

## Chapter 1 China as a Nation <sup>1</sup>

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### Summary

With its unification ca. 221 BC, China is one of the oldest states today. The character of this unification consisted of the creation of a transport network connecting all regions of the Empire together; a form of Legalism, later incorporated in Confucianism, in which people should support the state; and an education system geared to maintain state rule. These three factors were the ties that held otherwise fragile empire together over subsequent millennia. Each time a dynasty came to an end, the subsequent dynasty used these three factors to obtain support (via taxes, obedient civil servants, and pacifying the population). This led to a pattern of rising dynasties, making full use of these factors while, over time, weakening and leaving more power to market forces. Even though weakening from the Qing dynasty onwards, this pattern continued until today leading not only to faster economic development but also to dynastic change.

### 1.1 Introduction

China is one of the oldest unified states in the world that has persisted until today. At the end of the Warring States period (ca. 475-221 BC), during which all regions were competing for control, the Qin dynasty (221-206 BC) rose to power by a series of victories over competing states. This resulted in China's unification in 221 BC. One reason for the success of the Qin was its location at the heartland of Shaanxi province, which was effectively shielded from invasions while, simultaneously, allowing access to the large fields in the north of China (Peralta 2014). Moreover, it managed to exploit the resources of the country – basically men and land – more intensively than its competitors, creating a solid basis for its ultimate victory.

The unification of China by the Qin was already viewed as important at the time. For example, in the following dynasty (Han, 206 BC-AD 220), in the history of the Han (Hanshu) it was already said that “the Qin unified the world” (Swann 1950). Moreover, three interrelated sets of ideas and policies introduced by the Qin laid the basis for the state that persisted until today. First, the introduction of Legalism as the basic philosophy of the state to replace Confucianism. Where the latter was essentially preaching the good of the people and the importance of family and education, the former developed during the Warring States period characterized by intense warfare, essentially started from the belief it was the task of the state to direct all persons for the good of the state, and that people derived their value from their usefulness for the state. Related to this is a second aspect, namely a distrust of education. Since

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<sup>1</sup> The research leading to these results received funding from the European Research Council under the European Union's Horizon 2020 Programme / ERC-StG 637695 – HinDI, as part of the project "The historical dynamics of industrialization in Northwestern Europe and China ca. 1800–2010: a regional interpretation".

education might drive people to independent thinking and criticism of the state, it was discouraged, books were burned and scholars executed. Even though this latter policy was reversed during the following Han dynasty, the prominence of the state remained an important feature of the education system. Third, the Qin also started to build the physical infrastructure that would unite China such as the Great Wall and the Grand Canal.

This unification has lasted essentially until the present day. Even though China has known major dynastic cycles, and even extended periods during which different political entities were competing over control over the entire Empire, the (gradually expanding) territory of the Empire remained the basic framework for these cycles and this competition. Likewise, the three policies were to some extent continued. Whereas, after the fall of the Qin, the policy of Legalism was reversed and again replaced by Confucianism which was mixed with a soft form of Legalism. For example schooling was resurrected to a certain extent, but only for the benefit of creating a class of loyal government officials to feed the bureaucracy (the famous civil examination system). Third, the trade links established by the Grand Canal as well as those created by other infrastructural projects made it possible for new rulers to extract tribute from various regions of China as soon as they took over power. Hence, new dynasties were able to fully make use of this system.

China as a state did not remain unchanged after the Qin, of course. In terms of population, an indicator of political and economic change, the center of gravity of the empire was relocated in the course of its long existence. The ancient heart land of the empire was in the north, in the Yellow River valley, with capital cities such as Xi'An (home of the first emperor) and Kaifeng (capital during the northern Sung 960-1127). Part of the population migrated to the south, to the Yangtze valley (and even further south, to the Pearl River valley), driving out the non-Han population. The Yangtze valley became, from the southern Sung onwards, the economic center of gravity, which it has remained until today. During the Qing a further expansion to the north, the east and the south-east occurred – incorporating new regions such as Tibet, Xinjiang and Manchuria and Taiwan.

Until about 1500, when the geography of world trade changed dramatically, China was the eastern hub of the great Silk Road, which in practice was a set of interrelated caravan routes that connected the empire with India, Persia and the Middle East. The world economy was dominated by an urban belt stretching from Egypt and the Ottoman Empire to the great metropolises of China, which together formed the core area of world trade and industry. During the Han dynasty (206 BC- 220 AD), intense commercial exchange following this network connected China with the Roman Empire; similarly, the Sung dynasty (960-1279) coincided with the flowering of Arab world. In particular when strong states dominated both ends of the Silk route, which facilitated commercial exchange via the 'law and order', and/or when the regions in between the two nodes were unified in one polity – as during the great Mongol empire of the 13<sup>th</sup> and 14<sup>th</sup> century – trade via these routes expanded rapidly and connected the great cities of east and west into one dynamic urban system (Abu-Lughod 1989). Europe, and in particular Western Europe, was at the margin of this commercial system, until the rise of the Italian city states (Venice, Genova). But from the late Middle Ages onwards, Western Europe became increasingly dynamic, and in the 15<sup>th</sup> and 16<sup>th</sup> century developed new commercial routes – basically via the circumvention of Africa – that would fundamentally change the geography of international trade in the 17<sup>th</sup> to 19<sup>th</sup> centuries. Initially, the European commercial enterprises such as the Dutch East India Company were relatively weak compared with the huge powers of the Chinese empire. The Dutch, for example, tried to establish a strong basis on the island of Taiwan, but was unable to control it. The terms

