

# **EUROPE IN AN ASIAN MIRROR: THE GREAT DIVERGENCE**

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*“Europe is a Peninsular to Asia”*

- Fernand Braudel

### **Introduction and Abstract**

Why did sustained industrialization and modern economic growth first take off in Western Europe but not elsewhere? Attempts to address to this historical conundrum have spawned a large and burgeoning literature related to the theme of “European exceptionalism.” It champions the view that Europe, in particular, North-western Europe, had superior, and in some cases, exceptional economic conditions and social institutions way before her phase of economic take-off in the modern era. This widely prevalent and often contentious view has recently been contested by a new wave of historians and specialists on Asia such as Ken Pomeranz, Bin Wong and Prasannan Parthasarathi. They marshalled evidences to show that living standards in the advanced parts of China and India were on par with those of North-western Europe in the 18<sup>th</sup> century. It was only “chance events” such as the discovery of coal, the colonization of both the old and the New world that tilted the geo-economic balance towards the West.

This chapter provides a general survey of the major hypotheses and evidences presented by the revisionists. We test their hypothesis on the living standards with the latest research on the global comparison of real wages across Eurasia. Our study on real wages comparison lends little support to the revisionists’ claim and reveals that living standards in the advanced parts of China, Japan and India seem to be closer to the laggings parts of Europe – namely, southern and Central Europe – rather than North-western Europe as claimed by the revisionists. Based on these findings, we provide a comparative survey and assessment of other complementary evidences such as demographic and anthropometric indicators, literacy rate, occupational shares, urbanization ratios, consumption patterns and etc..

To shed light on the divergence in living standards and levels of development across pre-Industrial Revolution Euro-Asia, this chapter offers a preliminary survey on the early modern economic, political and social institutions and organization that underpin the operation of goods and factor markets. It reviews the emerging research on comparative degrees of efficiency in grain market integration as well as the differential patterns of commercial organization and trading networks between Europe and Asia. We show that these institutional differences are in various ways shaped by their respective political structure, historical tradition, cultural beliefs as well as physical and geographic factors. They also form the crucial determinants to Asia’s differential patterns of response to the encroaching Western colonialism in the 18-19<sup>th</sup> centuries. Our chapter ends with a brief

comparison on the differential impacts of Western imperialism on India, China and Japan and delineate some broad factors that may have contributed to the exceptional Japanese capacity to respond to Western challenge and become the first non-Western state to industrialize.

## **II. India**

### *Silver and Real Wages:*

Moreland (1920) referred to the gulf between the upper classes and the common man. Little is known about the life of the middle classes. Travel writers discussed the opulence in the Mughal court. Contemporary accounts suggest that the diet of the common man was rice, millet and pulses and fish in the coastal regions. Wheat was less common. Butter (ghi) was more affordable to the common man than in the 19<sup>th</sup> century, but sugar was more expensive. Housing was considered to be of poor quality. The contemporary writers also commented on the rudimentary state of clothing. (Moreland: 270-8) Moreland's view took little account of the cultural and climatic differences in life style. Therefore quantitative comparisons of living standards become all the more relevant.

Desai(1972) attempted a comparison of living standard in India in 1595 and in 1874. He found that while industrial goods were more expensive in 1595 and the average consumption of cloth and metal goods was low, urban workers certainly enjoyed a better standard of nutrition compared to the level in 1961. Moosvi (1973) argues that while the purchasing power of cereals was the same in the two years, prices of other food show that although products like milk and meat were cheaper in Mughal India, sugar was more expensive. Moosvi's revised estimates show that per capita food grain consumption in 1595 was 1.05-1.32 times the level of 1961. However, there is a consensus that if we compare wages between 1595 and late 19<sup>th</sup> century for different categories of workers, living standards did fall. Moosvi (342-47) estimates that in 1595 the average unskilled worker had 10% of income left over after paying for necessities, in the 1870s there was deficit of 16%. For skilled workers the difference is smaller, but does show a fall in real wages. If we accept there by late 19<sup>th</sup> century Asia and Europe were on very different paths of development, then the question is when the divergence began.

Recent studies lend little support to the revisionists' claim and reveal that living standards in the advanced parts of China, Japan and India seem to be closer to the laggings parts of Europe – namely, southern and Central Europe – rather than North-western Europe as claimed by the revisionists. The most acceptable indicator of living standards is money and real wages. We compare living standards using data on silver wage and grain wage from Europe and Asia as well present additional information on wage. Broadberry and

Gupta (2006) find that in terms of wages India and China look much more like the backward parts of Europe rather than like the most developed parts of Europe right from the 18<sup>th</sup> century. With high grain wages reflecting an abundance of grain and low silver wages reflecting low levels of overall development.

Broadberry and Gupta (2006) put together silver wages for different regions of India using a variety of sources. These are earnings of artisans, employees in the Mughal court as well as employees of the European companies at a number of points between 1595 and 1874 in units that will facilitate a comparison with Europe. The data is also subdivided into regional categories Table 1 presents data on daily wages of unskilled and skilled labourers in terms of both their silver content and the amount of grain that they could purchase. Part A provides data for northern and western India, based on the cities of Agra and Surat. Wages in rupees are converted to grams of silver using information from Habib (1982) and Chaudhuri (1978). Part B shows the trend in southern India using wages from different parts of this region. The broad trend is for the silver wage to rise, with the skilled wage about double the unskilled wage, as in the peripheral rather than core northwestern parts of Europe. Table B has highlighted the wage used by Parthasarathi (1998; 2001). We find this to be well above the average wage of the region. There was great differentiation among weavers. Many worked as assistants and earned below the average; Weavers with one loom made close to the average earnings. There were skilled weavers with more than one loom and employed men to work as assistants. While skilled weavers had higher earning and some were likely to have enjoyed a high skill premium. This was clearly not the average wage of the region as implied by Parthasarathi.

In the absence of a reliable consumption basket and prices of goods, the price of grain is used to convert the money wages into grain wages. Here again, we have been careful to use an average price rather than a price below or above the average. Grain prices varied greatly from area to area and year to year. Using a price that reflected a famine situation would make the grain wage very low. Other the other hand using a low price would raise the grain to an artificially high level.

In contrast to the rising trend in silver wages, grain wages trended downwards in northern and western India, as money wages failed to keep up with the rising trend in grain prices, particularly during the early seventeenth century. Mukerjee's (1967: 44, 49) figures for Bengal in the eighteenth century are also consistent with high grain wages despite low silver wages, due to the cheap price of rice. Brenning (1986: 349) argues that subsistence consumption for a household of six was 3.1 kg of rice per day. Taking the wheat/rice ratio of calories per lb from Parthasarathi (1998: 83) yields a subsistence consumption of 4.7 kg of wheat per day for a family of six. On this basis, grain wages were always above subsistence

for skilled workers, but fell below the subsistence level for unskilled workers during the early seventeenth century.

Table 2 allows a direct Anglo-Indian comparison of silver wages and grain wages for unskilled workers. The Indian silver wage for unskilled labourers was little more than a fifth of its English counterpart at the end of the sixteenth century, and it fell to little more than one-seventh of the English level during the eighteenth century. We have excluded Parthasarathi's (1998) estimates from this table since we think they exaggerate the Indian level of wages in the mid-eighteenth century. But even if these estimates were included, they would merely show Indian silver wages temporarily shooting up to about 40 per cent of the British level in the first half of the eighteenth century. The silver wage data suggest unambiguously, then, that the Great Divergence was already well established in the sixteenth century.

