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Review Article: Still Room for Debate on China and the Great Divergence

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Abstract

One of the most stimulating debates in economic history over the last two decades has been that surrounding the so-called “Great Divergence”, namely precisely when the Asian economies fell behind Europe. To date much of that debate has hinged on real wage data. This article highlights and contextualizes evidence from the extant literature that both offsets and supports the notion that living standards in China, as one key component of the Asian Divergence, were similar to Europe as recently as 1800. The article also identifies where more research is necessary so as to make a more robust judgement in the “Great Divergence” debate. To achieve these aims, the article delves into evidence on taxation, interest rates, market integration, standards of living, joint-stock enterprise, cartography and law and finance. China lies at the center of these arguments, but other Asian economies are observed.

Keywords: Great Divergence; China; Taxation; Interest Rates; Indebtedness; Joint-Stock Enterprise; Cartography; Law.

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“The inland trade of China is so great that the commerce of all Europe is not to be compared therewith; the provinces being like so many kingdoms, which communicate with each other their respective production ...” Jean-Baptiste Du Halde (1735, cited in Ho 1959, 199)

“China is a much richer country than any part of Europe” Adam Smith (1776, 264)

“For a few cash [sic] ... a Chinese can dine in a sumptuous manner upon his rice, fish, vegetables, and tea; and I fully believe that in no country in the world is there less real misery and want than in China. The very beggars seem a kind of jolly crew, and are kindly treated by the inhabitants ...” Robert Fortune (1847, 110)

Introduction

There is no doubt that one of the most stimulating debates in economic history over the last two decades has been that surrounding the so-called “Great Divergence”, i.e. precisely when standards of living in Asia started falling behind Northwestern Europe. Kenneth Pomeranz’s famous contention was 1800, in relation to China, as one component of the Divergence, and the passages above seemingly support his claim, as do students of the “California School” more recently.²

Yet a broader comparative look at the works from which the above passages are taken might reveal a different picture: Du Halde for one was a Jesuit committed to beautify the idea of China, thereby making the Jesuit mission seem more important; Smith’s *Wealth of Nations* elsewhere described the Chinese economy as stationary; and Fortune saw Chinese agriculture as by and large backward in other passages (Fortune 1847, 110; Smith 1776, 264).

To be sure, there are optimistic early twentieth-century accounts of China which discount the effect of the small European presence on the coast, and praise Chinese traditional ways. Thus, Charles M. Dyce for example ironically dubs his work “the Model Settlement” in relation to British-run Shanghai. But at the same breath he could write: “[The Yangzi] ... drains a vast extent of the country, which is no doubt, the richest in the world” (Dyce 1906, 58).

There are of course less appreciative early accounts to do with China too. But, even then, Japan comes across as more advanced compared to Europe. Thus, the famous Sir Rutherford Alcock could castigate the leaders of both China and Japan as “mendacious”. The Chinese, however, were in his view easier for Europeans to subjugate. Japan was superior because of what he viewed as its religious harmony and absence of poverty. He otherwise thought the Japanese government to be despotic but omniscient; and Japanese peasants were portrayed as hard-working but freer than their Swedish counterparts (Alcock 1863, 58-68).

Of course, compelling quantitative responses to the California School have been mounted elsewhere, most notably by Stephen Broadberry, Hanhui Guan and David Daokui Li (2018, 2021). Two articles striking the middle ground were recently published in these pages too, demonstrating that the debate is very much alive (Stefano Agnoletto 2023; Sashi Sivramkrishna 2023). The present article will further delve into the debate from the perspective of largely qualitative evidence as to taxation, market integration, standards of living, joint-stock enterprise, cartography, and finance and law. It will both offset and highlight California School works through those prisms but in itself does not purport to offer a sweeping integrative explanation for the Great Divergence. Instead, the article will identify where more research is

² The main works of the California School are Prasannan Parthasarathi (2011), Kenneth Pomeranz (2000), Roy Bin Wong (1997). For an extensive review of Pomeranz (2000) and the field of Chinese economic history, see Kris Mitchener and Debin Ma (2017) and Patrick O’Brien (2023). For discussion of the California School see Li Bozhong and Jan Luiten van Zanden (2012).

necessary so as to make a more robust judgement in the Great Divergence debate wherein China is at the center but the rest of Asia is also of interest.

