. Rast 2007 illustrates the importance of autonomy in American urban politics.

2. For more discussion of the concept of early modern state and its application to eighteenth-China, see He 2013: 7–8.

The existing literature recognizes two major methods in financing hydraulic projects in Qing China. One was state direct investment, which also included loans that the Qing government made to financiers, the annual interest income of which was earmarked specifically for water-control projects. When the central government needed extra revenues for major construction or repair of river works, it could also appeal to sales of nominal titles (*juanna*) and levies of "contributions" (*baoxiao*) upon the privileged merchants who were granted monopolies in selling salt and in doing business with Westerners (Xu 2000). Before the mid-nineteenth century, money raised through this method was also considered a form of official funds and could be used at the discretion of the center.

The other major method was for the affected communities to raise the necessary funds themselves in order to finance and maintain local hydraulic projects. I describe projects funded this way as "people's projects" to capture the essential element of participation by local, nonstate elites. These projects can be divided into two types: those managed autonomously by local people without any official intervention (*minban minxiu*) and those initiated by local people yet supervised by local officials (*guandu minxiu*). In both cases, the funds were raised from people living within the communities benefiting from the water-control project. As for private dikes and polders, the typical form of financing that emerged in the late Ming and continued in the Qing was that of "landlords contributing money, tenants contributing labor" (Hamashima 1982: 169–73; Li 2012). Qing officials explicitly pointed out that it was the responsibility of local communities to raise money in order to maintain these "people's projects" and that these communities should not expect the state to allocate funds for projects that primarily benefited specific localities (Wu 1766). There is some evidence that local people likewise did not consider such projects to be state matters (*guojia gongshi*) but saw them rather as a form of self-protection of local welfare. For example, a memorial of 1766 concerning water control in Hunan Province reported such a view (Changjun 1766).

This paper identifies a third alternative for funding hydraulic projects. This special financing method was to lend official interest-free funds to sponsor water-control efforts that had originally been financed by local communities. The advanced money would be returned by the affected communities through paying extra taxes to the state for a given period of time. This approach seemed to kill two birds with one stone: emergency measures to repair or rebuild nonofficial hydraulic projects that local communities were unable to fund were covered first by official funds, and then the regions that benefited from such works returned the money to the government by paying extra land taxes over a period of time. The collection of these repayments, as with any tax, was backed by state power and not voluntary in the full sense. As this method of financing local water-control projects seemed not to increase the state's regular expenditure while reducing the financial burden of local communities in hydraulic projects, it did not arouse any controversy within the government. Nor did it attract criticism from local people. In the second half of the eighteenth century, it had already become a routine way to finance local hydraulic projects and the central government appears to have routinely approved such requests. Such advances of

official funds could either be requested by local gentry or initiated by officials at provincial or prefectural levels.

In the first half of the nineteenth century, the Qing state experienced serious fiscal difficulties, particularly after 1820 when the scarcity of silver caused prolonged domestic deflation (Lin 2006: chs. 2 and 3). In this situation, the Qing state increasingly encouraged merchants and local residents to donate money for hydraulic projects, even for some that used to be disbursed by official funds (Fan 2006: 956–57). This "privatizing" of infrastructure financing is in line with the received picture of the steadily deteriorating fiscal capacities of the Qing state and its consequent growing withdrawal from involvement in public works during this period.[3] In the same period, however, the lending of official interest-free funds to finance water-control efforts that had originally been financed by local communities was frequently used. This phenomenon, which suggests a growth of state fiscal involvement in smaller-scale infrastructure, has not been addressed in the literature on nineteenth-century state decline.

I argue that a concern for public interest related to water-control projects among Qing officials was crucial to the increasing application of this financing method when communities could not support such infrastructure with locally raised funds. Even more interestingly, the vast majority of such loans in the first half of the nineteenth century that had not been repaid on time were finally cancelled by the Qing state, a fact that many Chinese historians have neglected (Zhang 2010). State lending to local communities had become de facto state spending on hydraulic engineering. The provision of public goods to the legitimate the state helps explain the Qing state's financial support of nonofficial projects of water control even though it possessed limited fiscal capacities.

Water Control and State Responsibility

The term *Qing state* in this paper refers mainly to the territory and governance of "China proper" and excludes frontier areas that had alternate forms of governance such as Mongolia and Tibet. The Qing state so defined was characterized by a unitary judicial and administrative conformity imposed by a centrally coordinated network of political power. Officials were recruited for the most part through an examination system and rotated regularly through bureaucratic positions; administration was hierarchical and bureaucratic, proceeding from the lowest level of the county up through the prefecture and province to Beijing, where not only the emperor resided but also the major supervisory organs of central governance, the Grand Secretariat, the Six Boards, and the Grand Council (*junjichu*).