of the international trade were set by the Empire, which during much of the 17<sup>th</sup> and 18<sup>th</sup> century only allowed trade to take place in Quandong (Kanton/Guangzhou). In the early 19<sup>th</sup> century this changed dramatically, as the First Opium War (1839-1842) demonstrated forcefully. From then on, while the power of the Chinese state declined even further, it became humiliated by foreign powers – the British at first, but soon followed by all major western countries. It set in motion (or rather accelerated) a process of fragmentation of state power that ended in the long war with Japan (1937-1945) and the civil war that followed in its footsteps.

In Section 2 we first take a closer look at the dynastic cycles, finding that the end of a dynasty, which was often accompanied by massive warfare, experienced population declines. The dynastic cycle theory is further confirmed by looking at population indicators such as the urban primacy, i.e. the share of the capital city in total population which is often considered a proxy for the extractive capacity of the state and which declined at the end of dynasties. This pattern changed during the Qing dynasty. Even though the dynastic cycles remained, urban primacy had already been weak from the beginning, only to decrease even further over the course of the dynasty and the subsequent Republican period. In order to understand why these patterns of strong and weak state capacity existed and why it reduced (though not disappeared) during the Qing and after, in Sections 3 and 4 we deal with the two aspects (centralization and the civil examination system) of a proxy of state success: a strong bureaucracy. This gives us a measure of state success but does not link to economic development. Hence, in Section 5 we will turn to its meaning for economic development by referring to what is called the Needham puzzle, i.e. why Chinese development was at or above the level of that of Europe of the 15<sup>th</sup> century, and why did it fall behind later.

## 1.2 Population development and state capacity

As pointed out above, the various dynasties since the Qin moved away from a patriarchal system in which the ruler shared power with his subjects to one of autocratic rule resulting in massive building of infrastructure, a theory of obedience to the state, and (eventually) an education system to educate reliable civil servants. Both Elvin (1973) and Von Glahn (2016) claim that the rise of metalworking is one of the reasons for this shift as it increased the value of a standing army under one ruler.

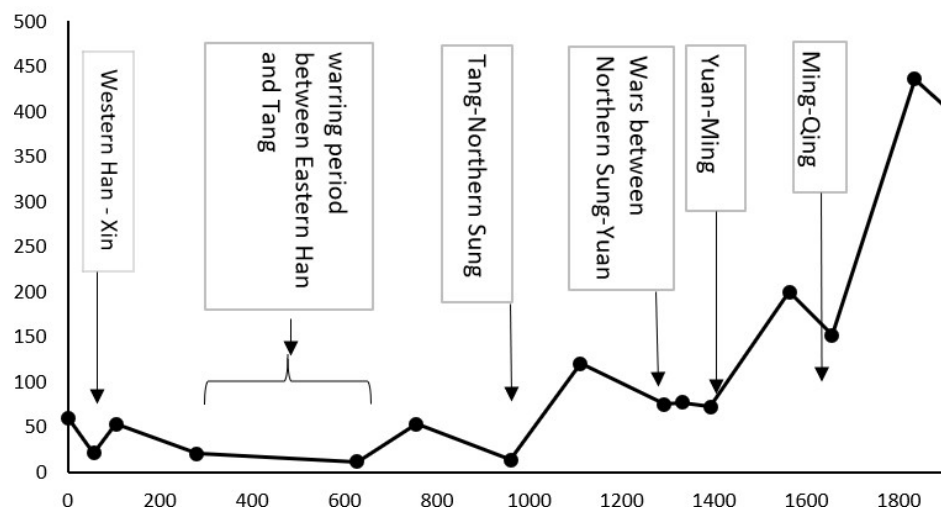
But, as likewise is pointed out before, state power was not the same either during, or between, dynasties. For example, in the Eastern Han dynasty (25-220 AD) witnessed during its course a shift away from its autocratic mode into a more market-oriented system; something that also led to increased land inequality that lasted well into the subsequent warring period of the Three Kingdoms (AD 220-280) (Von Glahn 2016). At the end of this period, stability, together with autocracy, returned, only to be strengthened during the following Jin dynasty (AD 265-420) that once again united China. Likewise, during the Tang dynasty (AD 618-907) we see a move away from state regulated fiscal state towards the end of the reign (Von Glahn 2016, 206) extending again in the period of turmoil during the subsequent Five Dynasties and Ten Kingdoms period (AD 907-960).