Taxation

The most penetrating critique of Pomeranz on tax was mounted by Peer Vries who accused the former and his California School followers of grossly overlooking the differences in tax systems between China and England. Early modern England relied on indirect taxation, and nurtured a huge national debt (Vries 2015). English national debt grew from GBP 2 million in James II's reign to more than GBP 834 million in George III's reign. If Lombard bankers lent money to the throne in medieval England, by the nineteenth century, English national debt had become mostly domestic, impersonal and permanent (O'Brien and Philip A. Hunt 1999, 53-100, ff. 56-57).

The Chinese imperial treasury, in contrast, relied on intentionally low direct land tax, and was averse to borrowing. Land tax represented 43 percent of Qing revenue, nevertheless (Helen Dunstan 2014). In 1720, land tax revenue had been just under 34 million tael, while other taxes amounted to only 6.3 million tael. By the late Qing (c. 1890), *likin* transfer duties became more important and the total annual treasury revenue was around 80 million tael (Kung-Chuan Hsiao 1960, 141). On the other hand, the salt trade certificates used during the early Ming dynasty (c. 1450) (*kaizhong*) did not matriculate into a fully-fledged public debt system in the Qing era (Pung Wing-Kin 2020).

There are near-contemporary estimates for tax revenues. In 1904, Thomas R. Jarnigan estimated land tax in China for 1820 at 32.8 million tael; and total tax for the 1900s at 115 million tael. As mentioned, by then, customs duties and other indirect taxes like *likin* played a larger role. Jarnigan observed that land tax was still the mainstay, and that total tax receipts were miniscule for a country the size of China (Jarnigan 1904, 44, 52, 56-58, fn. 181). H.B. Morse in 1908 concurred for the most part, identifying factors like statistical obscurity, provincial fragmentation, and lack of cadastral revision as weighing down on tax receipts (Morse 1908, 80-118).

These tax figures take on more resonance when we consider that tax receipts had been similar eight centuries earlier in the prosperous and effervescent Song dynasty. The North Song (CE 960-1127) total was equivalent to 120 million taels but was much more geared toward indirect taxation, e.g. the salt gabelle accounted for 40 million tael of this total. Earlier still, in the Tang dynasty (CE 618-907), total tax receipts were around the equivalent of 60 million taels, of which almost all was land tax (S.A.M. Adshead 1988, 116-117). Receipts waned particularly in the Ming (CE 1368-1644) dynasty—around 26 million taels in total (Ray Huang 1974, 46-50).

This can be compared with the average annual tax receipts for the Ottoman Empire given by Şevket Pamuk as 100 million akce (Pamuk 1997, 354, Table 1). The tael broadly weighed 37 gr of silver, and the akce around 1.15 gr. Thus, the Ottoman revenue would have equated to around 3 million taels in Chinese terms, an even smaller figure per capita than the Chinese one.

Furthermore, England, in Vries' interpretation, was mercantilist until the mid-nineteenth century, while China and the Ottomans were initially uninterested in foreign trade (see section on market integration below). The Kangxi, Yongzheng and Qianlong emperors more than doubled the size of their realm and added huge non-Chinese territories. In that sense they certainly were imperialists (cf. Joanna Waley-Cohen 2000). But they never intended to create colonial peripheries for exploitation in the same way as Western European powers—their main goal was to create natural and safe borders.

Chinese emperors since the Tang dynasty did however nurture a large porcelain industry in Jingdezhen partly for export, which operated alongside the smaller private porcelain

industry there. It was based on diffuse kilns rather than economies of scale (Michael Dillon 1992; Liang Miaotai 2004; Stephen Little 1996).

Far into the nineteenth century systematic efforts to increase foreign trade were absent, and for a very long time little attention was paid to China's balance of trade. It was in any case not discussed and no statistics were collected to try to determine it (Vries 2015). Revenue from customs was small relative to total tax income and completely negligible relative to national income. In the West though there was a tight connection between trade and power (Vries 2015, 206).³ In the words of O'Brien (2023), "... no economic historian could deny that the establishment of (colonies regulated along mercantilist lines) together with slave populations in the New World, turned the terms and conditions for trans-Atlantic trade in favour of Europe".

