

Incentives and Information: an Institutional Analysis of the Traditional Chinese State and Great Divergence in the Early Modern era

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Incentives and Information: an Institutional Perspective on the Traditional Chinese State and Great Divergence in the Early Modern era

Abstract: Using newly reconstructed data series of two millennia and half on warfare and durations of political unification and fragmentation, this article provides a new interpretation of the evolution of traditional Chinese political regime in the perspective of new institutional economics. Structured within a principal-agent model with three major actors: the emperor, the bureaucracy and the people, the article shows that while monopoly rule, long time-horizon and large size of empire could lead absolutist regime like traditional China to a path of low-taxation, political stability and extensive growth, fundamental incentive misalignment and information asymmetry problem embedded in its centralized and hierarchical political structure significantly weakened the regime's fiscal and financial capacity to support institutions and institutional change conducive to modern economic growth. Using comparable series of fiscal revenue, the paper makes a comparative case study of Imperial Qing (1644-1911) with early modern Western Europe.

Why did China, given her economic and technological leadership in the 14th century or even in the 18th century as some have recently claimed, fail to become the first industrial nation. A multitude of hypotheses proposed ranged from cultural and scientific traditions to factor endowments or natural resources. However, political and economic institutions that pertain to property rights and contract enforcements – factors viewed as fundamental to long-term economic growth by institutional economist – have figured little in this debate.¹ Part of the reason that account for this scant attention was that the historiography on the role of traditional Chinese state and institutions had long been dominated and clouded by the overly simplistic theoretical framework of oriental despotism or theories of class struggle in the official Communist ideology.² On the other hand, there had developed the opposing literature that emphasized the Imperial rule of benevolence which provided a framework that taxed lightly on the peasantry, protected private property rights and interfered little in the operation of a well-establishment markets in land and labor.³

This paper reconciles these opposing views with a reinterpretation of the early modern Chinese state in the perspective of new institutional economics. It argues that while the traditional framework of oriental despotism may be overly pessimistic and misleading, the role of state – its absolutist features and highly centralized political and fiscal regime – figures prominently in the formation of property rights and contract enforcement in early modern China. In particular, the classic dilemma of

¹ See Ma 2004 for a summary of these hypotheses.

² See Wittfogel for the case of oriental despotism and Wang Yanan's book cited in this paper as a strong condemnation of the traditional Chinese state from a Marxist perspective.

³ See Pomeranz 2000, Wong 1997 on factor markets and taxation, Huang 1996 for legal institution.

government credible commitment as posed by Douglas North – while economic growth requires a strong state to secure property rights, but a state too strong becomes a potential threat to private property rights – is a perennial one throughout the two millennia of Chinese dynasties.

The Chinese imperial political structure, which evolved in relative isolation with remarkable continuity, offers a fascinating case study of the role of the state on economic growth in a long-term perspective. Drawing on the insights of recent literature on the relationship between institutions and economic growth, this article delineates the political logic of Chinese empire in the framework of three major actors: the emperor, the bureaucracy and the people, each with their own objective functions and incentive schemes. In the framework of principal-agent and asymmetric information, it shows that the historical interplay of these three agents with their respective incentive schemes and structures of private information shape the internal logic of the political structure and the rationale of Confucian ideology.

I argue that in an absolutist regime, the absence of government credible commitment can be partially alleviated through rulers' monopoly of power and long time-horizon, which could lead to a virtuous equilibrium of low-extraction and the operation of a relatively free private economy. Furthermore, the power and reaches of the Chinese empire could be constrained by double principal-agent problems among the three actors. Thus, the fundamental incentive misalignment and information asymmetry problem embedded in a centralized and hierarchical political structure serves to tie the grabbing hands of an absolutist state. But more importantly, with long time horizon of monopoly rule, rulers' objective function switched from short-run revenue maximization to the long-term defence of monopoly rents. Fiscal extraction and tax revenue maximization became secondary to the survival and extension of rule, which hinged on the diffusion of internal revolution and elimination of alternative or contending sources of political power.

Through a reconstruction of two millennia recorded incidences of warfare and duration of unification and fragmentation, this article traces the evolution of state formation and corresponding changes in fiscal and administrative regimes which shape private property rights and factor markets. The political fragmentation that characterized Western Europe since the fall of the Rome Empire eventually allowed the development of some form of "voice" (representative bodies in one form or

another) and “exit” (political fragmentation) in Western Europe. The key is that the “corporate” characteristics of many of the European states and organizations ensured that economic rents from the reduction of violence were controlled and redistributed through a dominant coalition of commercial and property elites who had a relatively stake in the overall economy. Intensive inter-state competition in the European political system subjected any existing monopolistic rents (due to rulers’ monopoly in the provision of internal peace and other public goods) to contestable and competitive pressure, leading the continuous generation of Schumpeterian rents awarded to the innovating states or interest groups. This process of creative destruction based on a bottom-up institutional building and inter-state competition led to the rise of states with greatly enhanced fiscal, financial and administrative capacity that could support institutional change conducive to modern economic growth.

The case study of Qing China in 17-19th centuries presented in this paper reveals that the establishment of absolute monopoly of political rule ensured that economic rents from the reduction of violence were firmly in the hands of rulers or political interest divorced from commercial or property interest. Although, given the condition of monopoly rule and long time horizon, it could give rise to a political equilibrium of low-extraction under long-time horizon, it encountered fundamental problem of incentive misalignment and information asymmetry embedded in a centralized and hierarchical political structure. The resultant massive withholding of private information, while effective in tying the grabbing hands of the states, also simultaneously curtailed the fiscal and administrative capacity of the state and failed to generate the mechanism of credible commitment needed for financial and fiscal transformation as witnessed in early modern Western Europe. to provide public goods conducive to modern economic growth.

I divide the paper into three main sections. The first section provides a narrative history of traditional Chinese political structure with two and half millennia data series of warfare and periods of fragmentation. The second section illustrates the case of Qing China (1644-1911) with quantitative evidences. The third section compares English and Western European states in the early modern era and its relevance for explaining the Great Divergence.

I. The Model and its History

The Model

From the founding of the Chinese empire in Qin (221 – 206 BC) up until the fall of the last Imperial Qing dynasty in 1911, a centralized rule with a hierarchical bureaucracy had been indisputably her most distinguishing characteristics. We start with a description of this political model of governance or, to borrow a terminology from Max Weber, its ideal type before we turn to its historical evolution. In this model of absolutist regime, ultimate power was vested in the emperor who commanded property rights over all factors of production including land and labor. At the other or lower end of the spectrum are the people or masses (farmers or peasants in an agrarian regime) who are nominally the tenants and cultivators of land and resources owned by the emperor.⁴ The Imperial household is entitled to rents from agricultural output, the bulk of which went into the supply of external defence and internal security.

In this model, the dominance of a single imperial household over all social or political groups is essential. At the founding of the Qin empire, China's First Emperor (秦始皇), followed the advice of his Legalist (法家) prime minister, Lishi (李斯) and opted against a feudal (封建) type of political arrangements where the imperial power would co-exist with various regional elites or aristocrats often with hereditary status. Instead, they implemented a regime of empire-wide administrative units (郡县制) and household registration "bianhu qimin" (编户齐民). In this new regime, only the status of imperial throne is hereditary. With the elimination of aristocracy or self-contained political units, the administration of the empire - tax collection, suppression of violence and some provision of minimal public goods – would be governed by direct imperial rules and orders (律令) executed by an impersonal bureaucracy, which was to become a distinctively Chinese institutional innovation.

The logic of the tri-part political model can be illustrated by the words of the great Tang Confucius scholar, Han-Yu (韩愈): "A Ruler is there to give orders, an official is there to carry out the ruler's order and people are there to provide offerings of grain, hemp, silk, china and money to the

⁴ This is clearly expressed by the notion of 'Wang-tu wang-min (王土王民, king's land, king's people/all land and all people are owned by the sovereign)', which appeared in The Book of Songs compiled during the age of Warring States (403-221 B.C.) and persisted throughout the imperial period, see Kishimoto 2008.

above. A ruler failing to give orders is not ruling properly, an official failing to execute orders is not acting properly and the people not making the offering should be punished” (cited in Liang, 2002, p. 72-3).