Discussions on subsequent dynasties from Song (960-1279), Ming (1368-1644), and Qing (1636-1912) varies. Von Glahn (2016) essentially argues for a gradual development of market forces over time, while Elvin (1983) favours a fast development during the Song, followed by a stable system with the exception of the highly disruptive Yuan dynasty (1271-1368). Whereas we agree with Von Glahn to some extent, we have to stress that this move towards market related forces, combined with declining state

capacity, was still very limited. As we will point out in subsequent Sections, even though less severe than in previous dynasties, also the first Ming emperors were strong rulers that aimed to impose various kind of restrictions on society, for example by introducing an integrated monetary system. In that respect the Song did not prove to be a watershed. This was different during the Qing, however. Being a non-Han (i.e. Manchu) dynasty, its pressure, in taxation or otherwise, on society was much more limited. Yet, even during the Qing we witness an increasing rise of market forces over time, something that continued during the Republic of China period (1911-1948), which was once more characterised by warfare. This continuous pattern of strong states, followed by a process of weakening together with the rise of market forces may even be argued to persist until today with the initial phase of New China (1948-present) being characterised by a much stronger role of the state while market forces increasingly seem to take over since the 1980s.

One way to look at this pattern is by assessing population development and state capacity. Looking at population development, we argued that the phases of growth were often accompanied by losses in population and state capacity. Indeed, China is unique in at least one respect: it has been in terms of population size by far the largest state in the world, with at least – both before and after the Qing – around 20%-25% of the world's population. During Qing its relative size was even larger, with no less than 35% of global population (Maddison 2007). Yet, its population growth was rather unbalanced, characterised by extreme swings. In Europe sudden falls in population levels due to wars or epidemics in one part of the region were more or less compensated for by growth in other regions, as a result of which European population growth was rather smooth (the exception is the pan-European Black Death epidemic of 1348 during which about one third of the European population died). Chinese population movements were much more extreme, however, and dramatic declines were often related to the wars and civil unrest that accompanied the transition from one dynasty to the following. The conquest of the empire by the Mongols (establishing the short-lived Yuan dynasty), the collapse of the Yuan dynasty and the establishment of the Ming, and the transition from Ming to Qing, all had dramatic consequences for population numbers, as is clear from Figure 1-1. Population losses during these transitions were much more extreme than anything we find in European history – even the effects of the Thirty Years War on Germany seems to be quite moderate from this perspective.

FIGURE 1-1 POPULATION DEVELOPMENT IN CHINA, 1-1911AD WITH PERIODS OF DYNASTIC CHANGE



Source: Deng (2004); Maddison (2007), Xu *et al.* (forthcoming).

That these periods of turmoil and population loss coincided with declining state capacity can be seen by assessing urban primacy, that is the share of the capital city in total population, which is often considered a prime indicator of state capacity and the ability of the state to extract revenue from other regions (Ades and Glaeser 1995, 224; Bosker *et al.* 2013). Indeed, looking at Table 1-1, we may arrive at two conclusions. First, up to ca. 1700, urban primacy in Western Europe was lower than that in China. This may be related to the fragmented nature of the European state system, but apparently this changed over time.

TABLE 1-1 URBAN PRIMACY IN CHINA AND WESTERN EUROPE (PRIMATE CITY/TOTAL POPULATION) %

	China	Western Europe
1100	1.0	0.2
1200	0.8	0.2
1300	1.5	0.2
1400/1391*	1.4	0.2
1500		0.4
1600/30	0.7	0.4
1700/1644*	0.4	0.6
1800	0.3	0.7
1850	0.3	1.1
1900	0.2	2.3
1918	0.4	

\*1400 Western Europe, 1391 China

\*\*1700 Western Europe, 1644 China

Source: Xu *et al.* (forthcoming)

A second observation is that, whereas in China urban primacy declined during the Ming and again during the Qing, something that we argued before, it increased strongly in Western Europe together with state formation. In 1900 the largest Chinese city, Guangzhou, was at about the same size as in 1100, whereas the total population had increased dramatically. These trends reflect the divergence in terms of state capacity and are confirmed by similar disparities in fiscal capacity. In Western Europe in the nineteenth century the share of the state in GDP was around 10% of GDP versus 2% in China (Ma 2011). This is probably connected to China's weakening in the international trade hub as exemplified by the change from a strong position in the Silk Road to the eventual defeat during the Opium Wars in the 19<sup>th</sup> century.

### 1.3 Centralization and bureaucracy

So far, we observed that, as pointed out in the introduction, the state centered ideology, combined with an education system geared towards supplying the bureaucracy with new members, and an infrastructure able to extract revenue from all parts of the Empire, facilitated the phoenix-like character of the Chinese state re-emerging each time after a dynasty was toppled.