All of this should be understood in the context of upheaval in Europe. Constant warfare created a constant pursuit for central government revenue, which translated into less weight for land tax. Once peasant tax sources were exhausted, merchants were turned to, and finally indirect taxation was tapped—including the sale of government sinecures. The culmination was the creation of a fungible public debt by Europe's sea powers (Carolyn Webber and Aaron Wildavsky 1986, 262-355).

In sum, other than wage data, the Great Divergence debate has a fiscal angle too. Tax revenues and national debt were two of the hallmarks of economic modernity and they were lagging in China. A weak fiscal state meant that resources in China could not be mobilized as swiftly, and that naval build-up of the mercantilist streak was all but non-existent. However, a distinction between private and public debt ought to be made: private debt in China was very high in relative terms, as will be explained below.

Better data are needed on the overall tax burden in China (and elsewhere in Asia) as opposed to England, as we still do not precisely know the division between direct and indirect tax in pre-modern China. Historical English data on taxation seem on the whole better mapped out.

Interest Rates

Interest rate variations may flow from a host of sources like savings sufficiency, different forms of lending, capital mobility, risk attitudes, availability of security, and lending restrictions such as those mentioned below. What is more, interest rates can vary across or within countries. However, the factor affecting interest rates most in late-imperial China as compared with other locales was capital scarcity. In other words, the difficulty of accessing sources of available capital, and securing it, hampered transactions. That was primarily because borrowers had been peasants and lenders urban gentry.

Market-town interest rates in late-imperial China were evidently very high, indicating high private debt (Niv Horesh 2009, 2013, *passim*). Indirectly, Raymond W. Goldsmith (2008) shows they were much higher than in the Roman Empire earlier on. However, interest rates in Mesopotamia (BCE 25) were high too at 20-50 percent, while in classical Athens only around 12 percent. In Europe, until the sixteenth century when anti-usury laws pertained, they were around 10 percent, although unsecured consumer loans carried rates up to 48 percent (Goldsmith 2008, *passim*).

Later in the Ottoman Empire interest rates were around 10-15 percent on short term loans, and around 12 percent in the Mughal Empire. Rates on commercial loans were around 12-20 percent in Tokugawa Japan and 10 percent in Elizabethan England (Goldsmith 2008, *passim*). This quantitative evidence is compelling: it shows China very distinct in terms of the

³ On mercantilist policy (e.g. customs receipts) as the key to English success in the early modern era see also David Ormond (2003).

interest rates prevailing there even if the types of loans surveyed are not identical. That the official cap in China was 36 percent (Dunstan 2020, 140, fn 4) speaks volumes, and is only matched perhaps by the situation in Mesopotamia.

The pertinent scholarly literature stresses the reduction in interest rates as supporting modern economic growth. The golden age of the Dutch republic in the seventeenth century for example was attended by an interest rate of just 3 percent per annum, while in England at the same time 6 percent per annum obtained (Lars Magnusson 1994, 107). In France circa 1726 the legal cap on interest rates was as low as 5 percent, while the market rate oscillated around 8 percent (Philip T. Hoffman, Gilles Postel-Vinay, and Jean-Laurent Rosenthal 2000, 73).

Thus, late-imperial China enacted laws against high interest rates (usury was allowed unlike the realm of Islam or Medieval Europe), but with a much higher nominal cap than, say, France. Incidentally, Valerie Hansen has shown for the earlier Tang era loan contracts stipulating an interest rate of 15 percent per annum, but the clauses suggested the parties did not expect to go to court if a dispute arose (Hansen 1995, 34-35, 44). Later on in the Song dynasty, influential thinker Zhu Xi restricted interest rates on loans by ancestral trust members to non-members to 10-20 percent. Realistically though, marketplace interest rates during the Song were 30-50 percent (Joseph P. McDermott 2013, Vol. 1, 160-161).

Chi Yu-Tang (1980, 244) described tenancy and usury as inter-linked in late-imperial China with exorbitant rates prevailing—often 20-30 percent per annum. In his view, agricultural credit "... then forms the nucleus of the problem of [land] ownership and tenancy in China". Liu Qiugen (2000) has more recently shown—based on local gazetteers—that annual interest rates on rural credit in late-imperial China could reach up to 50 percent. Urban rates were lower but seldom under 20 percent.