During the eighteenth and the first half of the nineteenth centuries, the Qing government's central coordination of political power in provinces was carried out through a

3. For a classic study of the decline of the Qing state in the early nineteenth century, see Jones and Kuhn 1978.

highly institutionalized administrative apparatus consisting in practice mainly of the Six Boards and the Grand Council. The former were high-level ministries (Personnel, Revenue, Rites, War, Punishments, and Works); the latter was a kind of privy council—military in its origins but gradually taking on great advisory and policy-making powers over the course of the dynasty.[4] Provincial governors and provincial administration commissioners submitted routine reports (*tiben*, or ordinary memorials) to the Six Boards, but also had the right to directly communicate with the emperor and the Grand Council through "secret" or "palace" memorials (*zouzhe*).

The contents of such memorials, however, were often shared. When provincial governors were asked by the center to comment on policy suggestions, they all had a chance to read the relevant memorial before responding. After receiving their answers, the emperor typically asked ministers of the relevant boards and the members of the Grand Council to deliberate collectively. Major policies were usually adopted after such debates among provincial governors or governor-generals and representatives of the central government.[5] This seems to have been the case in the making of policies related to water control where the public interest (*gongli*) was often in conflict with individual or community interests (*sili*).

Construction and maintenance of dikes, polders, and irrigation ditches were crucial to agricultural production, which was the most important tax base for the Qing state. Moreover, maintenance of the navigation facilities of major rivers was vital to the development of interregional trade, which had thrived in China since the late sixteenth century and constituted one important source of nonagricultural taxes for the Qing state. Indeed, by the eighteenth century, taxes on such trade were the third-largest source of government income, after the land and salt taxes (Deng 2008). The Qing state was deeply involved in various projects of river control, and river work was its biggest item of civilian expenditure. Meanwhile, local gentry had participated actively in both the financing and management of projects of water control in China since the Song dynasty (960–1279). Many Japanese historians have highlighted the crucial importance of autonomous management and financing to water control on the part of local gentry in localities, particularly in the economically developed Lower Yangzi Delta.[6] As the Qing state always encouraged local participation in hydraulic projects, the Wittfogelian model, which claims that the management of large-scale water-control works provided both the motivation and the chance for the bureaucratic state to impose its governance upon Chinese society (Wittfogel 1957), is not convincing.

However, there were limits to the capacity of social actors for self-organization and self-management in water-control projects. Considering the rivalry of interests inherent in using water, such as those between upstream and downstream areas and between people living along the opposite banks of major rivers, Pierre-Étienne Will (1985: 321–23) highlights the importance of the Qing state as an "impartial" guardian of the public interest in arbitrating difficult conflicts. Peter Perdue (1987: 167–70)

4. Bartlett 1991 is the classic study in English of the Grand Council.

5. For examples of the making of fiscal and financial policies in Qing China, see He 2013, especially chapter 4.

6. Elvin 1975 provides a useful review in English of this society-centered Japanese scholarship.

points out that the collective action problem (Olson 1965) often prevented social actors from effectively organizing large-scale water-control projects. Coercion supported by state power was therefore vital to overcome the problem of "free riders" unavoidable in such major efforts. In fact, to supervise the annual maintenance and check the quality of repairs and construction of local projects of water control were major responsibilities for county magistrates and subcounty officials (Schoppa 2002: 131).

The Qing state also tried to safeguard the public interest that went beyond local particularized concerns, though it did not always have the means to do so successfully. In Hunan Province, for example, Perdue has demonstrated that the Qing government well recognized the necessity of prohibiting private dike construction in the Dongting Lake area and private encroachment of the lakeshore so as to prevent the occurrence of man-made calamities, even though it did not possess the necessary institutional ability to attain this goal in practice. It could not, for example, prevent the proliferation of private dikes built by social actors possessed of substantial resources, nor discipline local officials to enforce related state laws to defend the public interest against private profit (Perdue 1987: ch. 7). Such a lack of sufficient capacity to fulfill the state's role in safeguarding the public interest is also revealed in issues of environmental degradation. In 1823, the censor Shi Shiqu pointed out that overplanting along the upper reaches of rivers in southeastern provinces such as Zhejiang and Fujian, as well as in Shanxi and Shaanxi, was the major cause of increasing floods in downstream regions. He proposed that provincial officials should be diligent in forbidding overreclamation and encouraging immigrants to plant more trees for profit. The Daoguang emperor considered these suggestions "completely impractical" (Shi 1823: unpaginated).

Despite its institutional inadequacies, the Qing state endeavored to protect the public welfare by acting as an impartial arbitrator in settling disputes among regions that had conflicts of interests in utilizing water. For example, state officials often intervened when dikes built along the lower reaches of a river caused inundation in its upper reaches, or stepped in to regulate the operation of major sluice gates so as to keep a balance between the demands of irrigation for farming communities and those of navigation for merchants along the same river (Zhang 2010: 102–7). The Qing government also used its coercive power to enforce the legal rights of those who had invested in constructing ditches or canals for irrigation to sell water rights to communities or households that had not participated in the projects (ibid.: 96–97).[7] The widespread recognition of the state as the guardian of the public interest often motivated people (including both common people and gentry) to petition local governments, or even the central government, to adjudicate their disputes. The difficulties faced by state actors in determining local realities and in agreeing on an appropriate response could be formidable; yet without effective state intervention, the parties to such disputes often resolved their conflicts by violent means (Rowe 1988).