This pattern is also known as the dynastic cycle, an 'old fashioned' idea (especially not appreciated by western scholarship) which might however have some value for understanding Chinese economic history. During the chaos of the final years of a dynasty a strong clanleader will stand up, establish with great force a new regime, and use this force to extract resources using the existing infrastructure – forced labour for example is very usual in this part of the cycle. In this way a new alignment of incentives is achieved; bureaucrats are disciplined, obey the law and their Confucian conscience. The first Qin and Ming emperors were true authoritarian rulers who managed to build a new, centrally guided economy that almost completely did what they wanted – also thanks to an efficient, disciplined bureaucracy that saw it as its duty to obey the ruler. Later rulers within a dynasty, however, were often less successful in controlling the bureaucracy leading to the eventual collapse of the dynasty, which were often accompanied by wars and population losses as discussed in Section 2.

Indeed, a key problem of Chinese state was that it was large, and that communication between center and the rest of the empire was time consuming and costly. There were clearly limits to the degree to which the emperor could monitor his 'agents' – the civil servants of the professional bureaucracy - at the provincial and district level. It may have been in their long-term interest to be impartial and integer officials, much like Confucian ideology told them to be, but, in the absence of countervailing powers both at the local and national level, there was always the temptation to profit from the huge powers bestowed upon them. Recent game-theoretical research has shown that people are motivated by mixes of economic and social incentives. They usually like to be good citizens, or in this case, good officials in the best Confucian tradition, but often also cannot resist the lure of the market (Bowles 2016). Strong material incentives can undermine the social preferences of people, but a state can appeal to and work with the citizenship of its inhabitants – and in particular in this case, the bureaucrats who rule the country. In other words, only when a proper infrastructure is managed by either strong bureaucracy or when government is supported by a strong civil society can a dynasty remain in effective control of the vast empire.

But force is often inefficient, and markets are an attractive alternative for organizing public goods (from palaces for the imperial family to irrigation works for agriculture). After some time, force is replaced by market incentives. As pointed out in Section 2, there are various examples, such as during the 8<sup>th</sup> century AD at the end of the Tang dynasty. This period witnessed a strong decline of the old elite and the rise of powerful non-office holding economic elites such as businessmen (Tackett 2008). Something similar happened during the ‘commercial revolution’ of the 16<sup>th</sup> century (during the Ming), and at the end of the Qing (19<sup>th</sup> century). One clear example showing the rise of market forces in weakening the state is the sale of offices, which, in the Ming dynasty started in the early 15<sup>th</sup> century in certain regions to become a national phenomenon during the late 15<sup>th</sup> century when the dynasty got weaker (Tang 1991). The Qing dynasty, however, was exceptional, something we will return to in the following sections, in that they witnessed sale of offices already at the start of the dynasty (e.g. Xu 1950). Hence the move from force to market was quite universal in imperial China and perhaps we can add, after the death of Mao in 1976.

As argued before, this turn to market incentives tends to undermine the social incentives of bureaucrats and other members of the elite. It is probably beneficial for all if social preferences – their honour as members of the mandarin class – continue to dominate their behaviour. But the temptation of corruption is there, once the market becomes predominant for the rest of the economy, and slowly their social preferences may be eroded by material incentives. Growing corruption then tends to undermine the effectiveness of the state. Fragmentation of state power – as in practice it is almost impossible to monitor officials in the vast Empire – is the result. Once one official defects, others will tend to do the same, and the intricate balance of power relations within the state may disintegrate. This cumulative process of disintegration will continue until the state falls apart, and a powerful man has to stand up to start the whole process all over again.

These processes are well recorded with the late Tang local elites focussing on economic benefit more than on social prestige, which led to disintegration of the Empire (Tackett 2008). Indeed, as pointed out by Hartwell (1982, 395), the end of Tang was characterized by a reduction in influence of the central government and the mid-level administration (the prefecture), combined with an increasing importance of the lowest administrative levels (counties). A similar turn to economic regionalism is recorded for the end of the Ming and Qing dynasties. For example, for prefectures judicial matters and direct contacts (via memorials) to the throne were reduced.

This pattern of increased regionalism at the end of a dynasty held true until the Qing. Yet, in the Qing economic and social regionalism was already strong from the start. In fact, we see one of the first Qing emperors, Kangxi (1654-1722), already ordering the memorials to be submitted by counties to the Emperor directly rather than by higher administrative levels. Hence, in this case the regionalism already started from the start of the dynasty even though it worsened at the end. One might even argue that it applies to the New China reform period after Mao’s death in 1976 as well. Indeed, it has been argued that, for example in the case of taxes, until 1976 China had been unified in the sense that regions had very little bargaining power. Yet, after the reforms of 1978<sup>2</sup>, regions obtained much more freedom bargaining with the central government thus leading to different regional development (Shu-ki and Yuk-shing 1994). This point is also made by Xu (2011) who argues that the post Maoist period was characterised by central

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<sup>2</sup> At least until the next tax reform of 1994.

government that tried to control personell with regional governments controlling the main parts of the economy giving them considerable leverage to negotiate with the central government (Xu 2011).