Although the Indian grain wage remained close to the English level until the end of the seventeenth century, our data indicate a sharp divergence during the eighteenth century. This divergence occurred partly as a result of a rise in the English grain wage, but also partly as a result of a decline in the Indian grain wage. This means that India looks rather more like the peripheral parts of southern, central and Eastern Europe than the developing parts of north-western Europe

#### *Real Wages and High Agricultural Productivity?*

One explanation of why grain wages were high is low grain price. Parthasarathi (2001: 43-53) claims that the high productivity of southern Indian agriculture was the result not of geographical factors and high yield in rice, but of high levels of investment during the seventeenth and eighteenth centuries. Parthasarathi's explanation of how the investment in southern Indian agriculture came about and how it led to both high levels of economic development and low silver wages raises a number of serious logical difficulties. In the developing parts of north-western Europe, institutional change is usually seen as bringing about investment in agriculture, leading in turn to high agricultural labour productivity. However, this higher agricultural labour productivity did not lead to an abundance of grain and low food prices, because labour moved out of agriculture into industry and services. Rising living standards came from increasing consumption of cheaper industrial goods, together with relatively constant consumption of food. In Parthasarathi's (2001: 43-53) view of southern India, however, investment in agriculture was the result of rulers competing to attract and fix mobile labour. This investment is then seen as leading to an abundance of grain, and low food prices rather than occupational change.

Desai (1972) argues that labour productivity in agriculture was twice as high in 1595

compared to 1961. However, Moosvi (1973) scales this down to about 29% for food grains and 45% in agriculture. Habib (1969) in his seminal work on where there was potential for capitalist development in Mughal India, argued that although it is likely that agricultural land productivity was comparable to other countries including Western Europe, the scale of the surplus was small given the high level of taxation. Further Habib, points to the rudimentary levels of technology as commented upon by foreign travellers. The implications for labour productivity in the economy including agriculture is well captured by Pelsaert's statement that "a job that one man would do in Holland passes through four men's hands before it is finished." (p 60) Therefore labour intensity of Indian agriculture is not an issue of debate and can explain why wages were low.

### *Trade and Market Integration*

How significant was trade and how integrated were markets in India compared to Western Europe.? The following aspects are relevant to assess the importance of trade. First the emerging research on comparative degrees of efficiency in grain market integration sheds light on the development of inter regional trade. A further measure is an assessment of risk in trading in is the insurance premia. This reflects the institutional environment for trade. Finally, overseas trade- how did Asia compare with Europe? Were there differences in the patterns of commercial organization and trading networks between Europe and Asia?

A good measure of the prevalence of inter regional trade and how safe it was to carry goods from one region to another is the inland insurance rates. These rates shown in table 4 indicate fairly moderate rates over long- distance trade within India. as far back as in the mid 17<sup>th</sup> century. These rates increased in the 18<sup>th</sup> century and probably reflect the political turmoil of the period. However, these rates remained more or less the same in the early 19<sup>th</sup> century. The insurance figures indicate that inter regional trade was common and the conditions under which it took place did not vary much over the centuries.

When we look at variations in grain prices, the picture is very different, There is evidence of little arbitrage and prices very dramatically over time and across regions. Supply shocks, affected prices and there was great variation across small geographical areas Table 6 shows the variation in price of rice in a small region in southern India.

Studer's work on market integration suggests that the European markets were more integrated than markets in India. The markets became much more integrated with the development of the railways in the last quarter of the 19<sup>th</sup> century. (Hurd 1975)

There is ample evidence to suggest that there existed a large and a booming network of commerce., There were certain well established channels of grade trade despite the disintegrated nature of grain markets. The peasants brought the grain to the market and the

grain merchant organized its transport. There was also a well established network of trade in manufactured goods. Some artisans worked directly for the nobility, others sold to the merchants involved in long distance trade in the 17<sup>th</sup> century. The system of credit and banking was well developed. Bills of exchange or “hundis” as these were called were widely used. The local money changer acted as the banker and discounted bills of exchange. These intermediaries also acted as deposit bankers. Therefore the Indian economy in the 17<sup>th</sup> century had a well developed commercial system.

Where the Indian commercial network differed from that in North Western Europe was that the prevailing interest rates were much higher in India compared to Britain suggesting that relative scarcity of capital in India. Moosvi (2002) shows that in 1650 the interest rate in England was 4% per year and 7.5-9% a year in Surat. In all regions in India interest rates declined from the mid 17<sup>th</sup> century, but remained high in comparison to North Western Europe.

#### *International Trade in the Indian Ocean*

Indian merchants were also involved in long distance international trade from the 14<sup>th</sup> century. When the Portuguese arrived in the 15<sup>th</sup> century, they had to contend with this merchant fleet. The trading world of the Indian merchant has been described in much detail in the work of Ashin Das Gupta. Social networks played an important role in defying the spheres of the Indian merchant. Gujarati Muslims dominated the overseas trade, while the group that dominated the internal trade feeding into international commerce were Hindu banyas. One explanation why activities were specific to social groups is that informational constraints could be overcome through community ties as in the case of the Maghribi traders. Therefore the distinction between private vs public order institutions in trade were as relevant for India in the 15<sup>th</sup> century as it was for Europe. The merchant ships carried goods to Alexandria, Basra and Baghdad. To the east the ships sailed to Sumatra, but the ships were not sturdy enough to sail the China seas. This was left to the Chinese merchants. (DasGupta, 2001) In 1663, the Surat merchants alone trading overseas had 20 ships. (Habib 1969) The commodities traded included primary goods such as rice, pulses, sugar and raw silk, but also manufactured goods such as textiles. This textile trade was mainly in coarse varieties unlike the European trade that followed, which was more in fine quality products. India's important exports were bullion, spices from East Asia, and horses from West Asia and ivory from East Africa. This booming trade in the Indian Ocean was comparable to the European trade. What changed the trading context was the entry of European monopoly Companies. Indian traders began to lose their share of the intra Asian trade.

### *Urbanization*

Urbanization is taken to be a key indicator of the level of development. Urban activity appeared to be widespread in 17<sup>th</sup> century India from the great towns and cities in the north to the numerous trading centres spread all along the Coromandel Coast in south India and the coastal towns of Gujarat and the west. In 1600, there were 32 urban centres in the Mughal Empire manufacturing cotton cloth (Maloni) Estimates of urban population in Mughal India are based on the notion of flow of resources from villages to urban centres. The more direct evidence comes from writing of contemporary travellers. According to one contemporary estimate, in Akbar's time there were 120 big cities and 3200 townships. The largest city was Agra (population: 500,000- 660,000) Delhi- 350,000 (1660) Lahore- 250,000 (1615), Dhaka, Patna, Thatta- 200,000 (1630s), Ahmedabad- 250,000 (1600), Surat- 100,000 (1663), 200,000(1700). Habib (1999: 83-850) Rajmahal, Multan, Burhanpur were also large cities, but there are no estimates of population. Outside Mughal India, the main urban centre was Masulipatnam- with a population of 200,000 in 1672. Despite the presence of these large cities, most of the population in the rural area. Habib estimates the share of urban population at 15%. This figure declined over the 18<sup>th</sup> and the 19<sup>th</sup> century and it was only in the 20<sup>th</sup> century that it began to recover.