One difficulty the state faced in its role as adjudicator was the problem of choosing among legitimate but irreconcilable claims in deciding the public interest. An example

7. For the importance of the enforcement of property rights by the state to the development of irrigation in France, see Rosenthal 1990.

is the case of shipping "tribute grain" (grain paid in kind as a form of tax) from southern provinces to Beijing. The Qing government took the feeding of some 800,000 people in its capital as a paramount responsibility. In consequence, in order to maintain the transportation facilities of the Grand Canal, which connected Beijing with southern China, the irrigation needs of the adjacent areas were often sacrificed and much farmland inundated so as to guarantee sufficient water levels for canal navigation (Ma 2011). Human-produced environmental degradation provides another instance. As noted in the preceding text, Qing officials acknowledged that the overplanting and deforestation of mountainous regions by immigrants was responsible for frequent downstream inundations. However, besides questions of its ability to manage the situation in practice, the state also had to weigh competing claims to well-being, such as the livelihood of the unemployed in a society experiencing steady population growth (Yan 1815).

Water Control and the State Fiscal System

The support of hydraulic projects necessary for agricultural production, commercial transportation, and protection of people from flooding was an important means for the Qing state to legitimate its governance. State investment in hydraulic engineering projects served two related functions. On the one hand, official funds invested in construction and repair of major water-control projects could, by preventing disasters, not only save lives but also significantly reduce the state's burden in providing relief to flood (and consequent famine) victims. Where floods still occurred, repair and reconstruction provided an opportunity for the unemployed in the calamity-stricken areas to earn wages. On the other hand, Qing officials at both the central and provincial levels paid particular attention to water control in order to consolidate the tax base of the state. Before the 1860s, land taxes constituted the major part of annual government income. Nonetheless, the Qing state's actual ability to invest in water control was constrained by its fiscal system.

The fiscal institution of the Qing state became politically highly centralized after the fiscal reforms of the Yongzheng emperor (r. 1723–35). The Board of Revenue supervised and audited the annual accounts of both the collections and expenditures of provincial governments (Chen 2000; Zelin 1992). Although the center retained a large proportion of its income in treasuries at the provincial or even prefectural levels in strategic locations, the spending of these funds was at the discretion of the center, and local officials were not permitted to disburse these funds without central sanction (Peng 1992; Wang 1973: 12–18). In order to run this decentralized fiscal system properly, the Board of Revenue set fixed quotas for both tax collection and official spending in each province. For any expenditure more than 500 taels[8] of silver, provincial officials had to receive central approval in advance (Iwai 1983: 338–40).

8. A tael, or "Chinese ounce" (*liang*) of unminted silver, was a form of currency and unit of account throughout the Qing dynasty.

This rigid quota-based fiscal institution did not possess the ability to easily increase revenue in order to meet changing spending needs. As a result, the Qing state tried to draw a clear division of labor between the state and society in financing and managing hydraulic projects. The central government was only to invest in big projects such as the Yellow River conservancy, which was funded and managed by the state, and the major dikes and dams necessary to keep the Grand Canal navigable. River works in Zhili Province, such as those on the Ziya and Yongding Rivers, often benefited from official funds from the central government due to their proximity to the capital (Li 2007: 39). The Kangxi (r. 1662–1722) and Qianlong (r. 1736–95) emperors even got directly involved with the technical details of these projects (Dang 2009).

The costs of certain strategic or long river dikes, such as those in Hubei Province that protected thousands of paddy fields and the provincial capital, also came from government coffers. However, the Qing government did not allocate regular spending to cover the entire cost of these projects. Instead, the government often relied upon the interest income derived from lending to pawnshops either regular official funds or the monetary contributions received from merchants to dispense the annual maintenance fee of these projects (Will 1985: 316). For example, the maintenance and repair fees of the sea wall (*haitang*) projects in Zhejiang Province, which protected farmland from seawater, were funded by both state direct investment in major construction and the interest income derived from official funds lent to private financiers for routine maintenance (Tao and Zhou 2001: 119–21; Zheng 1987: 203–4).

State Financing of "People's Projects"

For the numerous smaller dikes and irrigation projects scattered across the country—often called "people's projects" in contrast to those for which the state was officially responsible—the Qing government encouraged local communities to finance and manage both their routine maintenance and major repairs on the basis that their inhabitants would benefit (Zhang 2006). Under special circumstances, however, the Qing state would sometimes sponsor people's hydraulic projects. For example, in the mid-to-late seventeenth century when the society had not yet recovered from the upheavals of the Ming-Qing transition, the government often funded the construction or reconstruction of water-control projects for which local communities were unable to raise the necessary money (Xu 1993).

The state was also more willing to shoulder the cost of people's hydraulic projects when its treasuries were full. For example, the greatly expanded domestic economy in the eighteenth century provided the state with a growing tax base. In spite of the fixed quotas in tax collection and expensive military campaigns in Central Asia, Tibet, and Burma, the amount of silver deposited in the Board of Revenue was as high as 80 million taels of silver by 1795 (Zhang 1990).[9] In this situation, the Qianlong emperor

9. For the contribution of commercial resources to the imperial wars and expansion in the eighteenth century, see Perdue 2005 and Dai 2001.

used official funds to sponsor people's hydraulic projects so as to reduce the financial burden on local communities (Liu 2011: 30–35).