## 1.4 Education and bureaucracy

Education played a key role in keeping the empire together. Yet, it was both the strength and weakness of the central state. Almost all education from Qin onwards was focused on training for government positions. The first examination system started in the Han dynasty after the anti-education campaign of the Qin had ended. In principle the examination system was open to all, but in practice until the Ming it remained characterized by some form of co-optation, and the new literati came from already established elite groups. This changed formally in the Ming, but already discernable in late Tang (Tackett 2008, 112) when “men of virtue” could also pass the examination system, even though social background kept playing an important role (Elman 2000, p.5-7). These regulations were further relaxed during the start of the Qing dynasty (1644) when the new Emperor (or actually his replacement, since the Emperor himself was only 5 years old), revigorated the civil examination system. More people than ever before were now allowed to take the exams. Interestingly, in those exams various questions were about the topic how Han and Manchu (the Qing dynasty was of Manchu origin) population could live harmoniously side-by-side thus suggesting that, on the one hand, the government remained interested in dynastic stability and, on the other hand, that it realized being a “non-Han” dynasty made it weak from its inception. Nonetheless, education remained largely focused on government positions.

Even after the modernization of the education system at the turn of the 19<sup>th</sup>/20<sup>th</sup> century, the focus remained on furthering the government policy. The role of education as being important for educating reliable civil servants also remained to some extent. Indeed, if only for a few years after the introduction of the modern system, the old title obtainable via the civil examination system, *shengyuan*, remained being given to persons passing a certain level in modern schooling. Even in the 1930s in a report of the League of Nations, it was stated that higher education levels remained mainly leading to government positions.

It remains important to realise the relatively small scale of Chinese education. We have very few quantitative historical data on Chinese education, but for the late 19th century there are some data which give an impression of the participation at formal education. Based on the data for two available counties, semi-urban county of Chengong and rural region of Yugan, we can obtain some idea about enrollment ratios by level of education ca. 1880-1930. Not only is the finding of an enrollment rate of between 10 and 13 per cent quite

TABLE 1-2 ENROLLMENT RATIOS IN CHINESE EDUCATION IN CHENGONG AND YUNAN COUNTY 1880-1930

Region	Education level	1880	1900	1930
Chengong county (Yunnan)	No school	89.4%	86.2%	84.5%
	Popular school	10.0%	13.3%	12.8%
	Mid-level school	0.6%	1.0%	2.5%
	Higher education	0.0%	0.1%	0.1%
Yugan county (Jiangxi)	No school		89.7%	89.0%



Popular school	9.8%	7.9%
Mid-level school	0.5%	3.1%
Higher education	0.0%	0.0%

*Source:* Mengxia and Tian (2009, vol. 11); Yugan countyhousehold books (ca. 1939, unpublished)

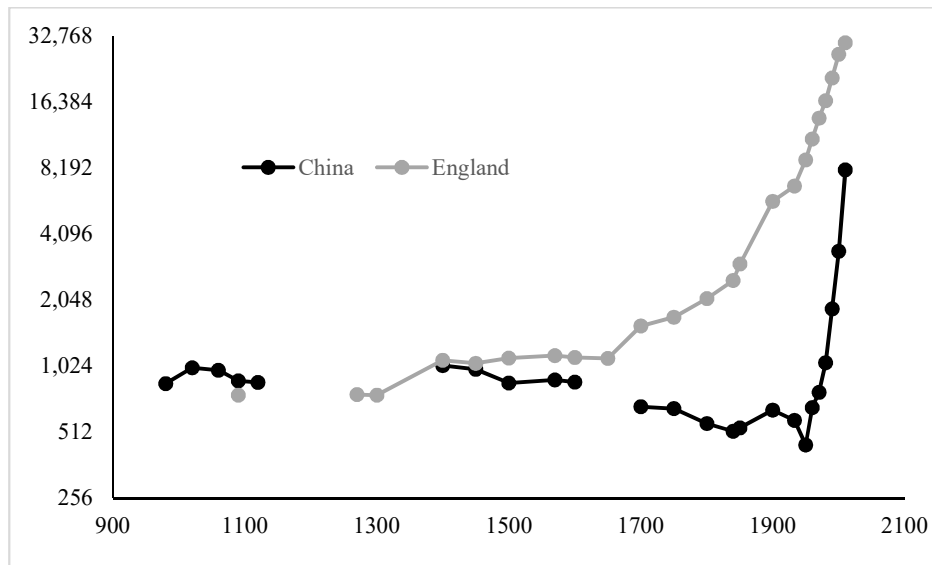
low compared to 77% (United Kingdom), 80% (the Netherlands), 60% (Italy) around 1880 (Lee and Lee 2016), but also it remained mostly geared towards government positions. Indeed, this system had little, or even the opposite, effect on technology. For example, Bai (2013) found for the last years in the Qing that modern factories only arose in those regions with lowest of numbers passing the civil examinations.