This concept of the state, as pointed out by China historian Qian Mu, is in many ways an extension of the Chinese concept of a patriarchal household. With the elimination of hereditary aristocracy, the transition from feudalism to central rule extended the stand-alone imperial household (家) into the national sovereign (国). The literal translation of the Chinese character for nation-state (国家) is really “state-family” or what Max Weber termed as a patrimonial or “familistic state” (Creel, p. 168). Etymology used by Qian Mu reveals what was the equivalent Chinese term of “prime minister” (宰相) for the empire derived from titles that denoted managers of private royal households in the pre-Qin period. Thus, for Qian Mu, the rise of central rule also marks the beginning of a separation between ownership (the Imperial ruler) and management (the bureaucracy).⁵

This political structure, to borrow present day industrial organization terminology, is not entirely dissimilar to large private (family) ownership but managed by outsiders. This analogy will turn out to be a useful guide to examine the economic efficiency of this political organization in light of the principal-agent theory. We thus have a political model with three actors: the emperor, the bureaucrat and the masses or peasant farmers, each with their own distinctive objective functions, incentive schemes and information structures. With the emperor claiming a share of peasant farm output collected through the bureaucrats, incentive misalignment among or between the actors would potentially induce the emergence of double principal-agent problems: that between the emperor and the bureaucrat and that between the bureaucrat and agent.

Traditional Chinese autocracy is founded on a ruler-centered model, with no formal or external institutional constraint placed against the powers of the Imperial rulers and their agents on the general populace. There was a system of checks against bureaucratic abuses of power or dereliction of duty or to redress grievances of the general populace strictly within the administrative hierarchy in top-down

⁵ See Qian, 1966, pp.8-12. See Liang, chapter 1 and Creel for similar arguments on the clan and kingship origin of the Chinese state. The derivation of national sovereign from Chinese imperial household has often led to the contentious claim that Chinese emperors throughout history often continued to view the empire as his private domain.

fashion with the emperor often being the final arbiter. But there is no formal or external institutional constraint against the powers of the emperors except the vaguely defined mandate of heaven. The problem of the absence of formal constraints against emperor is succinctly summarized by Ray Huang's study of Ming despotism: "...Final authority (was) rested in the sovereign, bureaucratic action was limited to remonstrance, resignation, attempted impeach of those who carried out the emperor's orders, and exaggeration of portents as heaven-sent warnings to the wayward emperor. When all these failed, there was no recourse left." (Ray Huang, 1974, p. 7).

Of course, rulers do fear the possibility of violent revolt and insurrection from masses due to abuses of imperial and bureaucratic power. The breaching of this insurrection constraint has been one of the defining features of Chinese history marked by dynastic changes and peasant rebellions. History has taught the useful lesson that blatant fiscal extraction or confiscation was usually precursor to revolts. The well-know admonishment by the Tang emperor that water can float as well as overturn a boat just like masses could do to their rulers is vivid illustration of this ever-present if somewhat unpredictable constraint.

Both the logic and to certain degree, the remarkable longevity of Chinese autocracy throughout Chinese history may be usefully interpreted by Mancur Olson's benchmark model based on the analogy of stationary and roving banditry. The crux of the argument is that monopoly political rule given a long time horizon (especially with throne being hereditary across generations as in dynasties) could, contrary to what is often believed, lead to a "virtuous" equilibrium of relatively low level of predation or extraction and high level of provision of public goods by the rulers (Olson 1993). The key assumption is that ruler's self-interest to maximize tax revenue provides incentives to support economic growth leading to a larger tax-base. The longer the time horizon and the more stable the rule is, the greater the ruler's interest could align with the interest of the sovereign. Thus under conditions of monopoly rule, and long time horizon and low discount rate, rulers' high valuation of the stream of future tax income over one-time or short term extraction constitutes a self-enforcing constraint on the grabbing hands of the autocratic rulers in the absence of formal constitutional constraint.

Charles Tilly's pithy account of "how war made states, and vice versa" for Medieval and early modern Europe turns out to be a equally apt depiction of the Chinese state-formation more than a millennium earlier. Before the 7th century BC, the collapse of the legendary Zhou dynasty disintegrated the Northern Chinese plain into thousands of marauding and competing states. Intense geo-political competition favored the formation and consolidation of larger states that adopted administrative reform measures to maximize the resource mobilization for war. Du Zhengshen's in-depth study encapsulates the rulers' winning strategies during the Warring State period in the classical Chinese phrase of "Bianhu Qimin" which could be literally translated as "registering the household and homogenizing the people." These measures that eventually led to China's first unification by the state of Qin in the second century BC, included the replacement of local feudal control with direct administrative rule, the establishment of military-based meritocracy in place of hereditary nobility (hence "homogenizing the people"), the allocation and registration of agricultural land and household for direct taxation and military conscription and the promulgation of standardized of legal codes under a system of collective punishment. Du traced the origin of the system of direct administrative rule at the local level to the organization of military infantry.⁶

But Qin's bloody unification did not mark the end of all bloody violence or even political fragmentation in Chinese history. Indeed, the Qin itself collapsed under the weight of rebellion after a mere 15 years in existence. To sustain the rule of a single unitary empire with direct administration in a pre-modern world no simple feat. Internally, the legitimacy of one ruler above all was itself highly contentious and susceptible to dynastic struggles and internal rebellions. While the system of direct administrative rule obviated conflict and concession with local power magnates and eliminated multiple layers of extractions as often occurred in a feudal political structure, it had to confront the problem of monitoring and containing the power of its agents: bureaucracy. Given the pre-modern monitoring technology, the larger and more complex the empire grew, the more dependent a ruler would be on local well-informed agents under conditions of asymmetric information hence the more vulnerable to the risk of alternative power base built up locally. Chinese history is replete with violent

⁶ Also see H. G. Greel, 1964 for an in-depth description of the origin of the direct administrative county system (郡县制) in China.

rebellions and dynastic breakdowns led by regional magnates, frontier generals, or entrenched bureaucrats.

Indeed, according to China historian Ge Jianxiong, in the two millennia following the founding of Qin, China had since seen more years of fragmentation than unification under a single ruler wrought by various phases of internal and external unrest. A more sustained threat has been repeated nomadic incursions from the northern frontier outside China's Great Wall where the Chinese system of governance based on sedentary agriculture simply halted before an environment of steppes and dry-lands. Using the geographic size of unified Ming China as the criteria, Ge's calculation as summarized in Table 1 reveals that out of the 2135 years since China's first unification under Qin, China remained unified for only about 935 years. Meanwhile, warfare is a constant theme running through the Chinese dynasties, fragmented or unified. Calculated from a detailed recording of incidences of warfare compiled by China's Military History Committee, table 1 shows a total of 3752 incidences of warfare in the span of 2686 years, giving an average of 1.4 warfare per year throughout the period.

Insert Table 1 and Map here

Figure 1 plots the incidences of warfare and number of years unified within each century between 7th century BC and 19th century AD. On a century by century basis, figure 1 shows that the drive for unification proceeded in roughly three phases, beginning with the rise of Qin and Han dynasties between 3rd BC and 3rd AD, then the surge of Sui and the glory of Tang dynasties between 6th and 8th century with the final consolidation of a single unitary empire under Yuan, Ming and Qing dynasties starting with the 13th century. While warfare persisted throughout the history, the centuries of important dynastic change (marked with circles in figure 1) in 3rd BC, 6th, 7th, 10th, 13th, 14th and 17th AD (corresponding to Qin and Han, Sui, Tang, Song, Yuan, Ming and Qing respectively) generally corresponded to a upsurge of incidences of warfare, usually followed by a moderation of warfare in the following century as the new dynasties managed to consolidate their hold of power.

Insert Figures 1 and 2

Figure 2 reveals the importance of nomadic conflicts with Han Chinese as a share of total warfare throughout Chinese history. Indeed, except for the earlier period of Chinese empire in the 2nd and 1st century BC, conflicts between nomads and sedentary Chinese always exceeded the internal rebellions

within Chinese, marked by a sharp escalation from the 10th century onward. The importance of Han-nomadic conflict had been duly noted in recent studies (Turchin 2009, Bai and Kung forthcoming). Peter Turchin noted that all but one of the fifteen unifications occurred in Chinese history – the establishment of Ming c. 1368 – originated in the North and almost all the Chinese capitals were located in the north (even after the economic centre shifted south to the Yangzi valley after the first millennium (p. 192). Indeed, China's northern frontier demarcated by the Great Wall bore historical witness to a long-term escalation in both the scale of warfare and the size of political organization mobilized for warfare between the Han-Chinese and nomadic Chinese. The massive construction of the Grand Canal in 7th century, for example, provided the logistic capacity to jack-up the military build-up on China's northern frontier feeding on grain shipped from the economically ever-important South, but this was successively matched by the scaling-up of imperial confederations of semi-nomadic tribes such as Xiongnu, Turks and Mongols (See Quan Hanshen 1976 for the role of Grand Canal). Indeed, the striking degree of synchrony and feedback loops between the rise of the steppe imperial confederations and Chinese empire in driving up both the size of war and states plays out like Chinese prequel to Tilly's tale war and state formation in Europe, on a scale much larger and a time frame much earlier.