Despite these exceptions, the Qing state had no intention to increase its share in the investment of people's projects of water control. On the one hand, both the emperor and officials insisted that the state had only limited funds on an annual basis to cover expenses (*guojia jingfei youchang*). Therefore, there was no reason for the people to expect the state to cover all engineering costs in their communities. On the other hand, the Qing government considered that the method of self-financing and self-management of local hydraulic projects provided fewer chances of abuse to county officials and functionaries such as runners and clerks. Moreover, government officials held it "natural" for people to invest in hydraulic projects that mainly benefited themselves. In urban areas, projects that supplied water for city residents or maintained river navigation for commercial purposes were often funded by donations from rich merchants or officials (Morita 2002: chs. 2 and 3).

Alternate Methods of Financing Water Control and Their Justifications

The division of labor between the state and local society in financing hydraulic projects, however, put magistrates in rural areas in a very awkward position. Magistrates were held accountable by the center for any suffering caused by the mismanagement of water-control projects. Yet at the same time they were constrained by an inflexible fiscal system that did not place adequate funds at their disposal to meet varying needs of the region under their jurisdiction. In response, magistrates often turned to "informal funding." They used stored money to cover deficits without first obtaining approval from their superiors.[10] This method, however, could be exposed in the regular posttransfer audits conducted by the succeeding magistrate, in which case the official involved would face disciplinary measures even though he had not pocketed the funds but had instead used them for public purposes.

One example illustrates the dilemma and its consequences. When Zhao Zeng became the magistrate of Juye County in Shandong Province in 1803, the Yellow River broke through its bank at the site of the Heng works (*Henggong*). In order to block the floods and strengthen the dike to protect the county seat, Zhao disbursed an official fund of 9,080 taels of silver, which was not included in the regular expenditure of the county. In 1807, Zhao was impeached by the Shandong governor and ordered to return this amount of money to the government within three years. When he failed to do so, Zhao was relieved of his post and sentenced to exile. In 1811, as there was no evidence that Zhao had embezzled the money, he was pardoned from exile. Nonetheless, the money had to be returned by Zhao's superiors, who were responsible for supervising Zhao during his tenure as magistrate (He 1818).

10. The other two major means of "informal financing" in provinces were to remove money from funds allocated by the center or to collect surcharges from the local population (Zelin 1992: 47).

As the quota-based official budgets in provinces could not accommodate necessary exigent spending for public welfare, another financing method emerged in contravention of the formal separation of financing and management responsibilities between the state and local communities in water control. This was "lending rather than spending" government money to construct or repair private water-control infrastructure. There were several practical reasons pushing the Qing government to provide financial aid to local communities. First, the cost to repair a dike after a major breaching or to dredge a river after years of silting up was often too large for the local community to prepare in a timely fashion. For example, the dredging of Tang River in the Fushan District of Changshu County in Jiangsu Province, which was needed to facilitate commercial transportation and irrigation, was often funded by state loans from 1754 on so that the work could be finished before the coming of the summer rains. The communities involved then returned the advanced money within two years by paying extra land taxes (Chen 1761). Such state lending was particularly important when the local community had just suffered from dike failure or inundation of farmland. When severe collapses of local projects forced most local residents to move far away, the Qing state had to disburse the project fees first in order to attract residents back home once the finished project had made farming possible again (Naerjinge and Yin 1835).

Second, when a hydraulic project was located between counties belonging to different provinces, it was often quite difficult for local communities to coordinate maintenance and repairs. For example, Huangmei County in Hubei Province frequently suffered from breaching of the Chugong dike because the people in Dehua County in neighboring Jiangxi Province could not afford to maintain this dike properly. In response, the Hubei provincial government in 1838 petitioned the court to allow it to disburse an official fund of 8,481 taels to construct a new dike with a length of 1,589 *zhang*[11] to run across the three provinces of Hubei, Jiangxi, and Anhui. Only when this state-funded project was finished could officials persuade local people to take responsibility for maintaining the parts of the dike located in their own communities (Lin and Zhou 1838).

Ecological changes sometimes forced the state to pay for the repair of private dikes that used to be funded by local people. For example, there was a road-dike (*ludi*) 30 *li*[12] long outside the Bao'an gate of Wuchang in Hubei Province. It was close to the major dike of Jiaomaiwang. The repair of this road-dike had long been funded and managed by residents nearby. However, as the Han River increasingly flowed east toward the Jiaomaiwang dike, the road-dike began to bear the brunt of the strikes of the river. By 1800, the accumulated damage to the dike became so serious that local residents simply could not afford the necessary repair fees. The Hubei provincial government dispersed 16,638 taels of silver out of the official fund designated for repairing the Jiaomaiwang dike to conduct a major repair of this road-dike on the

11. One *zhang* was equivalent to 10 *chi* or "Chinese feet," or about 320 centimeters.
12. One *li* or "Chinese mile" was equivalent to one-third of a mile or about half a kilometer.

basis that restoring the smaller dike strengthened the Jiaomaiwang dike (Wu and Quanbao 1804b).