### **III. China**

#### *Patterns and Nature of Long-term Economic Change in China*

On the issue of long-term economic growth or stagnation in China, the so-called Needham question, or Needham puzzle, as posed by the great historian of Chinese science and technology, Joseph Needham, loomed large. It asked why, given her scientific and technological leadership over the rest of the world up until perhaps the 14<sup>th</sup> century, the Scientific Revolution eclipsed China. This question was extended to the economic sphere by China historians such as Mark Elvin; why, given the unmatched superiority of Chinese technology and institutions in the Southern Song (1126-1278), industrial revolution did not take place in China. The models proposed as answers to this conundrum, ranging from Elvin's "high level equilibrium trap" or Philip Huang's "involution" to works by other scholars such as Kang Chao, are fundamentally Malthusian. Long-term economic stagnation, according to this line of argument, is ultimately a consequence of the secular decline in land-man ratio and slow erosion of natural resources, which in turn mitigated against the adoption of labor-saving innovation in technology and organization.<sup>1</sup>

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<sup>1</sup> For a comprehensive survey of the Needham puzzle, see Deng, A critical survey, and Lin, The

Within China, Chinese scholarly works on the question of interpreting what was perceived as China's long-term stagnation took a very different direction which often fell under the so-called 'sprouts of capitalism' literature. Heavily influenced by the Marxist stages of social evolution, the literature sought to identify those budding 'production relations' in Chinese history that resembled those that blossomed to capitalism in Western Europe. The "sprouts" literature has been under severe criticism in the last two decades, most notably from a series of works of Li Bozhong. Li viewed the premise of the 'sprouts of capitalism' as fundamentally flawed in its implicit assumption of a uni-linear path of development where the European model is the universal standard. The relentless search for 'sprouts' could mislead us to miss out the fruits borne on China's own historical roots. Li attributed this obsession with the 'sprouts' to a profound inferiority complex (*qinjie*) developed in the Chinese public psyche from China's perceived backwardness relative to the West since the mid-19<sup>th</sup> century.<sup>2</sup>

In a series of publications (1998, 2000, 2002 and 2003), largely focusing on China's historically most advanced region, the Lower Yangzi, during the Ming (1329-1661) and Qing (1662-1911) period, Li Bozhong went to challenge the long-held thesis of Song or Southern Song economic revolution championed by Elvin and others. He claims that the cited historical records such as the historically high crop yields in the Southern Song period – much higher than those during Ming and Qing – were based on biased and selective evidence. In fact, some of the key factors hailed as constituting the essence of the Song economic revolution – the cultivation of the Champ rice variety, the diffusion of new agricultural tools and best practices, and agricultural intensification – might have appeared in the Song period but only diffused during the Ming and Qing.<sup>3</sup>

Li's *The Early Industrialization in Jiangnan* (2000) is particularly noteworthy for its systematic narrative of the growth of industries in cotton textile, food processing, apparel, tobacco, papermaking, printing, toolmaking, construction and shipbuilding in the Lower Yangzi during 1550-1850. His depiction of the rise of a dynamic, diverse and commercialised printing industry reveals the existence of a mass reading public in the Lower Yangzi.<sup>4</sup> Overall his work attests to industrial progress throughout these three centuries, not only in the scale and technology of production, but also in its organisation and the extent of the division of labour.

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Needham puzzle. The literature on the 'sprouts of capitalism' in Chinese is voluminous, a comprehensive treatment can be found in Xu and Wu, *Zhongguo* (Vol.1).

<sup>2</sup> Li, *Lilun*, chapters 1 and 2.

<sup>3</sup> Li, *Lilun* (chapters 5 and 6) contain most of the criticism on the Song revolution thesis. His thesis on the agricultural achievements in 1620-1850 is in Li, *Agricultural Development*.

<sup>4</sup> Li, *Early Industrialization*, pp.169-188

Urbanisation also grew in the Lower Yangzi, but with a distinctive pattern. A path-breaking book by Liu Shijie, echoed by Li and others, argues that the small-scale, skill-intensive, handicraft, industries in the Lower Yangzi did not give rise to mega-cities, but instead led to the formation of clusters of market towns along the dense and intricate waterways, characterised by extensive geographic specialisation in the marketing and production of agricultural and handicraft products, indistinguishable boundaries between urban and rural, the meshing of agricultural, commercial and industrial activities. Thus, standard historical classification of urbanisation applied in the Western context is inadequate and likely to seriously underestimate the degree of urbanisation.<sup>5</sup>

The revisionist literature by Li and others are very much in line with Kenneth Pomeranz's highly influential "Great Divergence" book. They championed a case of economic growth rather than stagnation in the Lower Yangzi as well as in China in the early modern era, which had proceeded along a technological and institutional trajectory distinctly different from the well-known British or Western European model. In agriculture, efficiency came from gains in the use of better fertilisers, rationalisation of resource use, agricultural intensification and cash-crop cultivation. In industry, technology and organisation were geared towards the saving of the scarce energy and resources. This technical bias induced by relative factor endowment in the Lower Yangzi, combined with the expansion in regional trade and geographic division of labour, constituted what they viewed as Smithian growth. It contrasts with that of the British model of the Industrial Revolution based on the massive switch to the use of inanimate power.

Lastly, the revisionist scholarship had a different take on the historical pattern of Chinese demography. A statistical analysis by James Lee *et al.* of historical micro-demography data, complemented by Li Bozhong's descriptive evidence for the Lower Yangzi, cast serious doubts on the long-held Malthusian perception of Chinese demography. This presents a strong case for preventive checks on population growth in China as revealed in widespread incidence of female infanticide, primitive contraception and abortions, birth-spacing to control marital fertilities, and adoptions.<sup>6</sup>

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<sup>5</sup> Li's own case study of the giant city of Suzhou vividly portrayed the overtime dispersion of commercial activities outside the main centre. Li, *Duoshijiao*, pp.377-445. Thus, previous scholarship, for example by Gilbert Rozman, which uses the number of residents as a cut-off point between urban and rural, tends to seriously underestimate the degree of urbanisation in the Lower Yangzi. Using a variety of sources, Li estimates that urbanisation in the Lower Yangzi reached as high as 20% by the mid-Qing. Li, *Jiangnan*, p.414.

<sup>6</sup> See Lee and Feng, *One Quarter*, and Li, *Duoshijiao*, pp.137-240. In a comprehensive review of James Lee et al's path-breakings works, Osamu Saito (2002), the Japanese demographer, pointed out that preventive checks and low birth rates seemed to be a shared feature of East Asian traditional demography, despite contrasting patterns of family system and geographic mobility. Saito's summary is a sharp departure from the scholarly consensus a couple of decades ago, which often viewed China

Undoubtedly, this recent wave of revisionism both in and outside of China echoes the earlier “industrious revolution” literature for early modern Europe and Tokugawa Japan. Therefore, the lessons of the earlier “revisionism” literature for Europe and Japan can serve as useful yardstick against which the future of Chinese revisionist scholarship can be measured. To move forward, the growth trajectory as charted by the largely descriptive Chinese historiography should be subject to the rigorous test of recent developments in growth theory framework. The growth pattern as argued by recent revisionism is in line with the Boserupian pattern that emphasized “induced innovation” in response to factor price.<sup>7</sup> The “induced innovation” pointed to the insufficiency of the Malthusian framework, which ignored the potentials of factor-biased technological progress and factor substitution that would prevent the fall in marginal productivity of labour at least up to a certain point. Nonetheless, there is the large question of the long-term sustainability of growth in per capita term purely from labor-using type of technical change.<sup>8</sup>

#### *Real Wages*

Nonetheless, major issues remain in this debate. As is true of Chinese economic history in general, the scale and weight of the argument in this debate are an overfit for the amount of quantitative evidences presented. The claim that Asian living standards, at least in the Lower Yangzi, were on par with that of Northwestern Europe is built on rather fragile evidential base. They relied on indirect comparison based on scattered output, consumption or demographic data. The few that attempted comparisons of direct income were largely based on scraps of information about wages and prices in Asia (Pomeranz, *Great Divergence*, Lee and Wang, *One Quarter of Humanity*).