By contrast, as Raymond De Roover's classic (1942, 105; cf. A.M. Andreades 1966) tells us, in Northwestern Europe there was clear "change in the official treatment of usury during the fourteenth and fifteenth centuries". Interest rates were often only implicit in bills of exchange. Then, the Lombards were allowed to lend at above 40 percent in the fifteenth century, but interest rates fell quickly thereafter. According to Sidney Homer and Richard Sylla, this was a real European feat because interest rates dropped despite constant warfare there. The legal cap on rates also dropped to single digits, as compared with 36 percent in China. At first, foreign merchants like the Lombards were vital as lenders-of-last-resort to rulers but ultimately Western European rulers learnt to borrow from their own citizenry to defray defense outlays (Homer and Sylla 1996, 124-159; cf. Frank C. Spooner 1972, 283).

Part of the success of foreign financial institutions in prewar China (1842-1937) had to do with the fact that they charged lower interest rates than what was available in the diffuse domestic market. In 1863, for example, the English Ewo Bank charged 12 percent per annum on loans, 3 to 5 percent below the domestic rate according to Edward LeFevour (1968, 138; cf. John Lossing Buck 1937, 461-465). On the other hand, the uptake of cash crops like tobacco, which the foreign presence encouraged, increased rather than alleviated rural indebtedness and attendant interest rates (Chen Han-Seng 1939, 67-74; Pan Ming-te 1996; R.H. Tawney 1932, 58-81).⁴

The rural interest rate in Japan, for example, was only 15 percent at that time (Sydney Crawcour 1961). On the other end of Eurasia, urban interest rates across the Ottoman Empire in the eighteenth century were 20 percent despite the Islamic interdiction on usury. Here, the English Levant Company also lent to locals, and the mercantile sector was largely in non-Turkish, particularly Greek and Armenian, hands (Bruce Masters 2008, 160-164).

⁴ Pan does not deny rural interest rates exceeded 30 percent but contended, contrary to Tawney, that credit was taken by farmers, not for consumption, but in the main to invest in land and yield (e.g. fertilizers).

The foregoing passages imply that China's relatively high interest rates were symptomatic of other blights covered in this article like low market integration. Presumably, if interest rates had been lower, the conditions did exist in China for the capital available to be used more profitably. But a fuller picture requires more research, particularly a more precise charting of the various interest-rate patterns throughout Asia vis-à-vis Europe. That is to say, for example, how much modern banking alleviated capital scarcity in China's Treaty Ports, and how this affected interest rates there. We also need to account for the fact that the Chinese imperial throne did not borrow until the nineteenth century, unlike the situation in Europe.

Market Integration

According to Dwight H. Perkins, prior to 1910, trade within a market town or between neighboring market towns dominated China's rural commerce. Perhaps 20 to 30 percent of all rural output was marketed within such confines. Only 5 to 7 percent was shipped out to areas a hundred or more miles distant, and a meagre 1 to 2 percent sent abroad. As late as the 1950s farmers marketed only 38 percent of their produce with the rest allocated to subsistence and rent (Perkins 1969, 114, 136). The contemporary observer Jarnigan also suggested that trade had not penetrated inland in China beyond the overpopulated interior, and that communication and roads were wanting outside Treaty Ports (Jarnigan 1904, 41). Wilhelm Wagner on his part observed that land roads and human porters were the mainstay of Northern provinces, while waterways generally more used in the South (Wagner 1926, 158-170).

Lossing Buck (1937, 349-350), who spent much time researching in China, also found that nearly half of village produce ended up in market towns, while one-fifth was sold at the same village. Only 8 percent was shipped long-distance.

Yet, Rhoads Murphey (1974, 23), perhaps influenced by Jesuit accounts, suggested nevertheless that China's trade during the Ming and Qing dynasties was very large, even superior to European inter-country levels in the early nineteenth century. Murphey conceded however that late-imperial quantitative data were much less detailed than pertinent European materials.

On his part, Gilbert Rozman (2015, 59-106) argued that Japan was more politically diffuse compared to late-imperial China, but much more economically integrated, and urbanized at the same time. Thus, much more surplus rice was delivered to the capital Edo, and inter-Han trade was much larger than Chinese inter-provincial trade in per capita terms.