A similar case happened in Henan Province. People in Wuzhi County had constructed a long-standing private dike to protect them from the Long River. However, as the Yellow River gradually moved north, it almost converged with the Long. The private dike thus became less able to handle floods. In 1800, the Henan governor Wu Xiongguang asked to disburse official funds to strengthen this private dike, the Lanhuangnian (literally, "the dike to block the Yellow [water]"). In 1804, the cost of repairs ran as high as 22,320 taels of silver; this was to be returned by charging extra rates on local land taxes (Ma 1804). Repairs of this dike in 1807 cost a further 13,328 taels of silver (Ma 1807). This second official investment was also to be returned by extra land taxes on farmers protected by the dike. However, annual repairs steadily increased the length of the dike from 139 *zhang* in 1816 to 1,380 *zhang* in 1825, and the annual repair fees also rose from 30,000 to more than 100,000 taels. In 1816, this dike came under official management. However, the number of villages being protected by the dike was only between 20 and 30, and their total quota of annual land taxes was only 3,000 taels, which was quite insufficient to repay the official repair fund. In 1825, the governor-general of the Grand Canal Zhang Jin and the Henan governor Cheng Zuluo proposed to give up this dike completely (Wang and Fang 1993 [1829]: 624–33).

Wuzhi County was not the only place to have difficulty paying back official monies spent on hydraulic projects. Official funds were often not repaid by local communities on time. In particular, the extra land taxes remained a heavy burden on residents in those regions where poor harvests persisted even after the successful completion of water-control efforts, or in regions located in positions vulnerable to hydraulic damage. In such cases, the funds borrowed from government accumulated over time. In order to reduce the resulting financial burden on local residents, governors sometimes tried to justify the use of official funds that did not have to be paid back. Alternately, they might emphasize the contribution or utility of repairing or strengthening local private projects to major state infrastructural responsibilities such as the Yellow River Conservancy or the Grand Canal navigation. By doing so, they could legitimately use the funds assigned for the latter to cover the cost of minor private projects. Where any of these approaches was possible, local communities were freed from paying extra land duties.

The city of Suzhou in Anhui Province provides an instance of this diversion of official funds to spare taxpayers. Parts of the river dike that protected the city collapsed in 1808 due to erosion. Local gentry and commoners petitioned to borrow the estimated cost of 32,800 taels in silver from the government to pay for repairs; they promised to return the funds by paying extra taxes. Eyunbu, the acting governor of Anhui Province, noticed that Suzhou prefecture, whose jurisdiction included Suzhou city, had already borrowed official funds of some 30,000 taels of silver for a canal project to divert the river. In his opinion, the burden of repayment consequent upon two such projects would be too heavy. Eyunbu found that the center had approved the Anhui provincial government's retention of the interest earned by lending the

people's contribution to granaries to merchants. This fund had been used to repair the city of Anqing the previous year, and there were still 40,000 taels of silver left. Eyunbu used the remaining funds to cover the cost of repairing the bank of Suzhou city (Eyunbu 1808).

Infrastructural reconstruction might also be conceptualized as a means of disaster relief. For example, heavy rainfall in the autumn of 1810 caused many breaches of the Thousand Mile Dike in Zhili Province, leaving it in urgent need of repair. The management and maintenance of this dike were the responsibilities of the people living along it but, stricken by floods, they could not afford the cost of fixing it. However, the Board of Revenue was reluctant to spend government funds on this private dike, despite its location not too distant from the capital. As a result, the governor-general of Zhili Wen Huicheng decided to disburse 13,808 taels of silver from the relief fund to conduct repairs; local people were not required to repay this amount (Wen 1811).

Several instances demonstrate how officials rationalized state support for private hydraulics as part of a larger conservancy effort. In one case, the headwaters of the Jiusheng River in Funing County in Jiangsu Province were located close to the south bank of the Yellow River. This river was not only important to irrigate farmland but also for the outflow of excess water that threatened the south bank. Moreover, it facilitated the transportation of materials needed by various bureaus in charge of managing the Grand Canal. In 1812, the cost of dredging the silted-up river ran as high as 33,915 taels of silver. Yet this area had suffered from floods continually since 1804, and the local population could hardly bear the extra burden of returning the borrowed government funds. The governor-general of Liangjiang Bailin and the Jiangsu governor Zhu Li memorialized for permission to use the funds deposited in the bureaus of the Grand Canal to undertake the desperately needed drainage; they justified their request by emphasizing the importance of dredging this river to the management of the Grand Canal (Bailin and Zhu 1812). In another case, the cost of 29,300 taels of silver for urgent repairs to the bank in order to protect the Dangshan County seat from heavy flooding by the Yellow River in 1811 was originally to be returned by extra taxes levied upon local people. However, Bailin reported that in addition to flood damage, this county had suffered drought in 1813 and 1814, and the land taxes due in 1814 and 1815 in this area had been postponed. Given this situation, local people were unlikely to be able to repay the repair costs. As a result, it was disbursed from the annual expenditure the Qing government assigned to the administration of the Grand Canal (Bailin and Li 1814). Concern for the public interest—particularly a desire to reduce the financial burden of local residents for reconstruction of hydraulic projects—seems to have be one major reason why Qing officials actively sought reasons to use state funds to cover some of the costs of "people's projects" that were originally supposed to be shouldered by local residents.