This lacuna has partly been filled a series of recent studies based on relatively rigorous comparison of the purchasing power of real wages of unskilled laborers in Asia and Europe reconstructed based on the systematic price and wage data and consumption baskets. This line of work (Bassino and Ma 2005, Allen, Bassino, Ma, Moll-Murata, Van Zanden 2007, Allen 2007) extends from Robert Allen’s 2001 study on European real wages. As distinguished from our earlier studies, these articles make comparison based on a relative

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as a Malthusian basket case versus Tokugawa Japan’s “precocious” demographic transition. See Nakamura and Miyamoto (1982) for this view.

<sup>7</sup> Hayami and Ruttan, *Agricultural Development*, and Hayami *et al.*, *Agricultural Development of Japan*. For a penetrating criticism of the resource endowment pessimism in Chinese history, see Lin, ‘Needham Puzzle.’

<sup>8</sup> For a theoretical exposition on this issue, see Barro and Sala-i-Martin, *Economic Growth*, pp.68-71.

comprehensive consumption basket of representative goods rather than just grain items and attempt to follow as much as possible standard methodology of international comparison for current period with detailed discussion on the possible margins of errors. The Allen et al 2007 study compared the wages of unskilled laborers in three major cities in 18-20<sup>th</sup> century China, Beijing, Suzhou/Shanghai (in the Lower Yangzi delta) and Canton with those in major European cities. The outcome of this real wage comparison exercise does not seem to support the revisionist view. Figures 1 and 2 reproduce the figures 5 and 6 in the Allen et al 2007 paper.

Insert Figures 1 and 2

We can summarize the Allen et al findings as follows. Firstly, the Yangzi Delta is reputed to have the most advanced economy of any Chinese province, but the real wage there was not noticeably higher than the real wage in Beijing or Canton. Overall, the Chinese cities were in a tie for last place with the Italian cities, which had the lowest standard of living in Europe. And they were far behind that in London or Amsterdam – about 30-40% of that of earning levels there in terms of purchasing power measured by our reconstructed subsistence basket during the 18-19<sup>th</sup> centuries. This makes any optimistic assessment of China's performance is difficult. In fact, if you include the findings of other studies (Bassino and Ma 2005, Özmucur and Pamuk 200?, Broadberry and Gupta 200?, Allen 2007), it reveals that the history of living standards in Japan, India, and Canton, or Turkey in the 18<sup>th</sup> century were quite similar to major urban centers in China. So this may point to a living standard close to subsistence for unskilled laborers in much of the non-industrializing world in the eighteenth century.

Secondly, one major surprise is our finding that unskilled labourers in major cities of China and Japan – poor as they were – had roughly the same standard of living as their counterparts in central and southern Europe for the larger part of the eighteenth century. This calls into question the fundamental tenet of the large “Rise of the West” literature that sees Western Europe – as a whole – surpassing the Rest of the World in the early modern era.

Finally, these real wage studies confirm a second “greater” divergence that occurred with the onset of industrial revolution. The gap in living standards between unskilled laborers in Northwestern European cities and Chinese cities widened after the middle of the nineteenth century. Industrialization that swept through the previously late-coming European countries such as Germany that by the First World War, their workers' standards of living greatly increased over their counterparts in Beijing or Shanghai. The standard of living in China remained low and on a par with the regions of Europe untouched by the industrial revolution.

### *Heights, Living Standards and Human Capital*

The use of anthropometric measures such as heights – a common tool widely applied in European economic history – is still highly preliminary at this stage but already making promising and pioneering contributions to quantify long-term changes in living standards. In the absence of accurate height measurements in traditional China, recent studies by Morgan (2006) and Baten and Hira (200?) and others have begun to collect Chinese immigrant data to Australia and Southeast Asia. These studies allow the reconstruction of height series for Chinese immigrants during the entire 19<sup>th</sup> century, when other systematic quantitative indicators were sorely lacking. Their preliminary findings confirm that the height for Southern Chinese have largely stagnated during the 19<sup>th</sup> century with fluctuations. They also point to a drop in average heights around the mid-19<sup>th</sup> century when the Taiping rebellion devastation broke out. Another study of the heights of railroad workers by Morgan (2004) shows a slight upward trend in heights for the 1900-1930 period (0.07 cm per decade) but with large regional variations. In fact, the only region that shows the most unequivocal growth trend is the Lower Yangzi. This confirms the empirical findings of Ma (2006) that demonstrate Lower Yangzi per capita GDP growth rates between the 1910s and 1930s is almost two or three times faster than the national average, due to the rise of Shanghai-based industrialization.

Another area of measure is the question of human capital as measured by literacy rates. Due to the difficulty of measurement, studies on literacy in traditional China or elsewhere has always been controversial. The optimistic assessment came from Evelyn Rawski's path-breaking study that offered an estimate of 30-45% and 2-10% literacy rates for males and females for 18<sup>th</sup> century China. These estimates take 18<sup>th</sup> century very close to the Japanese level (as estimated by scholars like R.P. Dore and Akira Hayami with 43% Japanese male and 19% Japanese female having had some schooling) which was reputed to be one of the highest in the early modern world. Rawski's optimistic assessment is cited as strong support for the revisionist case. Li Bozhong (2003, 2006) revisits this issue and makes a comprehensive argument for the diffusion of popular education in traditional China especially the Lower Yangzi beyond the preparation for the official Civil Service Examination. Li points to the rise of a dynamic book-publishing and book-rental service sector and documents the diffusion of the use of abacus and book-keeping for merchants and households. The more solid data as surveyed by John Buck for the 1930s shows 40% of people with some schooling and with a literacy rate of about 30%. This seems to confirm the findings for the 18<sup>th</sup> century with the assumption that literacy rates stagnate in these two centuries.

Some pioneering works in the area of historical numeracy are done by Joerg Baten and

his associates. Using a unique measure of numeracy: whipple index which is essentially a measure of age-heaping. Their studies confirm a strong negative correlation between the incidences of age-heaping and numeracy rates. Using Chinese archival documents for 17<sup>th</sup>-18<sup>th</sup> centuries as well as population census of the 1950s, they reveal striking low rates of age-heaping or high rates of numeracy. For example in the late 17<sup>th</sup>/early 18<sup>th</sup> century data, age heaping in China was only about 110. Most European countries reached such a low level not before the late 18<sup>th</sup> century, whereas the early 18<sup>th</sup> century levels of France and Germany were much higher (in the range of 160-220).