Focusing on Shaanxi province, Endymion Porter Wilkinson (1977) found low intra-provincial price integration in late-imperial China. This was both similar and dissimilar to the Ottoman Empire, which was closer to Europe. In the Ottoman Empire foreign trade was always largely free but small as compared with trade within the empire itself. The Ottomans did not embrace national debt and continued to rely on foreign bankers for credit. As in China, land tax remained the bedrock of the tax system. Europeans estimated Ottoman state revenue at only 2.25 GBP million in 1789, compared with GBP 16.8 in England, and GBP 24 million in France (Bruce McGowan 1977).

There is a popular perception that China from time immemorial engaged in international trade through the Silk Road. However, in a powerful rebuttal Hansen (2015) has shown that the Silk Road was much more important in diffusing religion and that the amounts carried there in trade were very low.

The most persuasive rebuttal of California School arguments, albeit by extension, is mounted by Roman Studer. Instead of China, Studer compares Europe and India in the nineteenth century where more quantitative data are forthcoming. He finds much lower grain price integration in India although a little long-distance trade in grain did exist. Studer also

contends that Indian GDP per capita was stagnant between 1500 through 1850 (Studer 2015, 146-148, 168).⁵

However, one needs to be aware of Carol H. Shiue and Wolfgang Keller's (2007) research which supports California School arguments. In their view, based on archival and econometric analysis, European markets in the eighteenth century were comparable to Chinese ones. They therefore concluded that market integration was not a vital condition for industrialization.

The foregoing citations suggest a most vexing problem, with some contemporary observers swearing by high integration and others not. It therefore seems more research needs to be conducted to reconcile Shiue and Keller's econometric findings with Studer. In particular, we would need to know why relatively sophisticated economies such as China or India did (or did not) develop a national market for goods, and what goods these were.

Relative Standards of Living

Since land tax was so critical to the Qing, we have to ask how Chinese farmers—making up the great bulk of the workforce—fared relative to the fewer English farmers. Here, most experts used to stress immiserization, but California School voices usually tell a different story. Kent Deng, for example, has alleged that Chinese peasant conditions were sufficiently good that Mao's land reform was unnecessary. In other words, land was fairly evenly distributed, and the standard of living was reasonable in relative terms (Kent Deng 2012; cf. Kang Chao 1986, 114 Table 6.1-2). Kang suggested that medieval China differed from Europe in that many households owned land. By contrast, in Europe manorialism made peasants less free. In China peasants were freer but average land holdings were smaller than those of European serfs.

Deng's position contrasts with Philip Huang's who argued that, even where rural factor markets were most active, serious market imperfections were still highly relevant. For Huang, like Perkins, unequal distribution of land was a much more critical feature of the Chinese economy than optimists such as Deng or Raymond Myers describe (Huang 1985; cf. Myers 1970).

Beyond the rural economy, Allen and his collaborators have recently found salaries of construction workers in China between the eighteenth to twentieth centuries were lower than those of their Western European counterparts (Allen, Jean-Pascal Bassino, Ma, Christine Moll-Murata, and van Zanden 2011). This suggests the watershed for the Great Divergence was before Pomeranz's 1800.

This pessimist macro view should be compared mainly with Lossing Buck's (1937, 319) optimist findings which showed a progressive rise in farm salaries in both wheat- and rice-growing regions of China between 1906-1933. Earlier in the imperial era, farmers' incomes at times of duress could be augmented by government *pingchang* charity granary disbursement.

In sum, much more empirical work involving perhaps morbidity and longevity needs to be undertaken so as to determine relative standards of living. Standards of living are of course just one piece of the jigsaw puzzle of the Great Divergence, but it is here where variance of opinion is at its highest, and so research is crucial for progress in the Great Divergence debate. And for the reasons explained above, such research would be conditional on a better grasp of the market-integration debate.

⁵ See also Stephen Broadberry, Johann Custodis and Bishnupriya Gupta (2015) and Tirthankar Roy (2010), who show per-capita Indian GDP far trailing Europe well before the Industrial Revolution. For a more global discussion see Robert Allen (2011).