As mentioned in the preceding text, the Qing government often relied upon the interest earned from lending official funds to merchants to finance officially managed dikes or banks. There is evidence to show that this financing method was also extended to "people's projects." For example, the Yu River in the counties of Huazhou and Huayin in Shaanxi Province channeled water from the mountains into the Wei River.

Its dike was managed locally. However, the dike's construction was not solid due to the limited investment by residents, and floods often inundated the bank between summer and autumn. Provincial governors and circuit officials investigated this situation and suggested financing the repair and maintenance with government money so as to protect the agricultural land. Yet the two counties were quite poor. The Shaanxi governor Lu Kun and provincial treasurer Chang Wen decided to remove 120,000 taels of silver from the fund deposited in the treasury and assigned for the purpose of repairing the Yue Temple. They lent the money to pawnshops and used the annual interest of 12,000 taels to finance maintenance of this private bank (Lu 1823).

Although it is clear that Qing officials often manipulated the fiscal system to cover the costs of private water control and reduce the tax burden on localities, the degree of flexibility was limited. For instance, only governors and governors-general had the privilege to propose covering such costs with official funds designated or assigned for large-scale water-control works. The majority of state lending for private hydraulic projects still needed to be repaid through extra land taxes. Thus communities that could raise the money autonomously to construct or repair local hydraulic projects did not ask for financial aid from the government. For example, of the dikes that were breached by floods in Hunan Province's Huarong County in 1831, half were repaired by the inhabitants while the rest had to borrow money from the government (Naerjinge 1837).

Formalization

By the late eighteenth century the method of "borrowing official funds to construct and returning later by extra taxes" (*jiexiang xingxiu, tanzheng huankuan*) had become quite important for the repair and strengthening of private water-control projects. Provincial governments took the required money from the collected land taxes or other items of public funds and then lent it interest-free to the local community to undertake the work. When the project was finished, the communities that benefited from the finished project returned the money by paying extra rates in their annual land taxes. The time granted to clear this debt to the government ranged from 2 to 12 years.

In the first half of the nineteenth century, the method of lending official funds for private projects of water control had become institutionalized in practice. The lending of official funds for people's projects of water control was not due to the goodwill of officials as individuals but resulted from an institutionalized procedure. It differed in nature from personal donations by officials of their own money for local projects, in which case the gratitude of local people might go to the officials. In the Daoguang reign, increasing fiscal difficulties due to the high value of silver in regard to copper coins forced the Qing government to encourage officials and merchants to donate money for water-control projects. In Yongnian County in Zhili Province, for

example, the magistrate Bian Qingcai in 1837 donated 10,597 taels of silver to repair the dike that protected the county seat (Qishan 1837).[13]

When communities did borrow official funds, the cost was first estimated by county officials in cooperation with local gentry. The amount was then reviewed by circuit officials who visited the project location; after this, it was approved by the provincial authorities. The money was directly handed over to members of the local gentry who were supposed to organize the work and even cover the deficit if the official funds turned out to be inadequate. In this way, runners and clerks in the county government would have little chance to embezzle the funds. When the Hunan provincial government in 1813 lent 9,740 taels of silver for the people in the counties of Wuling and Longyang to repair their damaged enclosure dikes, the acting governor Chen Yu emphasized that the money had to be delivered directly to the inhabitants of the area of each breached dike without going through the hands of local government functionaries (Chen 1813). Similarly, the official funds that were regularly lent to support drainage of the Liu River in Jiangsu Province were also handed over directly to the local gentry (Sulinga and Fei 1796). Although the government often sent officials to check the finished work, officials expected local people to have a strong motivation to ensure the quality of these projects with which their interests and livelihood were closely connected. Such disbursements of official funds for private hydraulic projects were freed from the time-consuming and rigid auditing procedure (*baoxiao*) of the Board of Revenue or the Board of Works.

The government did not incur any extra expense as long as the lent-out money was paid back within the designated period by extra land taxes. However, the effects of this financing method in practice were quite different from the original design. Although the communities in the wealthy Lower Yangzi Delta could afford to pay extra duties to return the official funds borrowed from provincial governments for local hydraulic projects, many communities could not do so punctually. In poor provinces such as Yunnan and Guizhou, the government either directly invested in local projects or exempted the local communities from repayment. For example, Dian Lake (*Dianchi*) near Kunming, the capital of Yunnan Province, was important for irrigating farmland in the four counties of Kunming, Jinning, Kunyang, and Chenggong. Both the regular and extraordinary drainage of the mouth of Dian Lake to allow excess water to flow out was paid for by official funds. Costs ranged from 1,000 to 7,000 taels of silver each time. Local inhabitants did not need to pay the government back for these expenditures (Bolin and Yongbao 1808).