The high rate of numeracy as measured by age-heaping seems to be confirmed for Japan and Taiwan in the 19<sup>th</sup> century. Combining this with the real wage research, we see a pattern of relatively high level of human capital co-existing with a low level of per capita income (as measured by both real wage and per capita GDP). This finding bears implications that have yet to be explored far beyond the current revisionist literature. We feel that this may be a more important contributing factor to the rapid catch-up first of Japan, and then East Asia in general.

#### *Trade, Market Efficient and Legal Regime*

Institutions have figured relatively little in revisionist literature on Chinese economic history. In fact, Pomeranz views the property rights or the freedom to contract in traditional China as no less secure or flexible than in Western Europe.<sup>9</sup> This naturally leads the revisionist school to an explanation of the Great Divergence based on resource endowments.

The efficiency of market institution seems to find some strong empirical confirmation from market integration studies based on statistical correlation of regional grain prices, compiled from the elaborate government grain report system. With increasing methodological sophistication, this line of research argues for a reasonably high degree of market integration and efficiency in 18<sup>th</sup> century China, possibly rivalling or even exceeding that of contemporaneous Europe.<sup>10</sup> Were this true, this raises the large question on the nature of commercial organisation that supported this high level of market integration? More importantly, how were commercial contracts enforced, and how was the prevalent principal-

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<sup>9</sup> For a summary of the California school, see Ma 2004. See Pomeranz (2000) on the flexibility of traditional Chinese factor markets. See Philip Huang, Zelin et al for these revisionist studies on traditional Chinese legal system.

<sup>10</sup> Wang, Secular trends, Li, Integration and disintegration, Shiue, Transport costs, Shiue and Keller, Markets in China. Shiue's work breaks new ground with a trade arbitrage model that incorporates for the first time the effects of inter-regional trade and inter-temporal substitution through a storage system in 18<sup>th</sup> century China. Wang compiled of a massive database for grain prices at prefecture levels for the Qing period. A comprehensive survey of the price studies in Qing China can be found in Kishimoto *Shindai Chugoku*, pp.11-73.

agent problem in long-distance trade surmounted in an era of pre-modern transportation and communication technology? To answer these questions, we first turn to the formal legal system in traditional China.

The past decade has seen a series of research and interest on Chinese traditional legal system which, without controversy, revises the previously negative assessment. Here, we follow the more traditional view advanced by Japanese legal scholars such as Shuzu Shiga and others.<sup>11</sup> Shiga started out with the well-known fact that the Chinese legal apparatus was an integral part of the administrative system; the administrative bureaucracy within the hierarchy – from the county level all the way to the emperor – was the final arbiters in criminal cases. This feature is crucial for understanding that the Ming and Qing penal codes, despite their reputed elaboration and comprehensiveness, were decision rules designed for the bureaucrats to meter out punishments proportionate to the extent of criminal violations. Similarly, legal rulings can be reviewed and changed only through the multiple layers of bureaucracy within the administrative hierarchy. Legal statutes or sub-statutes were not open to contestation and interpretation by the litigating parties or independent third parties.

The fundamentally penal nature of the Chinese legal codes was not amenable to dispute resolution of commercial and civil nature. However, the county magistrates, the lowest level bureaucrat did handle and rule on legal disputes that did not entail any corporal punishment. It has been shown now that a vast number of civil and commercial cases were actually brought to and settled at the court of the county magistrates.<sup>12</sup> But Shiga's main contribution, based on his reading of the rulings of the magistrates, is to point out that these county-level trials were something more akin to a process of 'didactic conciliation', a term he borrowed from the studies of Western scholars of the Tokugawa legal system in Japan. The decisions of the magistrates were not legal 'adjudication' as in the Western legal order. They invoked general ethical, social or legal norms as their legal basis without the citation of legal codes or customs, formal or informal. These rulings, in accordance with the intermediation nature, required the written consent of the litigants.<sup>13</sup> The administrative and 'intermediation' nature of the legal system on civil matters is consistent with the absence of a formal civil and commercial code and a missing professional legal class. More importantly, partly because of the government dominance in the legal system, the extensive customary laws in the private

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<sup>11</sup> See Shiga *et al.*, *Ming Qing Shiqi*, Huang, *Civil Justice*.

<sup>12</sup> For the extent of average people utilising the county level civil trial system, see Susumu Fuma's article in Shiga *et al.* and also Huang, *Civil Justice*.

<sup>13</sup> Huang (*Civil Justice*), based on his archival legal cases, challenged Shiga's thesis and argued that the rulings of magistrates were binding and had basis in formal legal codes. However, such conclusions, as argued in Shiga and Terada's replies to Huang, were based on a questionable methodology, as Huang 'rediscovered' and matched the formal penal codes with the original legal rulings of the magistrates based on his own assessment. See Terada (1995).

sphere, as Shiga argued, would not, by nature, take on a formal structure.

### *Merchants Communities*

How were commercial transactions and particularly long-distance trade conducted and sustained in the absence of a formal legal code? This is partly made up by a plethora of informal rules in the form of family bylaws, lineage rules and guild regulations, which, enforced through collective mechanism, alleviated the pervasive information and commitment problems to effectuate the commercial expansion in Ming and Qing China. Merchant groups and commercial guilds comprising natives have long been a dominant form of commercial organisations throughout Chinese history. Historians often identify at least ten distinctive native-place merchant groups in China.<sup>14</sup> The dominance of merchant group is clearly reminiscent of Avner Greif's study of Magribis trading group in the late-Medieval Mediterranean. Below, we describe two of the largest merchant groups originating in Huizhou and Shanxi that reached truly national scale.

The first group, from around Huizhou city area of Anhui province, also called the Hui Merchants, had been known as early as the Song period. They began to thrive during the Southern Song following the southward relocation of Chinese capital to Hangzhou, Zhejiang province, which is within their easy access through the Xin'an River. They rose to commercial prominence possibly from the middle of Ming. Although the bulk of the trading activities of the Hui merchants were along the Yangzi, especially the Lower Yangzi region, their reach extended nationwide and even overseas to Japan. The treacherous and mountainous geography of Huizhou supplied them with meagre arable land but abundant isolation, providing for effective shelter from outside aggression and stable village communities.<sup>15</sup>

Geography may be linked to another Huizhou phenomenon; its elaborate and sophisticated lineage system. Recent research revealed that Chinese lineage as a form of social and economic organisation was far more dynamic and flexible than previously understood. For example, David Faure pointed out that lineage, as distinguished from family, has a distinctive 'corporate' character: properties were owned in the name of lineage with perpetuities lasting beyond the lives of any individual members; rights to partake in the distributions of lineage assets were regarded as shares (*fen*) that depended on contributions rather than descent; the managers had the rights and responsibilities, to manage, but not to dispose of the property without the consent of the lineage segments concerned.<sup>16</sup>

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<sup>14</sup> See Zhang Zhongmin (1995) for the ten merchant groups.

<sup>15</sup> Yao, *Huizhou Xue*.

<sup>16</sup> Faure, *Lineage*, pp.84-87.