Family Versus Joint-Stock Enterprise

The foregoing notwithstanding, one must not discount the micro-level sophistication of the Chinese economy. For example, ancestral trusts (*tong/tang*) came close to serving as joint-stock companies, albeit without limited liability, and without diffuse non-kin ownerships. Tong shares were not necessarily in perpetuity or in realty alone, and tong also carried out public works (Patrick H. Hase 2013, 103). The ancient Indian Shreni guild was another case in point—it could hire slaves and issued bills of exchange. But pessimists suggest these premodern business forms were all based on kin ownership, as was the Japanese *kawasate* (David Faure 2007, 225-227).

Chinese charitable estates date back to Buddhist monasteries in the Tang dynasty which were exempt from tax. Later, in 1095, premier Fan Zhongyan enacted new rules which forbade ancestral charitable estates from granting mortgages on the land of clan members. But sometimes loans were extended to outsiders (Denis Twitchett 1959, 98, 102, 112-113).

In that context, Avner Greif (2006, 251-254) explained that the West was more primed to non-kin joint-stock enterprise because Christianity weakened the family structure of society. By comparison, Islam was more tribal and Confucianism more family-oriented. In Europe, guilds were guarantors of long-distance trade, whereas in China heavy long-distance trade was mostly undertaken by the state. There is no solid archival basis to suggest professional guild existence in the Muslim world before the later part of the fifteenth century unlike Europe (the first to appear were *esnaf*, later *lonca*, both Turkish) (Gabriel Baer 1970).

Leslie Hannah (2015) has recently shown that by 1910 the world had almost half a million corporations. Most publicly-quoted corporations traded in Europe and the British Empire, but most close (private) corporations operated in the US, which, until the 1940s, had more corporations per capita than anywhere else. The 83 countries surveyed by Hannah differed markedly in company numbers, corporate capital/GDP ratios, and average corporate size. The foreign, largely British-run, sector of the Chinese economy did have many joint-stock companies, unlike the indigenous sector of the economy (Horesh 2015, *passim*).

That much being said, one cannot ignore the improvement in the status of traders in late-imperial China. Whereas previously trade had been seen as a parasitic occupation whose wings had to be clipped in favor of the agricultural core (*zhongben yimo* 重本抑末), by the Ming dynasty a tradition of sparing traders (*xushang* 恤商) had developed (Fu Yiling 2007, 174-197). Such sentiments carried over to the Qing, although traders for their part remained suspicious of the bureaucracy (Richard John Lufrano 1997, 86-95).

Science

When it comes to scientific advancement it is widely recognized that Song China saw much innovation, although the Arab world was the genuine world leader in mathematics until the fourteenth century. Chinese systems of computation were cumbersome (i.e. rod abacus), and neo-Confucianism blighted rational thinking, as did the al-Ghazali school in the Arab world. Arab astronomers served the Chinese court until Jesuits arrived (Toby Huff 2017).

Chinese alchemy did not evolve into chemistry, unlike Western alchemy in the Middle Ages: China had no corpuscular theory of matter, no notion of *material prima*, and the Chinese tended to look for a self-creating cosmos rather than creating it *de novo* (Mark Elvin 2010).

A major obstacle to potential Chinese advancement was that Chinese scientists did not communicate with one another through publications and disciples to the same extent that this happened in early modern Europe. Despite the invention of moveable print, by Ming times there was no one left who could understand the advanced positional algebra of the Yuan dynasty (CE 1271-1368) (Elvin 1973, 180-194).

Cartography was an exceedingly strategic branch of science that saw little advancement in the late-imperial era despite the input of Jesuits. It was controlled by artists and scholars rather than technicians. Chinese pre-modern maps often devoted more space to text than to scaled land features. The Mercator system was not adopted until the early twentieth century. This was because the Mercator system overshadowed China's tributary order which placed the country at the center of maps. For example, even an accomplished scholar like Gu Yanwu placed Portugal south of Java (Richard J. Smith 2013, 52-55, 62-67). And much later even, Wei Yuan's celebrated *haiguo tuzhi* (1844), which was designed to catch up with Western cartography, still contained many inaccuracies, indiscriminately blending European and Chinese techniques (Smith 2013, 191-192).

In the West emperors were depicted holding an orb from time immemorial—this may have been a hint that the planet was round. What is more, there was open trade in maps whereas the Qing, for example, restricted the circulation of Jesuit maps. In England, a brake on the publication of new maps was mainly their cost (Cordell D.K. Yee 1987, Vol. 2, Book 2, 72-94).