How did the rising scale of Chinese empire driven by warfare and defence cope with the rising diseconomies of information and incentive problems associated with a centralized and hierarchical organization? In the next section, we briefly trace this long and tortuous path towards the rise of a single unitary empire supported by civil bureaucracy in the last two millennia marked by turn points of violent reversals and pivotal transformations in the so-called era of Tang-Song transformation (8th-12th centuries).

The Tang-Song Transformation

Throughout Chinese history, the relationship between the emperor and his bureaucracy had been uneasy and often treacherous. For key decision making and monitoring, the throne usually depended on an inner nucleus of staffs, often outside the ranks of formal bureaucracy. Over time, with these inner layers of staffs slowly absorbed into the formal bureaucratic structures, they were then replaced

by new inner circles that would include royal eunuchs and bondservants. These evolving strategies led to the shifts of bureaucratic structures across Chinese dynasties and the emperors' suspicions first led to the weakening of the post of prime ministership and eventually its complete elimination from the early Ming onward (Wang Yanan, pp. 48-49, Qian Mu).

The growth of the empire as seen in long-term population trends in figure 3 called for the establishment of a routinized empire-wide system of bureaucracy. Before Tang dynasty, the system of directly recruiting bureaucrats nationwide from the populace remained ad-hoc, relying on a combination of informal recommendations and official examinations. By the Tang, the civil service examination system began to develop and become increasingly important but it had gradually fallen under the control of official schools monopolized by elite lineages who turned into a social class of ruling bureaucrats with hereditary status (门第 or 门阀). The rise of an entrenched and closed bureaucratic class became one of the fundamental destabilizing forces to central Imperial rule.

Insert figure 3 here

It was around the 8th century that the system of official schools managed by the closed elite lineages began to decline, gradually opening up the civil service examination system to the general populace beyond the pupils of the official schools (Wu 2004, p.206-222, Seo). The implementation of a three-tier (county, province and capital) nationwide civil service examination based on a common hieroglyphic script system and Confucian ideology was instrumental in imperial integration and formation of a Han Chinese cultural identity, as well as opening up the prospect of upward mobility to the average people.⁷ From the ruler's perspective, the creation of a body of career officials having no autonomous territorial or functional power base was indispensable to the long-term stability the empire. With the installation of a system of rotating bureaucrats empire-wide in a period of three to five years and the rule of avoidance which precludes bureaucrats from serving in their home county, the empire created a bureaucracy that were impersonal but not independent with interest aligned with the emperor rather than their local constituents. Their promotions and punishments were disciplined through the administrative hierarchy guided by the detailed administrative codes of conduct, and incentivized with

⁷ Ho Ping-ti 1967, Qian Mu. Hou Ping-ti, 1967, pp.17-19 describes the limited extent of hereditary aristocracy in Ming and Qing China.

life-long privileges of tax-exemption and legal impunity of some sort. This special status was accorded to all who passed various levels of civil service examinations leading to the rise of a class of non-hereditary elites, the so-called gentry.⁸

This bureaucratic reform coincided with another momentous transformation in taxation system. To ensure state revenue, Chinese imperial rulers throughout dynasties had actively engaged in the allocation of land to peasants who could in turn cultivate and contribute taxes. The well-known equal-field system (均田制) as practiced in Tang (618-907 AD) allocated land (授田) to male adult according to his productive capacity, upon which the state levied the so-called triple tax (租庸调). Depending on the category of land title, some of the allocated land could be returned back to the state once the cultivator left or deceased. The equal field system aimed at direct taxation on individual producers and the prevention of large scale land-holding and regional power base. It required strong administrative and coercive governmental power to tie labor down to an immobile factor, the land. However, in reality, state extractions or bureaucratic lapses often drove the farmers into the tax shelter of powerful regional lords, who, in turn, built upon both the productive and fighting capacities from their dependents to pose a constant threat to the throne.

In this light, the change from the triple tax system to the dual tax system (两税制) around 780 was a landmark transition. The dual tax system proposed by the then prime minister, Yang Yan (杨炎), shifted the taxation from labor to land irrespective of its ownership. This marked the beginning of a land-based taxation system which was to become the hall mark of Chinese fiscal regime all the way down to the 20th century. A taxation system targeting the immobile factor of land also enabled or led the state to eventually relinquish control and regulation of property rights in land, consolidating the path of recognizing de-facto private property rights and the development of a vibrant private land market that had originated in earlier dynasties. Corresponding to this transition in tax regime is the commutation of military conscription into tax payments, leading to change in military recruitment from

⁸ The gentry elites tended to reside locally and served the function of managing local affairs often in collaboration with the magistrates and governors. This layer of elites becomes an important intermediary between the masses and the state (Chang Chung-li).

forced conscription to professional recruitment. Hence, the *de-jure* imperial property rights in land and people began to transform into de-facto rights to taxation (Qian, chapter 2, Twitchett).

These institutional transformation, supported by the earlier invention of paper and block-printing and their widespread diffusion in Tang and Song dynasties had brought China to perhaps her most important historical turning points often termed as the Tang-Song transformation (8th-12th century) or China's so-called Medieval economic revolution under the Song (960 – 1280 AD) (Elvin, 1973, Quan 1976, Seo 1999, Twitchett, chapter 1, Qian, chapter 2). The transformations in fiscal and bureaucracy came to form what Wang Yanan claimed as the dual pillars of the traditional Chinese polities that were to have lasting consequences on long-term economic change in China (Wang 1981 chapter 8). The resultant political consequence is state-formation in China had decidedly tilted towards stable, unified central rule under one unitary imperial rule from the 14th century onward. The rise of Chinese absolutist central rule with long time horizon had also led a slow evolution towards fixing the target of annual taxation base (定额主义) at least in peace times, giving rise an ideology of the rule of benevolence based on the principle of low taxation and light corvee (Ray Huang, Iwai). The policy of fixed revenue allowed the private sector rather than the state to capture or claim all the residuals of economic expansion brought about by rising productivity, growing territory and population. It allowed the government to retreat from direct management or regulation of property rights in land and led to the rise of a system of a free-standing, family based owner-cum-tenant system of agricultural cultivation which was the dominance feature Chinese agrarian institution from the Song onward. These institutional changes born out of the framework of a centralized absolutist political regime generated a set of incentive structure conducive to a certain trajectory of extensive growth as demonstrated by the case of Qing China below.

II. The Case of Qing: 1644-1911

The Imperial Rule of Benevolence

The last and possibly the most powerful and centralized Chinese dynasty epitomizes the most prominent features of this political economy model in action. The Qing Imperial monarchy under the rule of Manchus, a non-Han Chinese minority from China's Northeast frontier, became a great

defender of orthodox Confucius ideology and a champion of a centralized political system. The more than two and half century under the Qing saw roughly a tripling of her population and a doubling of territory and ushered in China's prosperous 18th century, the so-called "Glorious World of Kangxi and Qianlong" (康乾盛世).

The road to the heyday of the 18th century prosperity started in 1644, the year of Qing's official inauguration. Like all previous rulers that managed to conquer a territory as vast as China, it takes about a further two decades for Qing army to achieve the complete suppression of the former Ming loyalists mostly based in the South of the Yangzi river. And it was not until 1683 under the reign of Kangxi emperor (1661-1722) that Qing managed to quash the rebellion of these so-called "three feudatories" and annexed their territories into Qing's centralized administration. Two years later, Kangxi finally broke the resistance of the rebellious naval kingdom of Zheng Chenggong and officially integrated the island of Taiwan into an administrative unit of China. In the final decades of the 17th century, the Qing contained the threat from an expansionary Russia by signing the Treaty of Nerchinsk in 1689 and conquered China's Northwestern territory in 1696. From 1720, Qing attained the control of Tibet with the installation of a new Dalai Lama (Jonathan Spence 1990). Clearly, by the early 18th century, the Qing succeeded in the consolidation of power and establishment of monopoly rule over historically China's largest ever territory.⁹

Figure 4 offers fresh insights into the timing of the famous declaration by Kangxi emperor in 1712 that there will be no additional taxes on newly added taxable population (续生人丁,永不加赋) and 1722 fiscal reform policy of consolidating head tax into land tax (摊丁入地), the total amount of which would be fixed to the level recorded in the national record of 1710 (Shen, p. 184). As shown in figure 4, these declarations came the end of more than half century's initial conquest of China where the number of recorded war incidences dropped sharply and continued to stabilize through the 18th century (until the sharp surge of the Opium war and Taiping rebellion of the mid-19th century). Indeed, going back to figure 1, we see eighteenth century as having one of the lowest number of recorded warfare in the entire span of more than two and half millennia.