More intriguingly, lineages could expand or contract through the so-called lineage union (*lianzhong*) – different lineages combining their genealogies (*tongpu*) and amalgamating under a common ancestor, who, in most cases, was actually fictitious. Sometimes a lineage union could result in the formation of giant lineage encompassing several tens or even hundreds of thousands members across counties or even provinces governed by elaborate rules. The motivation behind lineage union, as most scholars agree, seemed economic and political more than anything else. Resources pooled by lineages provided important local public goods: charities for the poor, education funds for the young and promising, and opportunities for commercial and financial expansion.<sup>17</sup>

Thus, a region's degree of commercialisation seemed to positively correlate with its strength of lineage organisation. For example, lineage practices were most widespread in the Pearl River and the Lower Yangzi delta. The Huizhou lineage seemed to top all. Therefore, trust among Hui lineages provided credit, capital and business partnership. Lineage members and very often their domestic servants were the main staff members of the firms: managers, accountants, runners or agents across distant trading towns. The careful compilation and constant update of lineage genealogies served the important function of information gathering and commercial networking. Genealogies, as one scholar put it, were the practical roadmap for the Hui migrant merchants.<sup>18</sup>

The organisational strength brought them unmatched competitiveness. In Nanjing, the coordination of 500 Hui merchant pawnshops drove out Fujian merchants with below-market interest rates. In Yangzhou (Northern Jiangsu), Hui merchants usurped the once dominant share of the Shanxi group in the highly profitable salt trade under government monopoly. Soon, trade in ink and printing products in Shanghai, grain and lumber in Wuhu, Anhui province and textiles in the Lower Yangzi, was to become their mainstay. Along the Yangzi, particularly the Lower Yangzi, their presence has become so ubiquitous as to give rise to the saying that 'no Hui, no market towns' (*wuhui bu chengzhen*).<sup>19</sup>

The second merchant is from Shanxi province in a region Shanxi merchant group, from a region with a fair share of barren land, achieved commercial fame possibly even earlier than that of the Hui. Their trading routes, more in the North-South direction, extended nationwide and reached Russia through the caravan land-routes. But what brought them unprecedented prosperity was their nationwide money remittance service. The legend has it that it all started around the 1810s when a

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<sup>17</sup> See Qian (*Xuyuan*) for detailed research on the nature and extent of lineage and lineage unions. A careful study by Pyo Yuan-Gao (*Ming Qing*) shows that a lineage in Huizhou, through union and amalgamation had expanded from 10 branches in 1608 to 65 branches by 1753 (p.211-212).

<sup>18</sup> Pyo Yuan-Gao (*Ming Qing*) and Sachiko Usui (*Kishu Shounin*)

<sup>19</sup> See Zhang *Qianjindai Zhongguo*, pp.156-168, Ye, Huizhou he zhujiang and Zhang *et al.*, *Huishang Yanjiu*.

paint and dye merchant started China's first piaohao, a banking firm that provided merchants and long-distance travellers with drafts that they could exchange for cash at a specified branch after they reached their destination, thus effectively reducing the cost and risk of carrying bulky metallic cash.

By the mid-19<sup>th</sup> century, dozens of piaohao firms based in three Shanxi counties were setting up branch offices throughout major commercial cities in China, and turning, of all the places in China, a remote, little-known city, Pingyao, into the financial hub of a nationwide network of money remittance. After the turn of the century, they reached into Japan and Korea. Thus, the Shanxi bankers had locked up the money transfer business in China for an entire century until the fall of Qing in 1911.<sup>20</sup>

The Shanxi bankers developed a distinctive set of organisational features that made little use of lineage ties, professedly weaker in Northern China. While the capital of a *piaohao* is based on business partnership or individual proprietorship with unlimited liability, the daily operation of a *piaohao* was actually run by outside managers and staff with minimal or no interference from its owners. In fact, as Zhang Zhongmin pointed out, many firms had an explicit exclusion clause barring the hiring of staff related to their owners.<sup>21</sup>

The second feature of *piaohao* is its reward structure. The assets of a *piaohao* consisted of capital share (*ninggu*) from owners and labour shares (*shenggu*) from managers and staff. Labour shares entitled staff to partake in the share of dividends from profits, a scheme in striking resemblance to the modern profit-sharing scheme designed as a way to provide incentives that align the interests of employees with the long-term interest of their company.

Finally, what made this surprisingly 'modern' system tick was the addition of a third, very 'traditional' element: all hiring were restricted to Shanxi natives only. Usually an apprentice system was used to recruit staffs locally (including those to be sent to branch offices outside Shanxi) after careful background checks and often with their families or other reliable third parties as their guarantors. Any staff member caught and dismissed for fraudulent behaviour, as was reported, would be denied future employment opportunities by all Shanxi bankers. Clearly, the peace of mind of those who willingly parted with their silver taels – sometimes their life-savings' worth – for a piece of a draft paper, rested almost solely

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<sup>20</sup> For Shanxi bankers' branch offices in Japan and Korea, see Hamashita (*Financial Networks*). The city of Piaoyao became a classic class of agglomeration of other complementary services to support the Piaohao service. These services, all privately owned and operated, included professional bodyguard service (Biao Ju) which offered protection for long-distance transport of silver and mail delivery (Ming-Xin Ju). For a narrative of Shanxi bankers, see Shi Roumin, *Shanxi*.

<sup>21</sup> Zhang Zhongmin, *Jiannan*, pp. 36-7. Shi Roumin, *Shanxi*, chapter 2. For a comparative study that characterize the Hui merchants as lineage based versus Shanxi merchants as native-place based, see Liu Jianshen and Liu Pengshen, *Jinshang*, pp.342-348.

on the incorruptible reputation of the Shanxi bankers.<sup>22</sup>

### *Merchants, State and Political Economy*

It is important to place the success of Chinese merchant group in the larger political-economy context of traditional China. It is true that Chinese merchants operated in a centralized empire where they were largely powerless in the making and shaping of formal rules – a factor that could be important in accounting for their time-honoured preference for informal, and internal and collectively oriented manner of resolving disputes and enforcing contracts. However, within the political system, Chinese merchants had access to other opportunities, which, in fact, supplied part of the *raison d'être* for merchant groups in China.

It is well-known that access to the Chinese bureaucracy was distinctively 'formal' or impersonal. The inside track to the political power structure was, in the majority of cases, acquired through one's success in the highly competitive, arduous and impartial Civil Service Examination based on Confucian classics. Successful examinees who became gentry or bureaucrats were entitled to taxation and legal privileges. In view of the status of bureaucrats as administrators, tax collectors and legal arbiters, this system generated enormous incentive effectives – or rather distortions - for Chinese society, particularly merchant groups whose accumulated wealth was most vulnerable to the damages of arbitrary power.<sup>23</sup>

It is precisely in this area that the Hui merchants scored the highest in beating the system. For long, scholars have long been mystified by the passion for Confucian learning in Huizhou, which took pride in its numerous academies, schools, and literary associations. The emergence of a particular Huizhou school for the study of Confucius that upheld the social status of merchants has led some to question the old adage that that Confucian ethics were anti-commerce. Instead, Confucian values supplied ethical standards and moral motivation for Hui's commercial success.<sup>24</sup>

But beneath all this passion lies hard economic rationality: Huizhou had a proven track record in turning out successful candidates for the Civil Service Examination and Huizhou natives claimed a disproportionate share in Chinese bureaucracy.<sup>25</sup> Chinese society overall, also responded to incentives. Passion for studying Confucius, as others have argued, was not a distinctively Huizhou phenomenon – it was a common trait of all major merchant groups.

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<sup>22</sup> Huang, *Shanxi Piaohao*, p. 608.

<sup>23</sup> See Chang's (*Chinese Gentry*) classic study on Chinese gentry and Civil Service Examination. For an argument that the Civil Service Examination as a retarding factor on the growth of scientific knowledge in China, see Justin Li "Needham Puzzle."