This may be called the paradox of educational development: in China education was always highly regarded and relatively large investments by private families were made in order for their children to obtain a degree. But before recent times the general level of education was not very high, and its effect on the economy (outside the government bureaucracy) was limited. The enormous growth of education in recent years is therefore deeply rooted in China’s past and culture. It was also an effective instrument in recruiting and ‘reproducing’ the ruling elite – but it allowed for very limited social mobility, did not really reach women (except from small number of highly educated women from the elite), and did not really transform the lives of Chinese before 1912 or even 1949. In this respect the Cultural Revolution (1966-1976) was a radical departure from Chinese traditions, as it was mainly aimed against the educated (urban) elite. The post Mao reforms of the 1980s and 1990s, in combination with the one child policy, brought the country back again onto its historical development path.

## 1.5 Needham’s puzzle and growth

As discussed above, a long-run delicate balance between market forces and state capacity existed from the Qin dynasty to the present even though the balance shifted somewhat towards the former from the Qing dynasty onwards. This long-run stability, combined with the large population creates the puzzle, first formulated by the great expert of the science and technology of China, Joseph Needham (1969): “Why did modern science, the mathematization of hypotheses about Nature, with all its implications for advanced technology, take its meteoric rise only in the West at the time of Galileo [but] had not developed in Chinese or Indian civilisation?”. This concerns in fact two questions: first, why was China ahead in technology to the West up to the 15<sup>th</sup> century and secondly, why did it fall behind in modern science after the 15<sup>th</sup> century (Jin 2016, 29). Or, applied to the realm of economic history: Why did the Industrial Revolution not arise in China, but instead in North-Western Europe? If we chart the long-term evolution of per capita GDP (Figure 1-2), we indeed witness that per capita GDP in China and England up to the 15<sup>th</sup> century went hand in hand. Only after the 15<sup>th</sup> century a modest – and later accelerating- divergence occurred. Only from the 1950s, with the forced industrialisation policy, there is convergence, which accelerates as a result of the reforms that started in the late 1970s.

FIGURE 1-2 PER CAPITA GDP 980-2010 AD (LOG 2 SCALE, 1990 GEARY-KHAMIS DOLLARS)



Source: Broadberry et al. (2017, Table 6); The Maddison Project (2013), Xu et al. (2017).

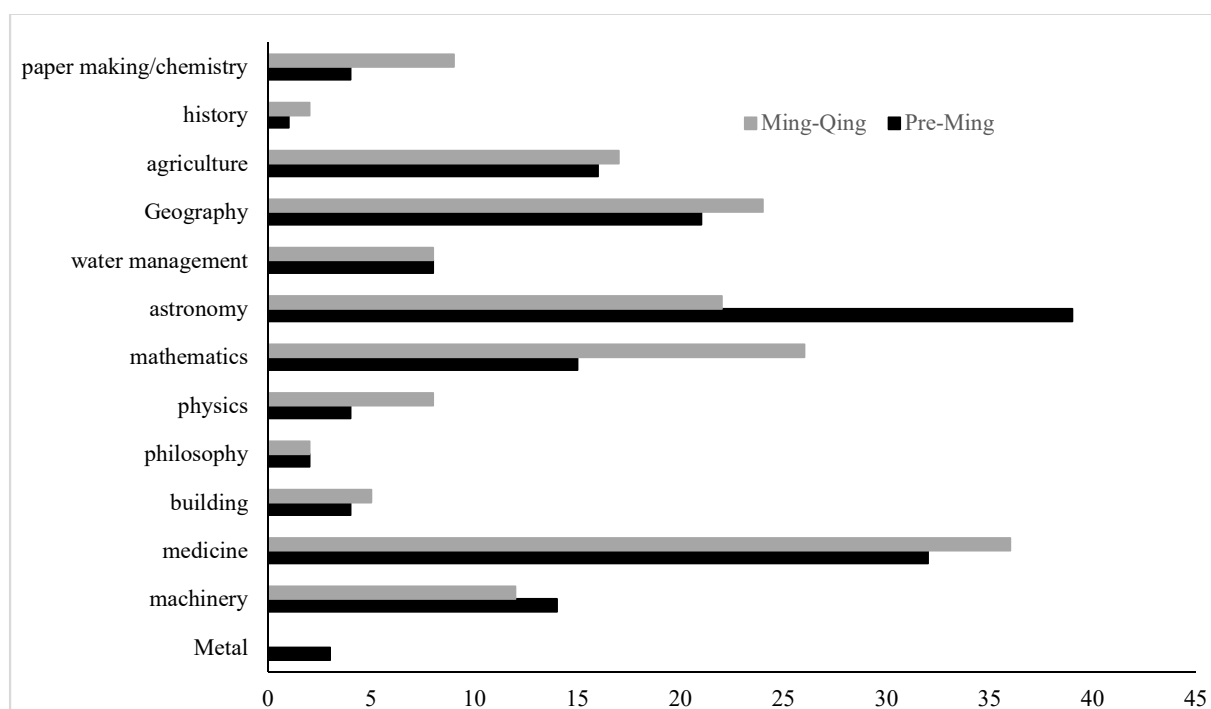
The first question – why China developed successfully up to the 15<sup>th</sup> century – is perhaps not difficult to answer. If economic development is based on new technologies based on new ideas, and new ideas are produced by people, it follows that population size and density (increasing the interaction of ideas) determines development (Kremer 1993; Galor 2005). From this perspective it is natural that the largest and arguably most stable state will produce the most ideas, and hence more economic development than small states with only tiny populations (the latter might even regress in level of economic development because they lose technologies; the example of Tasmania is often cited in this respect). Moreover, China was culturally relatively homogeneous facilitating interaction and integration; the Han Chinese shared single language and common values and customs (albeit that significant regional variations occurred). Compared with India, for example, or the Middle East (before the Conquest by the Arabs), it was a much more homogeneous empire which brought together a sizeable part of the global population. The stability of institutions – of a state governed by an ‘independent’ bureaucracy – will have enhanced the effect of pure population size (e.g. Fairbank and Reischauer 1960). That large states – such as the Roman and the Chinese Empire – which allow a certain degree of market exchange and offer some protection of property rights, are the natural foci of economic development is therefore more or less in line with economic theory.