⁹ Through the so-called tributary order, China extended its sphere of influence to East and Southeast Asia which recognized varying degrees of Chinese suzerainty.

Insert figure 4 and 5

Figure 5 seems to confirm the connection between incidences of warfare and fiscal extraction. Fiscal revenue (proxied by expenditure in the figure) from the early 18th century remains largely stationary until right before the mid-19th century outbreak of opium war and Taiping Rebellion. If deflated by rice price, real expenditure (or taxation) as shown in figure 4, actually declined throughout the 17-18th centuries and stabilized until the mid-19th century. If factoring in population, real per capita expenditure or tax burden declined even more sharply from the late-17th century. Converted into kilograms of rice, per capita Chinese taxation was remarkably modest, amounting to something like two or three days of the wage earnings of an unskilled laborer (see Allen et al forthcoming for Chinese laborers' wage earnings). This seems consistent with Wang Yeh-chien's more comprehensive calculation of tax revenue (which included guess-estimates for costs of tax collection as well as various extralegal local surcharges) as amounting to merely 2.4% of NNP even in the 1910s (p. 133). If Wang's figure could be relied on for the 1910s, we have reason to believe government revenue as percentage of GDP would be even lower for the 18th century.

It is possible that Qing tax rates were the lowest across dynasties especially in per capita terms. Liu Guanglin's study also seems to reveal that per capita tax burden in Qing around 1776 were probably the lowest across several benchmarks period since the Song dynasty. It is likely that the size of Qing standing army around the 18th century at about eight hundred thousand was lower in absolute number than both those in Ming and Song despite the enormous population increase (Iwai, p. 33). Even K'ang-xi himself gloated that "in our Dynasty, the total sum of military and civil expenses is about the same as that of the Ming period. But speaking of the Court expenses, the aggregate amount spent by the Court is even less than that for one palace of the Imperial Concubines. The accumulated sum of the past 36 years is less than that spent in one year's time during the Ming." (cited in Chang te-ch'ang, p. 271.) The glorious world of Kangxi and Qianlong were memorialized by the renowned late-Qing bureaucratic reformer in the final decades of the 19th century. At a time when Qing was besieged by internal rebellion and Western imperialism, Zhang poignantly reminded the nation that the Qing regime under the glorious years of Kangxi and Qianlong, had frozen the annual target of fiscal revenue to

possibly the lowest level in history, granted numerous tax exemptions in times of bad harvest, all out of the rulers' benevolence towards their people (Zhang Zhidong, pp. 19-21).

We now place the Chinese government revenue in international comparison in Tables 1 and 2 thanks to the recent works of Kivanc Karaman and Sevket Pamuk. Table 1 shows that although the total nominal Chinese governmental revenue in silver tons were higher than any of the European states or Ottoman in the latter half of the seventeenth century and remained one of the largest throughout the eighteenth century, this is largely a reflection of China's enormous population size, roughly ten times that of the Ottoman Empire, Russia or France individually during the 18th century. In per capita terms, Chinese tax burden as revealed in Table 2 ranked the lowest among the seven states. Overall by the 18th century, China, the Ottoman and Russia ranked at the lower end while England and the Dutch end stood at the other end, with France and Spain in between.

While Qing government revenue remained largely stagnant or declined slightly in real terms, they rose in Britain by a stunning 17 fold from 1665 to 1815. The total British revenue as a share of national income before the Glorious Revolution of 1688, at slightly more than 3% - a rate not drastically different from that of the Qing in the 18-19th century – surged to about 18% by 1810 (O'Brien 1988, p. 3). This leads to the stark contrast that the end of the first half of the nineteenth century when China confronted England in the infamous Opium War, its central government total revenue amounted to only 24% of tax receipts at the Exchequer of Britain and in per capita terms was a shocking 1% of the British level.

Insert Tables 1 and 2

The surge in British tax receipts came disproportionately from indirect taxes such as customs and excise duties, which accounted for nearly 80% of total revenue towards the end of the 18th century (O'Brien 1988, pp. 9-10). The Chinese tax revenue revealed a predominance of land tax. For 1776, on the revenue side, nearly 70% of total revenue was derived from land tax alone with the remainder coming from some form of commercial taxes. Only about 22% were collected in kind (Wang 1973, p. 80). On the expenditure side, about 50% were expended on direct payment to soldiers and another 17%

gone to paying for the salaries of officials and bureaucrats. Expenditure on public goods such as maintenance of river transport or famine relief seemed to be only slightly above 10%.¹⁰

The Center and the Local

The surprisingly small tax revenue needs to be interpreted in the larger context of Chinese fiscal regime particularly at the local level. In accordance with a ruler-dominated political structure, the traditional Chinese taxation system was highly centralized with most of the collected revenue accrued or allocated by the Imperial fiscal administration: the Board of Revenue. Local finance or fiscal needs at the county level where the lowest level of official bureaucracy resided figured little in this system. However, as the collection of taxes from highly dispersed and decentralized producing or marketing units across a giant empire and its remittance to the center or other regions entailed costs, the Qing government distinguished retained tax (存留) from and remitted ones (起运). In principle, the retained revenue formed the local budget to cover expenses for tax collection and local administration. But as Madeleine Zelin (p. 28) shows that retained revenue were only about 21.5% of total revenue in 1685. Even among this 21.5%, the bulk of it was expended for local expenses connected with the center such as the provision for imperial armies and imperial relay station.

It has long been recognized that the official tax revenue allocated to the local government fell far short of the requirements of normal administration, often insufficient to cover the salaries of official bureaucrats, let alone their expenses and support staffs. Over time, it had become a tolerated practice for almost all levels of bureaucrats to turn to informal or the infamous extralegal surcharges (苛捐杂税) beyond the official level. At the local level, administration needs led the county magistrates to employ a large number of secretaries, clerks, runners and personal servants. Yet none of these staffs were on the official rolls and were employed personally by the magistrates out of these extralegal extractions. Indeed, as these non-official staffs were far more entrenched locally than the official staff assigned in a

¹⁰ See Shi Zhihong, p. 68. Iwai, p. 32. Although the Imperial court or the so-called Nei-wu-fu (内务府) took in a mere 1% of the total budget, it had its own source of revenue and expenditure outside the official balance sheet of the board of revenue, see Chang te-ch'ang.

system of three year rotation system, there developed the serious asymmetric information at the county level.

Zelin's study documents in detail the sources of these revenue ranging from the levying of various surcharges, manipulation of weights and measures and currency conversion in tax collection, falsifying reports, shifting funds across fiscal season years, retaining commercial tax revenue, hoarding tax revenue from newly claimed land and exacting contributions and donations from local farmers or merchants. Provincial level officials and their "unofficial" staffs relied on the extraction of gifts and contributions from the lower level officials and engaged in practises such as skimming funds off in purchase and allocation (buying at low price but reporting at high price) (Zelin, pp.46-71).

Reliance on informal local taxation and the employment of unofficial staffs for public administration often led to the privatization of public services. Ch'u Tung-tsu's classic book on Qing local government offers a vivid portrayal of county clerks extracting bribes with the threat of delaying legal cases submitted, runners demanding so-called "chain-release money" from the families of the accused criminals who would otherwise have been put under chain and torture, retaining part of the "recovered goods" from theft or robbery, or sometimes resorting to outright extortion of wealthy residents with false accusations, even the porters guiding the magistrate's office would demand pay for handing in documents or warrants. All in all, clerks, runners and personal servants often collaborated in sharing the spoils of corruption.

This kind of nexus of corruption at the local level is a pale reflection of the much larger networks of collusion at different levels of the state machinery. Although levels of extraction are hierarchical from the provincial level down, deceit and collaboration were mutual across levels, creating layers of cover-ups among the officials and staffs that would frustrate imperial attempts to audit and inspect the expense accounts. Some shocking cases revealed that sometimes staffs kept duplicate set of account books, with the set for local use marked by secret codes impenetrable from the official examination. These special types of account books even circulated informally within a fairly wide area (Zelin p.240). Official collusion could also backfire in unexpected directions. Due to the legal ambiguity of many of the surcharges, Iwai cited a case in 18th century where local officials were

blackmailed into paying off a share of the surcharges to a local gentry as a award for keeping quiet on the malfeasance (Iwai, p.3-4).