In the case of science, the Great Divergence is sometimes seen as much larger temporally, covering classical Greece vis-à-vis the Han dynasty. Though it may appear Western science advanced faster due in part to social lubricators in the early modern era, we still need research on the differences between Chinese premodern science and Greco-Roman science. And, still more, we need better understanding of how science translated into technological breakthroughs with economic utility.

Law and Finance

The link between property rights and economic advancement is explored at length in the literature (Cem Karayalcin 2016), but it is not entirely clear that Europe had better property-rights regimes. There is, however, near-consensus that the high tenancy rate in China was a manifestation of weak property rights. Here, the difference between muniments and *baiqi* deeds comes to mind. The latter were unofficial title deeds that were meant to bypass the throne, being the majority of title deeds in China. In England, muniments were much stronger deeds on land. The reason *baiqi* were preferred to official *hongqi* deeds was that transaction costs (attaining the Emperor's seal on the contract) were high in China (Huang 2001).

On the other hand, recent work by Liang Linxia (2007, 13) has shown that the Qing authorities did deliver public goods and civil law vis-à-vis *hongqi* contract land disputes. Although lacking the distinction between criminal and civil, the Qing code did make a distinction between crime and non-crime.

Huang (2001, 105, 175) was apparently right to argue that the principle of the protection of property rights was made clear in the Qing Code. Besides, 70-80 percent of the land in China was effectively private. Yet magistrates often intervened where they perceived travesty of the law, e.g. high interest rates.

To be sure, there was a tradition in China whose origins are attributed to Confucius which discourages litigation in favor of mediation. Nevertheless, the recent scholarly literature stresses the high functionality of Qing law (Liang 2007, 249). What is missing from that literature is an indication about the share of *baiqi* contracts in overall land contracts so as to evidence the penetration of Qing law inland.

So what is required here are better data and more ambitious social analysis to determine just how optimal the Chinese legal system was, and more transparency on how magistrates adjudicated cases.

Discussion and Conclusions

This article is not an attempt to provide a sweeping explanation for the Great Divergence. Rather, with China as its focus, it has collated largely qualitative data on several important aspects of that divergence, and pinpointed where further research is necessary before a judgement is made. In other words, I have identified factors which may have contributed alone or in combination to the Great Divergence, in the hope that future research will better integrate and focus the discussion on “what made Asia fall behind”. For now, the implication that these factors worked in tandem is moot. Sivramkrishna’s (2023) article in these pages, too, called for more contemporary evidence to be used in the Great Divergence debate in the context of India.

I have argued that the Great Divergence debate has a distinct fiscal angle. A weak fiscal state meant that resources in China could not be mobilized as swiftly. Conversely, private debt in China was very high in relative terms. What are needed though are better data on the overall tax burden in China (and elsewhere in Asia) as opposed to England, where historical data on taxation seem to be better mapped out.

The article also argued that high interest rates in China were a telltale sign of its relative weakness, and were linked to low market integration. But data on market integration in Asia are currently intuitively contradictory. What we therefore require are more data and empirical studies of all tiers of the loan market from the micro-rural to the urban, how Asian market integration ranks compared with Europe, and what the makings of the national market in each case were.

The article also explored living standards, individual wealth, science and legal (land) rights. Here, more case studies are called for to identify the precise differences between Asia (China) and Europe in areas such as consumption patterns, investment portfolios, premodern cognitive patterns, and court systems.

Even though low Chinese land taxes were cardinal, the position of a Chinese farmer was inferior to that of his English peer. Ownership and indebtedness were high, and market integration did not provide for a lifeline in the way it did in Europe. Here, most experts point to “immiseration”, but California School voices produce contrasting evidence, as did the passages quoted at the beginning of this article. Such accounts should be considered carefully, to assist in reconciling the inconsistencies which are not yet fully explained in the literature.

Finally, this article suggests much more work needs to be done to understand why Jesuit scientific impact remained so limited in Qing China; and to what extent Qing civil law penetrated inland in preference to informal mediation. The weight of evidence currently makes it very difficult to accept California School arguments, but future work could change the way we look at China’s “backward” institutions.

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