Indeed, China was the breeding ground for many inventions up to the Sung period including the so-called “4 great inventions”, i.e. the compass, gunpowder, papermaking and printing. Therefore, the true Needham puzzle seems the question why China did not continue to develop after the Sung period, or if it did, why it did not develop into the direction of industrialization and ‘modern’ economic growth. Opinions are much more divided. Revisionists such as Bozhong Li have argued that China – or at least its most advanced ‘core region’, the Yangtze delta – did continue to develop, and raised agricultural productivity and structural transformation to new levels. This has been the basis for the ‘Great Divergence’ thesis as developed by the ‘California School’ arguing that until about 1750 levels of

economic development in China were comparable to those of Western Europe (Pomeranz 2001). However, there is increased evidence that the development path of institutions in China was fundamentally different from that of Western Europe, and that this had a big impact on relative prices and wages. In parts of Western Europe real wages stabilized at a relatively high level after the Black Death, whereas interest rates fell to very low levels (of about 5-6%). This created the right incentives for labour saving technologies to appear; the printing press was one of the first notable examples (its European version was much more capital intensive than the comparable Chinese technology). This, in combination with low prices for energy (coal), set Western Europe on the road to industrialization (albeit very slowly at first).

China followed a different trajectory, characterized by low real wages, high interest rates, and increased labour-intensive industrialization and agricultural intensification (perhaps typical for rice-based irrigation agriculture; e.g. Chao (1986) This was arguably the ‘usual’ Boserupian and Smithian development path of a pre-modern economy. What was perhaps unusual is that, during the Qing, this resulted in a decline in the rate of urbanization (from about 12% to about 7%), amongst others because most demographic growth occurred not in the core regions but in the periphery. Similarly, the current estimates of GDP per capita show a long-term decline which runs more or less parallel to the process of de-urbanization.

FIGURE 1-3 NUMBER OF SCIENTISTS IN CHINA PER TOPIC BEFORE AND AFTER 1368



Source: Du (1992).

Also, education after 1500 also fell behind the West, especially popular education. Even though the late Tang admitted, outside of the capital, that skills rather than birth dominate the civil examination system (Tackett 2008, Table 2), still there was no real mass education, let alone that it was government sponsored (Lin 1995). This does not mean there was no demand for it. Indeed, in a study on the Quality-Quantity trade-off in terms of education for Chinese clans, Shiue (2017) found that, from the Ming onwards, the families with more education had fewer sons. Hence, they preferred fewer, but better educated, children.<sup>3</sup> But also the character of technology changed (see Figure 1-3) with an increased focus on mathematics and practical industries such as papermaking and much less on e.g. astronomy.

Hence, in terms of state capacity the Qing was different even though, as mentioned earlier, one reason might be that they were a dynasty “outside” to the Han population.<sup>4</sup> The Manchus who took over the Chinese state in the mid 17<sup>th</sup> century, did more or less skip the stage of ‘forced development’ based on coerced labour and massive repression, even though also here these things occurred, just on a lesser scale.<sup>5</sup> The strategy of the Late Ming market economy was more or less copied, and the market remained the dominant allocation mechanism during the entire Qing dynasty. Moreover, the Manchus were different, as they were not Han-Chinese, and probably were unable to mobilize the same social preferences, such as loyalty, from officials and population. Knowing this, they tried to impose a kind of social contract implying that taxes would not be raised (in particular land taxes were frozen, despite rapid growth of the population), and tried to rule the Empire in a more or less enlightened way. Indeed, as pointed out earlier, they tried to combine Manchu and Han populations, even stimulating intermarriage. This strategy was successful until the final decades of the 18<sup>th</sup> century, when the inevitable corruption started to erode state capacity and the civic attitudes of officials and population at large. For example, Yeung (2007, Figure 4.7) showed that rebellions co-existed with drops in the share of top bureaucrats with Han origin, especially during the worst period of the 1850s. Things went downhill rapidly from that moment – literally, when we look at GDP per capita (but accelerating population growth also played a role).