Local extralegal extractions had seriously compromised the so-called imperial objective of benevolence rule and constituted much of the reverse image of Qing being highly predatory, especially at the local level. Imposition of often arbitrary extralegal taxation created uncertainty and insecurity to the property rights of farmers and merchants. The insufficiency of local finance under a fixed target of fiscal budget should not come as a surprise given the enormous increase in population in Chinese history. As pointed out by G. William Skinner, China in the 1720s had fewer county-level administrative units than it had had in the Han dynasty (206BC – 220AD), which had far smaller population and territory. To match the ratio of population to administrative units as in Han, China would necessitate 8500 administrative counties rather than 1360 in the 1720s. And to fund these administrative expenses at that level would take the entire land and head taxes of the Qing in the 1720s (Zelin, p. 306). In the next section, I argue that the fundamental contradiction between the Qing imperial ideology of benevolence based on fixed target of taxation and their toleration and reliance on informal extraction at the lower level is partly political economy outcome of the traditional Chinese state.

III. The Great Divergence

States in Western Europe

In a recent exposition, North, Wallis and Weingast (2009) defined the major role of the traditional state (largely based on the European history) as to reduce the problem of endemic violence through the formation of a dominant coalition whose members acquire the privileges to share economic rents from peace and stability (also see Volckart for a formulation of “protection rents” by rulers). One unique feature of the Medieval Western European institution is, as emphasized by Greif (2006), “corporatism” where propertied and wealthy elites had direct access to political power through some form of political representation. This is coupled with the sustained political fragmentation marked by an amalgam of decentralized, small scale and autonomous political units in the form feudal fiefdoms, kingdoms or city-states. Hence, not surprisingly, towns and city-states in Western Europe, due to their

compact size and the dominant representation of commercial interest, could resolve the kind of incentive misalignment and asymmetric information problems far better than large empires ruled by sheer military or political coercion and emerge as the seat of institutional innovation and forerunners of modern capitalism.

Given these differential initial conditions in Western Europe, prolonged and sustained inter-state warfare in Europe which gave rise to heightened demand for mobilizing resources led to divergent trajectories of state building. In city-states or federation of city-states (such as Northern Italy and Holland), warfare mobilization led to the rise of what Charles Tilly referred to as capital-intensive path versus the coercion-intensive path followed by larger empires such as Russia and Ottoman where the interest of the commercial elites were subdued and representative institution were weak or non-existent. In capital-intensive path, war mobilization the accelerated the development of financial and fiscal institution marked by the rise of public debt and commercial taxation. These development undertaken in the hands of commercial and landed elites were crucial for the rise of what North and Weingast (1989) would refer to as “credible commitment” from the state.

The transmission of this state backed “credible commitment” mechanism to England in the 17th century allowed the transfer of financial and fiscal innovation developed under much smaller political units to a much larger territory (Epstein 2000, North and Weingast 1989). By European standard, the English state from the Medieval period was relatively centralized, especially its representative institution, the Parliament, which was organized from very early on a national scale to bargain collectively with the English monarchy. The ascendancy of a national parliament following the Glorious Revolution of 1688 served as an important node and forum for transmitting information and interests of the dominant coalition of the landed and commercial elites and as a the stake holders of the wealthy segment of the national economy. In some sense, the national parliament centralized rent-seeking in England as contrasted with other more decentralized absolutist states such as Spain and France where faction-based or parcelized rent-seeking persisted in states such as France and Spain where rising fiscal needs increased state dependence on tax-farming, venality, and other short-term measures susceptible to corruption (Mokyr and Nye). This British model of political governance is essentially corporate in the sense that its stake holders, through tax contribution, acquired the right to

oversee the executive power. This corporatist character was crucial to the rise of 17th century financial revolution and the development of a professional, routinized and accountable bureaucracy, which more than tripled between the 1690s and the 1780s (Brewer, pp. 66-67).

The evolution of Western political regimes reveals the importance of how economic rents from the reduction of violence and protection of property rights are generated, controlled and distributed. In a corporate model of governance, rents were firmly in the hands of a dominant coalition whose membership and representation were defined by wealth and property. As changes in wealth and prosperity led to shifts in coalition and political powers, they in turn lead to a process of creative-destruction where larger and newer rents were generated partly through inter-state competition.¹¹

The Chinese State

In China, the scaling-up of inter-state competition at a much earlier historical period led to the unification under a centralized state with large-scale coercion and direct administrative rule. The elimination or marginalization of aristocracy or nobility allowed the Chinese imperial rulers to capture exclusively the economic rents from the reduction of violence. The stand-alone nature of Chinese rulers was consistent with countless historical examples of the rulers turning against the landed or commercial elites as well as bureaucrats.¹² Because of the relatively unchanged size of the imperial household or lineage (which could cap the size of rulers' appetites for luxury consumption), the massive information and incentive problem embedded in administrative bureaucracy of a growing empire and the danger of revolt from fiscal over-extraction, the imperial tax structure gradually switched to a fixed target of revenue, something equivalent to a landlord's choice of a fixed rent contract adopted in a agrarian setting.

The above logic can explain that the apparent contradiction between the Qing imperial ideology of benevolence based on fixed target of taxation and their toleration and to certain degree, reliance on informal extraction at the lower level. For the imperial rulers, as the primary function of

¹¹ See Khan 2000 for an exposition of the so-called Schumpeterian rents.

¹² For Ming emperors' brutal punishment of landlords and bureaucrats and , see Liang, p.85. Huang counted in detail the sorry fate of all the 89 most ministers of Revenue under the Ming from 1380, pp.13-14. For a critique of how this important distinction between Chinese and Western political regime had been blurred by the dogmatic application of Marxist ideology in China. See Deng. See Liang and Meng 1991 for the dominance of Imperial lineage in Ming and Qing.

the official bureaucracy was to collect taxes, the switch to a fixed target of a tax revenue at the central level was compatible with a system of fixed number of bureaucracy and administrative units in spite of the population increase. Indeed, in the absence of monitoring capacity, any imperial attempts to expand the official tax base often ended up legitimizing a higher tax target without curbing unofficial extractions. On the other hand, given the hierarchical command structure, any “visible” bases of tax revenue at the lower level faced the risk of extraction from the top. Hence informal taxation, being outside the official purview, ironically became the most secure source of local finance.¹³

As the imperial ruler’s stake was limited to the fixed target of revenue, his incentive to monitor tax collection was limited to the extent that abuses at the local level did not threaten political and social stability. In this regard, the imperial ruler’s preferred strategy was to connive local corruption most of which were - given the implausibly low official stipend - essential for the running of the empire. Meanwhile they would choose to selectively punish what they viewed as excessive abuses that could directly threaten the political stability and severely tarnish the moral high ground of imperial benevolence especially in times of lax discipline.¹⁴ When in times of distress, the rulers always had the discretion of resorting to the so-called “extraordinary means” ranging from outright confiscation, forced contribution, monetary debasement and the sale of official titles or Civil-service examination degrees, all of which had been practised, for example, during the devastating mid-19th century Taiping rebellion.

As distinguished from Western Europe, we can see that in the Chinese case, economic rents derived from the control of violence were firmly in the hands of political interest divorced from those of commercial and property interest. Indeed with the Imperial ruling interest having a small stake in or gain from the growth of the economy, the Qing government turned into what Avner Greif (2005)

¹³ The well-known fiscal reform carried out by the Yongzheng emperor from 1724 illustrates this fundamental dilemma. The energetic Yongzheng emperors adopted policies to increase surcharges to land taxes, which were, in essence, a legitimization of previously “illegal” extractions as local finance. While achieving some degree of success, the Yongzheng reform were largely abandoned towards the end of the 18th century as it could not solve the dual problems of the inability of the higher administration to monitor the use of local revenue and the tendency for upper level bureaucracy to engage in extraction and re-allocation of revenue designed for local use, see Zelin.

¹⁴ See an unusually frank dialogue where Yongzheng emperor was brought home the serious shortfall of local finance and the extent of reliance on local extra-legal surcharge. I want to thank He Ping for this reference this reference. For periodic and selective capital punishment on the so-called “economic crime” meted out to high level government officials see He Ping, pp.293-5.

termed as the absent government whose formal power rarely reached into economic or commercial areas where direct political interest was not threatened. It is clear that by the 18th century, the bulk of Qing involvement in the private sector by the 18th century such as tax exemption and famine relief aimed at risk reduction and social stability.