<sup>24</sup> Ye Xian-en, Rujia.

<sup>25</sup> For academies and schools and successful candidates of Civil Service Examination in Huizhou, see Ye, *Huizhou he jujiang*, pp. 34-37. For literary association in Huizhou, see Xiong, *Shindai Huishu*, pp.117-121.

In Guangdong, Lower Yangzi and elsewhere, lineage properties, lineage union and other social organisations were invested and formed deliberately to enhance the chances of success at the examination by their own candidates.<sup>26</sup> The bureaucrat-merchant nexus is important in accounting for the dominant position of the Shanxi and Huizhou merchants in salt trade under government monopoly and later Shanxi bankers' role as Qing's official agents of money remittance.

The rapidly changing political context marked by the intrusion of Western powers in China since the mid-19<sup>th</sup> century provides us a unique opportunity to examine the impact of shifting political institutions on the evolution of merchant organization in China. The Huizhou merchants, who suffered their loss of salt trade privileges under Qing's 1830s salt reform, and the devastation of the 1860s Taiping rebellion, lost their predominance. In Shanghai, while some seemed to stay with their traditional trades in pawn shops, inks and tea and so on, others diversified and integrated with the local community.<sup>27</sup> On the other hand, the 1860s Taiping rebellion which greatly increased the hazard of long-distance travel, proved a boon for the money remittance business of the Shanxi bankers. Their prosperity lasted into the 20<sup>th</sup> century. However, possibly constrained by their exclusive hiring practices, they made little inroads in industrial finance which was to blossom in the early-20<sup>th</sup> century in major coastal cities, even though their branch offices were located there.

This new era saw the rising prominence of coastal-based merchant groups over those from China's interior regions. In the treaty port of Shanghai, the so-called Ningbo clique, the merchants from around the city of Ningbo in Zhejiang province, acquired a dominating presence in Shanghai's rapidly growing native and later modern banking sectors through the cultivation of lineage and native-place ties.<sup>28</sup> In Shanghai's so-called golden 1920s which saw an industrialization boom, the traditional native banks (Qianzhuang) became the most important agent of industrial finance for Chinese entrepreneurs.<sup>29</sup>

However, with the intrusion of Western colonialism and later the evolution of Shanghai from a colonial enclave towards a Western style city-state following the fall of Qing in 1911, merchant organization was undergoing profound transformations. In a recent study based on newly opened archive materials, Du Xuncheng analyses the elaborate rules and regulations designed by the Shanghai Native Bank Association to ensure the rights and creditworthiness of its member banks in an era of political and national disintegration. In particular, he notes

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<sup>26</sup> For the importance of bureaucrat-merchant nexus, see Zhang, 'Jiaer haoru', p.15 and Ye Huizhou *he Zhujiang*, p.36-7.

<sup>27</sup> Zhang Haipeng *et al.*, *Huishang Yanjiu*, chapter 11.

<sup>28</sup> Susan Mann, "The Ningbo *Pang*"

<sup>29</sup> See Ma. "Modern Economic Growth" for the Shanghai-based industrialization and the role of City-state institutions.

that the Association's rules for entry and exit of member native banks were entirely based on a bank's financial position – lineage or native place was no longer a factor. Moreover, the Association rules on disputes resolutions, being formally published and distributed, very often formed the legal principles for financial litigation in the Shanghai mixed court. In cases when the legitimate rights of its member native banks were violated by other agents outside Shanghai and negotiation for settlement failed, the Association often resorted to the multi-lateral punishment strategy by notifying all its member banks to suspend any future transaction with that agent. Overtime, their rules were gaining increasing recognition and often become the guiding principles for native bank operations outside Shanghai.<sup>30</sup> Clearly, a transition from informal to formal mechanism of contract enforcement was taking place.

## CONCLUSION

(to be completed)

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<sup>30</sup> Du Xuncheng, "A Preliminary Study."

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TABLE 1: Indian silver and grain wages, 1595-1874

<i>A. Northern and western India</i>						
	Silver wage (grams per day)		Wheat grain wage (kg per day)		Rice grain wage (kg per day)	
	Unskilled	Skilled	Unskilled	Skilled	Unskilled	Skilled
1595	0.67	1.62	5.2	12.6	3.1	7.5
1616	0.86		3.0		2.4	
1623	1.08		3.8		2.9	
1637	1.08	2.37	3.8	8.3	2.9	6.5
1640	1.29		4.5		3.5	
1690	1.40		4.3			
1874	1.79	5.27	2.5	7.5		

<i>B. Southern India</i>					
	Silver wage (grams per day)		Rice grain wage (kg per day)		
	Unskilled	Skilled	Unskilled	Skilled	
1610-13	1.15		5.7		
1600-50	1.15		3.2		
1680	1.44	2.44	3.9	6.9	
1741-50	1.49		2.1		
1750	(3.02)	(7.56)	(4.2)	(10.5)	
1779	0.86		1.1		
1790	1.44		1.8		

Sources and notes:

*Northern and western India*: Silver wages: 1595: Daily wages for unskilled labourers and skilled craftsmen in Agra from Abū 'l-Fazl [1595: 123, 132-133, 145-146, 155, 159, 161-162, 235-236, 261-264, 297], following Desai (1978: 56-57).

1616, 1623, 1690: Daily wage for unskilled labourers in Surat derived from monthly wages of peons from Habib (1982: 379).

1637: Daily wage for unskilled labourers in Agra derived from monthly wages of peons from Habib (1982: 378). Daily wages for skilled workers in Agra from Mukerjee (1967: 24, 48).

1640: Daily wage for unskilled labourers in Surat derived from monthly wages of peons from Foster (1906-27, volume 1634-36: 151).

1874: Daily wages for unskilled and skilled labourers in Agra from Moosvi (1987: 335). Conversion rates from rupees to silver: 1 rupee was worth 10.78 grams of pure silver (Habib, 1982: 360-361; Chaudhuri, 1978: 471).

Grain prices: 1595: Grain prices from Abū 'l-Fazl [1595: 65], noting that a “man” of 1595 was 55.32 lb (Heston, 1977: 393). Rice price 110.62 lb per rupee, wheat price 184.36 lb per rupee.

1616, 1623, 1637, 1640: Grain prices from Moreland (1923: 171) at 65 lbs per rupee for rice and 82.5 lb per rupee for wheat.

1690: Wheat price from Habib (1982: 373) at 72.40 lb per rupee.

1874: Wheat price from Moosvi (1987: 335) at 33.73 lb per rupee.

*Southern India:*

Silver wages: 1610-13: Daily wages for unskilled labourers in Golconda based on wages of servants in Dutch factory from Arasaratnam (1986: 342).