Likewise, in the spring of 1831 Tongzi County in Guizhou Province suffered from a severe flood, and the existing river bed was too narrow to divert the excess water. The Guizhou provincial government thus decided to dig a long ditch to allow the water to flow out. Of the total amount of some 22,800 taels of silver, officials in Guizhou contributed 12,700 taels and members of the local gentry contributed 1,100 taels; the remaining 9,000 taels was borrowed from the provincial treasury. Officials in Guizhou further took more than 4,000 taels of this loan as their responsibility, while the final

13. This is one of the largest donations for water control by a magistrate that I have found as yet.

5,000 was expected to be paid back within 10 years from extra taxes on farmers in Tongzi County. However, the Guizhou governor Yutai in 1835 memorialized to the court that the mountainous Tongzi County was quite poor and the annual quota of land taxes was only 2,000 taels of silver. The annual 500 taels of extra taxation was thus a tremendous burden on local farmers. Yutai petitioned to deduct this item of 5,000 taels of silver from the official funds held by the Guizhou government (Yutai 1835).

Conflicts with Bureaucratic Discipline

If the estimated amount of the loan was not reported to the Board of Revenue in advance, the officials involved were not only subject to disciplinary measures but were also responsible for returning the money to the treasury when local communities could not clear the debt on time. This occurred in the case of the Jiaomaiwang dike described in the preceding text. All the officials implicated in this loan, ranging from the magistrate of Jiangxia County to the former governor-general of Huguang, had to pay half of the expenditures out of their own pockets (Wu and Quanbao 1804b).

Lending state funds for people's projects without receiving sanction from the center could also make relevant officials easy targets for lawsuits. Let us look at a case from Shaanxi Province. As the Yellow River, which ran through Chaoyi County, moved westward, it seriously threatened the inhabitants of the area near Zhaoduzheng. Members of the local gentry planned to raise money to dig a canal (*yinhe*) to channel water back to the previous riverbed. Due to the urgency of the project, the provincial treasurer agreed to lend 41,000 taels of silver so that the local people could initiate the project in the summer of 1839. The work did not proceed smoothly and had to be cancelled two years later. As for the 30,000 taels of silver that had been spent, the Shaanxi provincial government decided to clear it in five years by applying the annual interest income derived from lending 60,000 taels of silver out of the idle items in the provincial treasury to merchants. In 1841, however, a candidate official who was punished for misbehavior exposed this arrangement to the center when he sued his superiors. No embezzlement was found when investigators from the center checked the bookkeeping and consulted the local gentry. However, as this loan had not been reported to the Board of Revenue in advance, the Shaanxi governor Funiyanga was disciplined (Bojun and Huang 1842).

The Growth of Arrears

In principle, local communities needed to return the state lending for constructing or repairing water-control projects by paying extra taxes to the government. Nonetheless, as we have seen in some of the examples described previously, this did not always happen. Arrears in returning the official funds by the benefited communities were widespread in the first half of the nineteenth century and even earlier. For example,

the government in 1788 lent some 48,700 taels of silver to repair private dikes and ditches in the counties of Henei and Wuzhi in Henan Province. This amount needed to be returned within two years by collecting extra land taxes from the 25 counties that benefited from the projects. However, 19,190 taels were still outstanding six years after the deadline (Li 1796). Arrears even occurred in relatively rich regions. In 1833, big floods destroyed the circling dikes (*yuandiji*) between Nanhai and Shunde counties in Guangdong Province. The local gentry petitioned to borrow 49,000 taels of silver from official funds to repair the dikes. After applying the annual interest income derived from the sum of money that the local gentry had deposited for the yearly maintenance of the dikes against this debt to the government, 10,600 taels remained. This amount was to be repaid within five years (starting from 1834) by an extra duty added to the regular land taxes. However, as late as 1842, the Guangdong government had not received any repayment because local households could not reach a consensus on how to distribute the extra burden among themselves (Qi and Liang 1842).

Such delays in returning borrowed official funds seem to have been the rule rather than the exception. In 1803, the governor-general of Huguang Wu Xiongguang and Hubei governor Quanbao pointed out to the court that the extra rates that should have been collected to return funds lent for private hydraulic projects were often in arrears in the provinces; arrears of more than 20 years were not unknown. The major reason, in their opinion, was that the performance of magistrates was evaluated by the collection of the formal quota of land taxes rather than the extra rates. There were either light or even no disciplinary measures against magistrates if they failed to collect the extra land taxes on time. They thus suggested that the court include the collection of extra land taxes into the regular evaluation of the administrative performance of magistrates so that state advances for private local infrastructure projects would be returned (Wu and Quanbao 1804a).