While some rents were dissipated through the bureaucracy as an imperial compromise to the information and incentive problems, they were highly decentralized and largely hidden in the form of extra-legal surcharge or corruption which often had distortionary effects on economic incentives (Schleifer and Vishny). More importantly, as any visible rents in an autocratic regime faced the risk of appropriation, the massive withholding of private information became the norm at every level of the society, which rents had long-term consequences. If the mechanism of credible commitment can be viewed as the outcome of a political bargaining process that reshuffled political coalition to redistribute and stabilize rents, the “invisibility” of rents would not even get the process towards credible commitment rolling. In the absence of credible commitment, credit relationship between states and private agent was hard to sustain shown in the numerous instances of “private lending” to the state being converted to forced contributions (Zhou Yumin).¹⁵

In the absence of a market for public debt, private interest rates remained at least 12% with wide variations during the 17th century, a rate that was possibly three times the level of that in England and the Netherlands (Peng et al., 2006, Epstein 2000). This is exactly the reverse of comparison on wage rates of unskilled urban workers where the comparable Chinese rate was only a third of that in those two European countries (Allen et al. forthcoming). A large question that needs to be asked is whether the contrast in factor endowments – the much higher capital-labour ratio and thus the lower price of capital relative to labour in Europe than in China – was not exogenous, but rather an endogenous outcome of the rise of organized financial intermediaries in Western Europe. If we believe Robert Allen’s recent argument on the importance of differential factor prices – a relatively higher ratio of

¹⁵ Even China’s highest authority of imperial revenue had difficulty to refuse extraction from the emperors. In a memorial sent by the Board of Revenue to the Emperor in 1872, the minister stated: “A line must be drawn between the *Nei-wu-fu* (the Imperial Household) and the government Treasury which has been established by our early ancestors... The revenue of this Board is fixed, but the borrowing of the *Nei-wu-fu* is indefinite. During these recent years, ... We request your majesty to instruct the *Nei-wu-fu* to observe faithfully the tradition:... so that unnecessary expenses can be curtailed and national revenue can be preserved.... (Chang, p. 269).

wages to those of capital and resources prices in England than in China – was instrumental in inducing Industrial Revolution in England rather than in China, I argue these differential factor prices themselves need to be explained rather than taken as given.

Conclusion

Through a narrative model of the Chinese state, this article stresses the importance of institutions as a determinant to both the long-run economic growth and the great divergence between China and Western Europe in the early modern era. It shows that the corporate model of states that evolved in Western Europe helped resolve some of the fundamental incentive and information problems embedded in a centralized and hierarchical political structure. In a corporate model of the state, the security of property rights and freedom from extraction is no longer tied to the time horizon of the rulers, who were transformed into executive powers guided by the interest of the stake-holders. In an absolutist regime, while the reliance on governmental commitment to property rights and political stability through monopoly of power and long time-horizon of rule could lead to a virtuous equilibrium of low-extraction and the operation of a relatively free private economy, it could have long-term consequences. The massive withholding of private information among the actors, while effectively tying the grabbing hands of an absolutist state, often, simultaneously weakens the societal capacity to organize collective action and severely curtails possibilities for institutional change within the political regime.

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Table 1. Chinese Dynasties, Years of Unification and Incidences of Warfare

Chinese Dynasties	Years	Number of Years per dynasty	Years China was Unified	Number of years Unified	Number of recorded warfare	Average number of warfare per year
Spring and Autumn Period 春秋	770 BC — 476 BC	294			395	1.34
Warring States Period 戰國	475 BC — 221 BC	254			230	0.91
Qin 秦	221 BC — 206 BC	15	221BC - 209 BC	15	10	0.67
Western Han 西漢	206 BC — AD 24	229	111BC - AD 22	132	124	0.54
Eastern Han 東漢	25 — 220	195	50 - 184	134	277	1.42
Three Kingdoms 三國	220 — 265	45			71	1.58
Western Jin 西晉	265 — 317	52	280-301	21	84	1.62
Eastern Jin 東晉	317 — 420	103			272	2.64
Southern and Northern Dynasties 南北朝	420 — 589	169			178	1.05
Sui 隋	581 - 618	37	589-616	27	88	2.38
Tang 唐	618 — 907	289	624-755	131	193	0.67
Five Dynasties and Ten Kingdoms 五代十國	907 — 960	53			73	1.38
Northern Song 北宋	960 — 1127	167			255	1.53
Southern Song 南宋	1127 — 1279	152			294	1.93
Yuan 元	1280 — 1368	88	1279-1351	72	204	2.32
Ming 明	1368 — 1644	276	1382-1618	236	578	2.09
Qing 清	1644 — 1911	268	1683-1850	167	426	1.59
Total		2686		935	3752	1.40

Source: Number of Years China was unified one rule was calculated from Ge Jianxiong, 2008 pp. 218-224; Number of warfare calculated from China's Military History Editorial Committee (ed.), *A Chronology of Warfare in Dynastic China (Zhongguo Lidai Zhanzheng Nianbiao)*.

Table 2. Qing Central Government Revenue in Comparison (Tons of Silver)

	China	Ottoman	Russia	France	Spain	England	Dutch Rp	Venice
1650-99	940	248	68	851	243	239		78
1700-49	1304	294	155	932	312	632	310	84
1750-99	1229	263	492	1612	618	1370	350	91
1800-49	1367		1959			6156		

Source: China same as figure. Other countries are from Kivanc Karaman and Sevket Pamuk. My special thanks go to Karaman Pamuk. I want to thank Kivanc Karaman and Sevket Pamuk for sharing their revenue data sets.

Conversion notes: one Chinese silver tael = 37 grams of silver.

Table 3. Comparison of per capita Tax burden (in grams)

	China	Ottoman	Russia	France	Spain	England	Dutch R
1650-99	7.0	11.8	6.2	46.0	35.8	45.1	
1700-49	7.2	15.5	11.1	46.6	41.6	93.5	161.1
1750-99	4.2	12.9	22.1	66.4	63.1	158.4	170.7
1800-49	3.4		41.7			303.8	

Source: same as Table 2.