Indeed, first there was the humiliating defeat by the British during the First Opium War (1839-1842). It was followed by the Taiping rebellion (1850-1864) that almost ended the dynasty. However, after the Taiping rebellion the state rebounded somewhat, albeit that corruption remained a key concern. It shows that the idea of a dynastic cycle should not be taken too literally – and that the declining part of the cycle still may have periods of some prosperity. But almost all attempts to reform state and society failed. The official abolition of the empire and the start of the Republic in 1911 did not lead to political stability, but in economic terms the following period was not bad at all. The declining trend in GDP per capita was stopped, economic modernization accelerated and the Yangtze again rose to prominence in the newly industrializing economy. The trend towards increased political fragmentation was not reversed,

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<sup>3</sup> Yet, from the late Qing this negative relation between number of children and investment in education disappeared mostly because population increased while the number of government positions declined.

<sup>4</sup> . Yet, besides this, it remains not entirely clear why the Qing cycle of economic and socio-political change was different from the preceding ones (the Sung and the Ming – the Yuan is yet another story).

<sup>5</sup> The first emperor of the Qing was 5 years old when he ascended the throne. In fact, much of the conquests were done by Dorgon. Even though Dorgon is also known for policies of reconciling Manchu and Han population, he is also known for his policy of forced labor of the Han population in case of labour shortages as well as forced hairstyle and clothing prescriptions.

however, to which the Japanese contributed markedly with the first Sino-Japanese war (1894-1895), its invasion of Manchuria in 1931, and the second Sino-Japanese war (1937-1945).

A new cycle only began with the victory of the Chinese communist party under the leadership of Mao in 1949. In a way, it followed classic patterns – flawed practices at first (with the Great Leap Forward (1958-1962) as the most extreme experiment in this respect), followed, after 1978, by radical market-oriented reforms, which unleashed underlying forces of economic growth to produce a growth miracle unheard of in history. The succession of central planning (copied after the example of the USSR) and market reforms fits nicely into the classical pattern of the dynastic cycle, in which the ‘mandate from heaven’ is now replaced by a contract with Marxist ideology. What was different from previous cycles is that this resulted in massive changes in the structure and productivity of the economy. Forced industrialization under strict communist rule set the initial stage for this, guided industrialization in which the communist party still tries to keep control of the complex processes has followed. It will obviously take some time before this is undermined by corruption and the erosion of social preferences (but China seems to be on the ‘same’ historical track in this respect). The rest of this book speaks much more authoritatively about these recent developments.

## 1.6 Conclusion

China is arguably the oldest unified state. Unified during the Qin dynasty (221-206 BC), it essentially remained in place until the present day. This does not mean there were no invasions, unrest, and partitions. However, China always reunited again within roughly the same borders. In this chapter we have attributed this to three main factors which occurred during Qin reign, i.e. the introduction of Legalism (an ideology that attaches value to a person only in its use for the state), an educational system that educates for government positions (established during the subsequent Han dynasty), and the building of a physical infrastructure that allowed easy extraction of tribute from all around China. Until about 1500 China was also the eastern terminus of the great Silk Route, which connected it with the urban centers of Middle East, India and Persia. In many ways, this formed the core of the world economy until about 500 years ago, when new routes based on cheaper transport via the high seas were developed which fundamentally changed the global economic system.

This system with persistent, even though weak, stability and a large population explains, in various growth theories, the development of new technologies. Yet, what remained a puzzle is that it was in Europe, rather than in China, where from the 15<sup>th</sup> century onwards technological development accelerated. We attributed this to exactly the same persistent system which led to weak stability, low levels of education and did not allow major changes in technological progress and, hence, economic development.

This process of dynastic foundation, weakening at its end, followed by increased growth which was only to be smothered by dynastic unrest and the rise of a new dynasty, continued in many ways even until the present day. Yet, from the Qing dynasty onwards, some changes did occur. First, contrary to preceding dynasties, the Qing was a “non-Han” dynasty. Hence its basis was less strong than that of other dynasties and market forces set in already from the start. It is quite remarkable how long this dynasty existed under such circumstances, something that probably can be attributed to the quality of its civil servants. Second, from the late 19<sup>th</sup> century onwards we witness, even though small, educational

modernization. Third, during the early part of New China a period of forced industrialisation occurred on a new scale, even though this also was not a real break with the past considering government led industrialisation during the Ming dynasty.

This analysis shows that Chinese development was partly hindered by its persistent governance structure and legalism-induced education system. When these weakened, growth occurred but, at the same time, instability and dynastic change took place. This cycle weakened, but did not disappear, from the Qing dynasty onwards.

## 1.7 References

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