That this suggested measure was not executed effectively in practice is indicated by the accumulation of such arrears in the 1840s. For instance, in 1846, the Jiangxi governor Wu Wenrong reported to the court that the total amount still owed to the government ran as high as 251,800 taels of silver and dated back to 1823. As similar arrears in Jiangsu and Anhui provinces had been cancelled by the court in 1795, 1818, and 1835, respectively, Wu Wenrong asked the court to write off all the Jiangxi arrears accumulated by 1840 (Wu 1846). In Hubei Province, a total of 327,218 taels of silver in official funds lent for private water-control projects before 1830 was still outstanding and was finally exempted in 1837 (Huguang governor-general and Hubei governor 1837). In Anhui Province, the total amount of state funds that local communities had borrowed for water-control projects in 1832, 1835, 1837, and 1839 was 274,654 taels of silver. As of 1847, 191,353 taels of silver (equivalent to 70 percent of the total debt) had not been paid back yet, and the Qing state cancelled these liabilities (Lu and Wang 1847).

In 1848, the governor-general of Minzhe, Liu Yunke, petitioned the court to waive repayment of the 21,196 taels of silver that the counties of Longxi and Nanjing had borrowed from the government in 1827 to repair local dikes and banks. Liu pointed

out that the official land taxes had often been arrears in these two poor counties, let alone the extra rates for repaying official advances (Board of Revenue 1848). In Hubei Province, the total amount of similar arrears in counties by 1846 was 601,822 taels of silver. The Hubei provincial government petitioned the court to exempt this debt as the people in Hubei simply could not afford to pay it back (Yutai and Zhao 1848). Although the specific amounts of arrears in other provinces remains to be examined, it is not unreasonable to expect them to be on a similar scale as those observed in Hubei and Jiangxi provinces. The state funds that were lent to sponsor private hydraulic projects across the country between the 1790s and 1850s thus constituted a major item of the Qing state's de facto spending in infrastructure.

This "lending" of state funds for local hydraulic projects constituted a special means for the Qing state to legitimate itself even when it was experiencing fiscal difficulties in the first half of the nineteenth century. This method also made the quota-based Qing fiscal system more responsive to varying spending needs when the annual tax income was substantially fixed. After the repression of the Taiping Rebellion in the mid-1860s, the fiscal institution changed fundamentally as the Qing state began to tap more revenue from commercial sectors by levying indirect duties on consumption (*lijin*). The center allowed provincial governments to retain up to 20 percent of the collected *lijin* revenue for spending within the province, without being audited by the Board of Revenue. Thus governors in the last few decades of the century had more official funds to finance people's projects of water control in their respective jurisdictions. Under these circumstances, "loans" of state money to cover local water-control costs came to be relatively uncommon compared with the first half of the nineteenth century.

Conclusion

The state is not just an instrument completely controlled by a class or certain groups to either advance their particularized interests or to repress other social actors. Nor does state autonomy imply that state actors could pursue their policy goals independent of the interests of social actors, as the strong version of state-centered theory suggests. Early modern states not only permitted but also encouraged social actors to shoulder more responsibility in local infrastructure, as well as in other welfare efforts such as charity organizations. Nonetheless, active participation by nonstate actors in both financing and managing local projects of water control (or other sites related to the public interest) by no means suggests rejection of, or opposition to, state power and authority. Indeed, nonstate actors often had to seek help from state actors when they found themselves unable to settle conflicts or come up with needed funds.

In the case of financing hydraulic projects in Qing China, the state and society should not be viewed as two opposing sides, as seen in different ways in the classic works of Wittfogel and Japanese social historians. This paper supports the approach of Will and Perdue by showing that the role of the Qing state to safeguard the public interest is essential in understanding the changing relationship between the state

and society in financing water control. The Qing state originally tried to draw a clear distinction between the state and society in financing water-control projects of different scales and importance. In practice, however, it had to find a way to help finance local infrastructure projects when local communities by themselves could not overcome the collective action problems inevitable in mobilizing the labor and money necessary for water control, especially for larger cross-regional projects, or simply could not raise the monies needed in a timely fashion.

This is illustrated in the lending of state funds to sponsor people's water-control projects in Qing China in the mid-eighteenth and first half of the nineteenth centuries. Under the constraints of the state's fiscal system, which did not tap nonagricultural sectors to increase government income in order to accommodate the needs of infrastructure in localities, Qing officials creatively turned to state lending to fund major repair or reconstruction of water-control projects in local communities. When the communities returned the borrowed money to the government by paying extra rates in land taxes, this special financing method became a form of state investment in small-scale infrastructure through increased tax revenue, albeit in reverse order. Its continuation in the face of massive arrears, and the state's willingness in many cases to ultimately exempt communities from these arrears, suggests that in practice such loans were a means to transfer wealth from richer to poorer areas in the event of disaster.

The Qing government did not expect to profit monetarily by lending official funds to finance water-control projects in local communities. It did not charge interest on such loans, which contrasted to the interest-bearing loans the state made in the same period to merchants. As spending of these advanced funds was handed over to members of the local gentry, officials did not have much opportunities to move part of the money into their own pockets. In this light, the frequent use of this financing method across China between 1750 and 1850 and the large scale of the accumulated arrears is closely related to the legitimation of state power by providing public goods. That is to say, it aimed to execute the state obligation to act as the guardian of the public welfare in funding infrastructure that would benefit agricultural irrigation, commercial transportation, and prevention of floods. That this duty of the state to secure the public interest was recognized by both state and society actors can be seen from the fact that state lending resulted not only from initiatives by officials but also from requests by local residents.

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