Map: Chinese territory under Ming and Qing

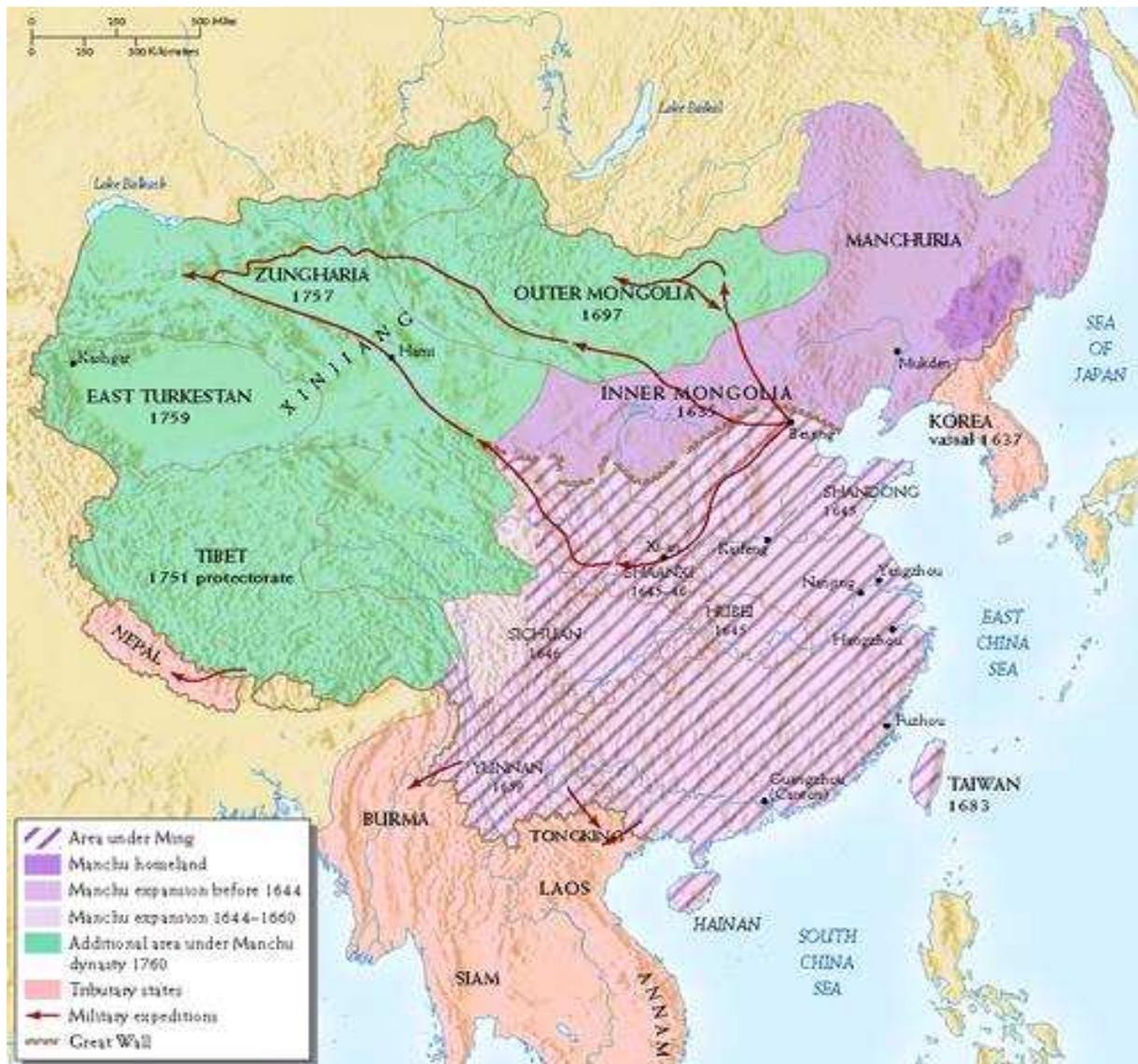
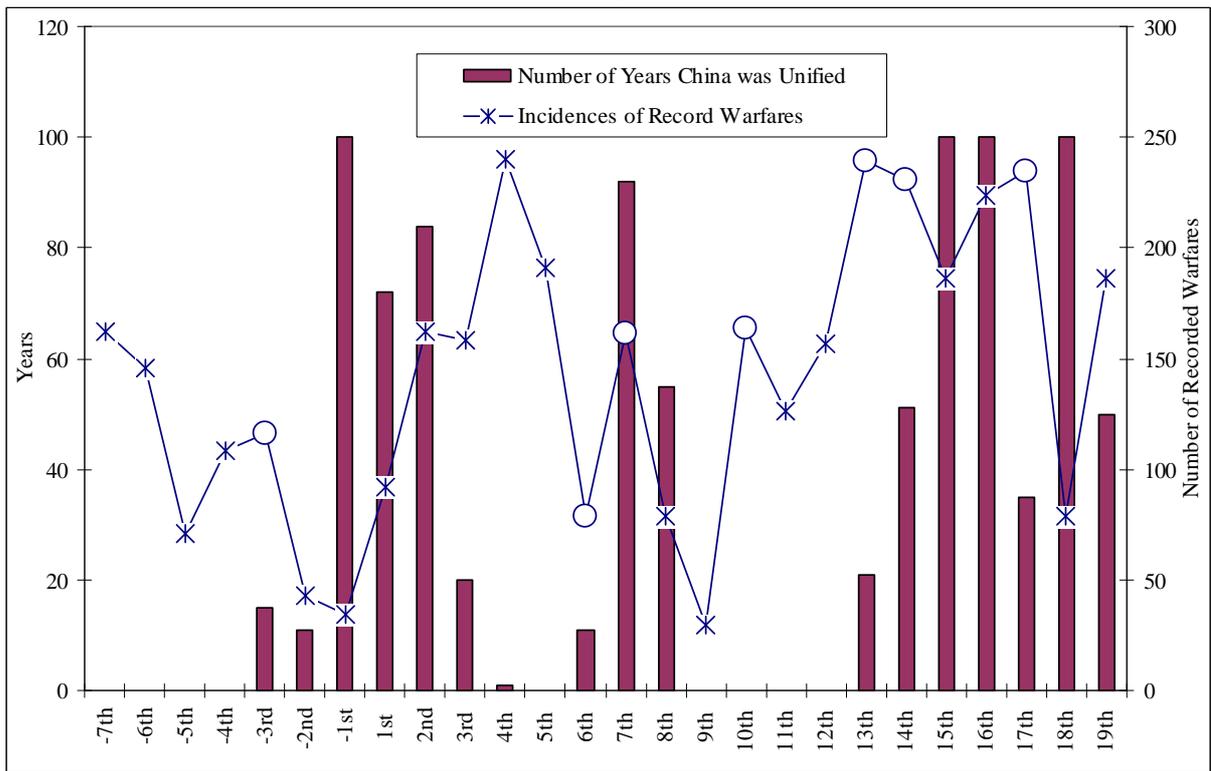
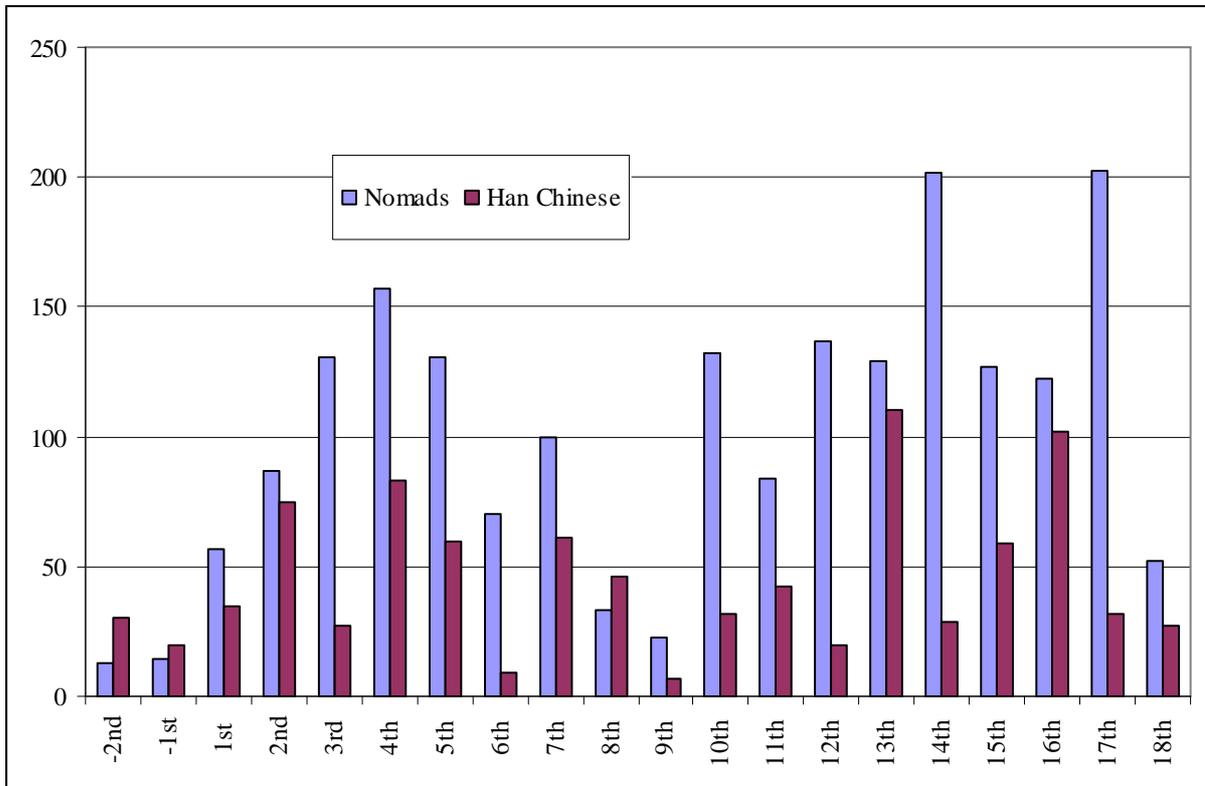


Figure 1. Number of Recorded Warfare and Number of Years China was Unified per each Century



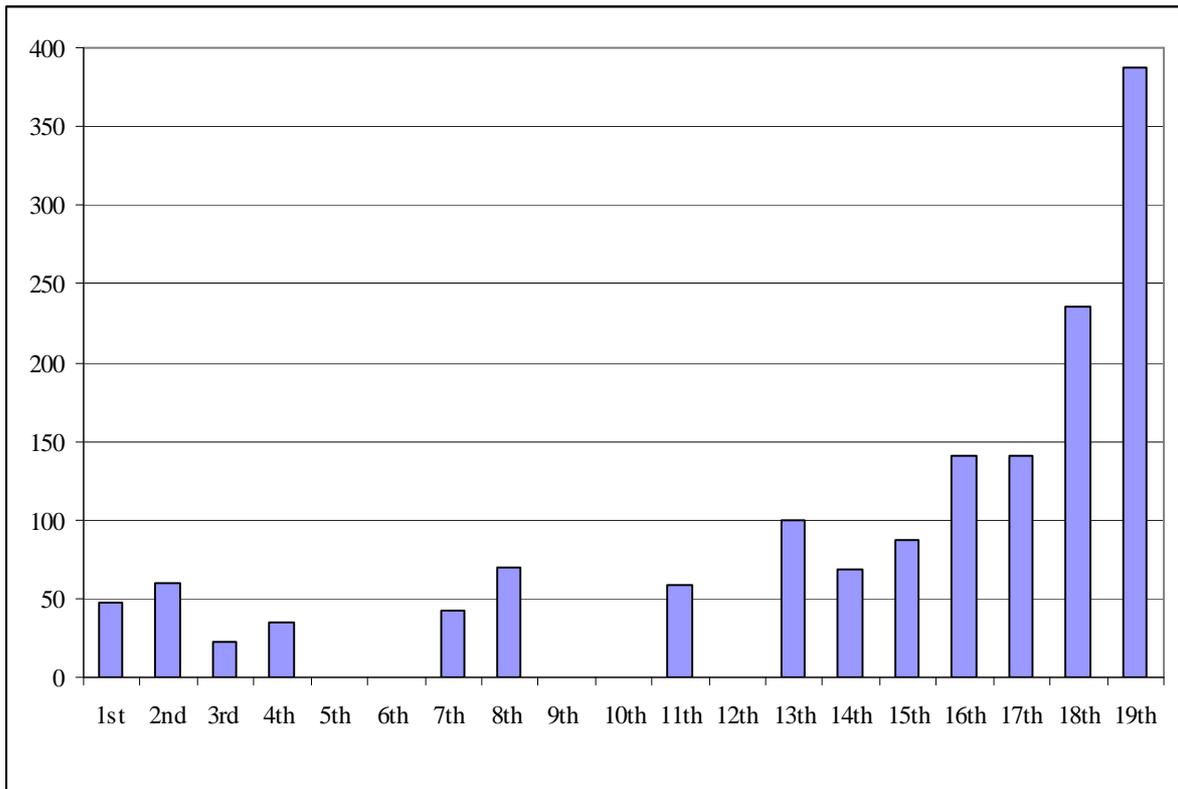
Sources: same as Table 1.

Figure 2. Number of Recorded Chinese Warfare per Century with Nomads and with Han Chinese themselves



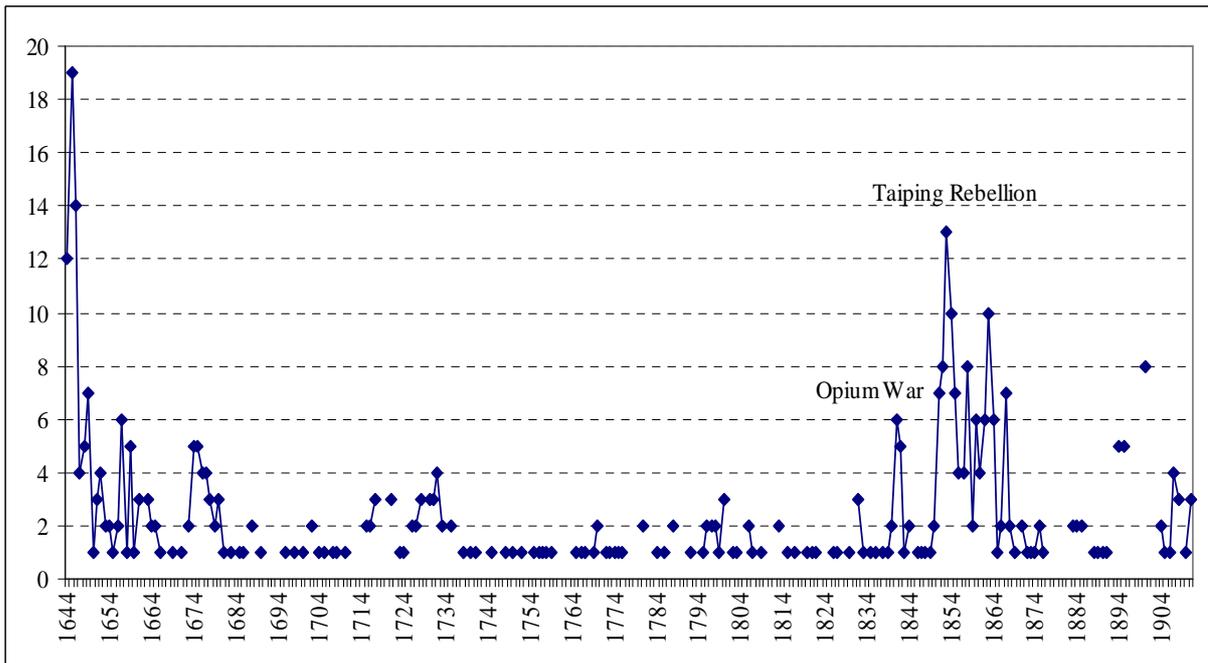
Source and notes: same as Table 1. Number of warfare with nomads are calculated by Bai and Kung, the number of Han Chinese warfare is equal to the total subtracted by the that with the nomads. I express my special thanks to Bai and Kung for sharing their datasets on nomadic-Chinese Warfare.

Figure 3. Two Millennia um Trends of Chinese Population in Millions



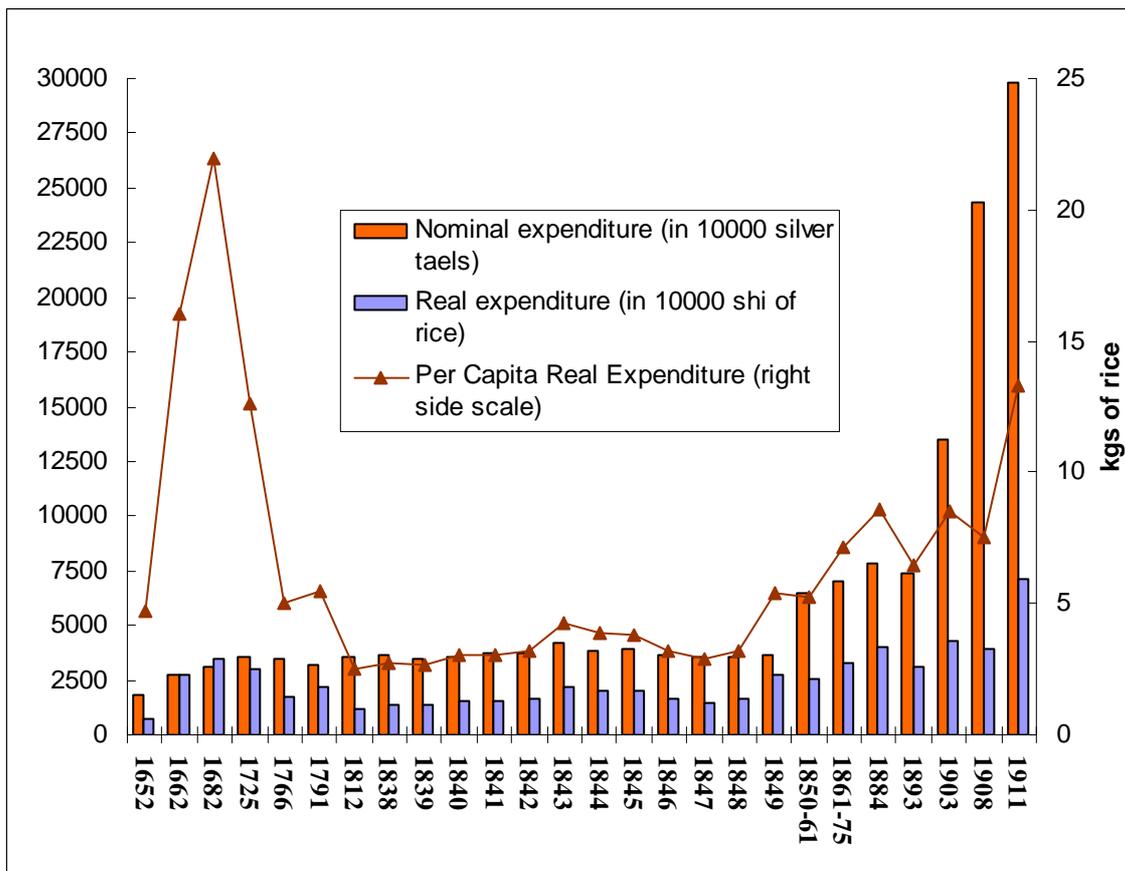
Sources: population figures for the available years are 2, 24, 140, 220, 300, 609, 622, 755, 1000, 1280, 1380 the century average for 1400 AD afterward. Population figures before 1000 from Chao Shuji, pp. 831-2, the year after 1000 AD from Maddison Table D.1.

Figure 4. Annual Average of Recorded Incidences of Warfare in Qing (1644-1911)



China's Military History Editorial Committee (ed.), *A Chronology of Warfare in Dynastic China* (*Zhongguo Lidai Zhanzheng Nianbiao*).

Figure 5. Government Expenditure (Revenue) in Qing China



Source Notes: Fiscal data from Iwai, Table 2, p.37. Hamashita p. 73, Population data from Maddison 2007 and Lower Yangzi grain price from Wang Yeh-chien was used to deflate the nominal series.