1600-50: Daily wages for unskilled labourers in East Godavari Delta based on

**TABLE 2: Indian silver wages, 1595-1874 (rupees and grams of silver per day) Northern and Western India**

	1595 Agra	1616 Surat	1623 Surat	1637 Agra	1640 Surat	1690 Surat	1874 Agra
<b>Unskilled laborers</b>							
Wage per day (rupees)	0.0625	.08	0.10	0.10	0.12	0.13	0.166
Wage per day (grams of silver)	0.72			1.12			1.94
<b>Skilled craftsmen</b>							
Wage per day (rupees)	0.15			0.22			0.489
Wage per day (grams of silver)	1.73			2.56			5.70
YEAR	SOUTH INDIA						
	PLACE	CATEGORY	WAGE IN PAGODA Per month	IN	RUPEE WAGE per day		
1610-13	Golconda	Master craftsman	1		12		
		Assistant	.3		04		
		Servants in Dutch factory in coastal towns	1		12		
		Servants in Dutch factory in interior towns	.5		06		
1622	Masulipatnam	Factory servant	.5		06		
1600-1650	Eastern Godavari	Master Weaver	1		12		
		Assistant	.3		04		
1680	Do	Rich weaver	1.7		18		
		Ordinary weaver	.75		08		
		Servants in Dutch	1		12		

		Factory		
1700-1741	Madras	Labourer scavenging services	in .56	06
1741-1750	Do	Labourer scavenging services	in 1.3	14
		Palanquin bearer	1.25-1.75 (1.5)	16
	Interior	Weaver	1.3- 1.5 (1.4)	15
1750	Cuddalore	CalicoWeaver	2.5(?)*	3(?)
1760-70	Do	Skilled Weaver Of fine calico	6.25(?)*	75(?)
1779	Cuddalore	Weaver	.75	08
1790	Do	Weaver	1.25	13
1790	Vizagapatnam	Weaver	1.25	13
1790	Madras	Weaver	1-1.5(1.25)	13
1800	Tanjore	Skilled Weaver	3.8	4

**TABLE 3: An Anglo-Indian comparison of the daily wages of unskilled labourers, 1550-1849**

*A. Silver wages (grams of silver per day)*

Date	Southern England	India	Indian wage as % of English wage
1550-99	3.4	0.7	21
1600-49	4.1	1.1	27
1650-99	5.6	1.4	25
1700-49	7.0	1.5	21
1750-99	8.3	1.2	14
1800-49	14.6	1.8	12

*B. Grain wages (kilograms of grain per day)*

Date	England (wheat)	India (wheat)	India (rice, on wheat equivalent basis)	Indian wage as % of English wage
1550-99	6.3	5.2		83
1600-49	4.0	3.8		95
1650-99	5.4	4.3		80
1700-49	8.0		3.2	40
1750-99	7.0		2.3	33
1800-49	8.6	2.5		29

Sources: Tables 1, 2, 5.

Note: Wheat equivalence of rice obtained on calorific basis, multiplying rice grain wage by

1.5 (Parthasarathi, 1998: 83).

**Table 4: Insurance Rates on interregional trade.**

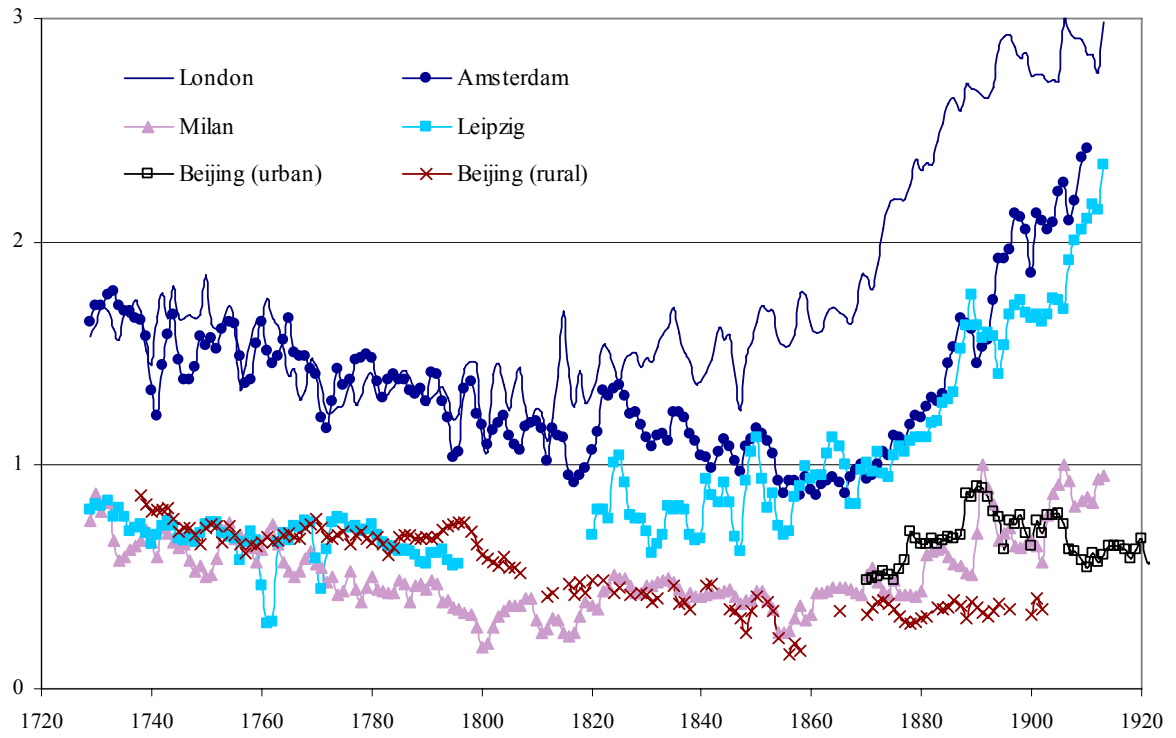
Year	Goods insured	Route (miles)	Insurance Charge(%)
1646	Treasure	Daman-Surat 60	1
1647	Commercial Goods	Ahmedabad-Thatta 315	1/2
1655	Cash	Masulitatnam-Surat 675	1
1795	Opium & Cloth	Indore-Ahmedabad	2
1795	Coins& bullion	Indore-Ahmedabad	1.25
1795	Money&bullion	Poonah- Malwas	2.00-2.50
1795	Cloth	Nanipur-Malwa	0.5-0.63
1795	Cloth	Jaulnah-Indore	2.00
1795	Cloth	Mirzapur- Indore	1.50-2.0
1820	Opium & Cloth	Indore-Ahmedabad	1.00-1.5
1820	Coins& bullion	Indore-Ahmedabad	1.00
1820	Money&bullion	Poonah- Malwa	2.5
1820	Cloth	Nanipur-Malwa	1.0-1.5
1820	Cloth	Jaulnah-Indore	1.25-1.5
1820	Cloth	Mirzapur- Indore	1.75

Source: Habib (1963) for the 17<sup>th</sup> century and Moosvi (2001) for the 18<sup>th</sup> and 19<sup>th</sup> centuries

**Table 5: Prices in India: Rice in lbs/Rupee in South India**

YEAR	PLACE	PRICE (av. price)
1610-13	GOLCONDA MASULIPATNA	93-141 (117)
1655	MADRAS	73
1661	BIMPLIPATNA	67
1670		
1676	MASULIPATNA	33
1678	DO	97
1682	DO	31
1697	NAGAPATNA	97
1698	DO	52
1709	DO	22
1711	DO	60
1712	MADRAS	19
1714	NAGAPATNA	28
1714	MADRAS	71
1719	DO	34
1721	DO	70
1730	NAGAPATNA	59
1730	PALGHAT	17
1733/4	NAGAPATNA	28
	PORTO NOVO	13
	SADRASAPAT	10
	MADRAS	20
	PALAGHAT	13
	MASULIPATNA	9

Figure 1. Real Wages in Europe and Beijing



Sources: Allen, Bassino, Ma, Moll-Murata and Van Zanden

Figure 2. Real Wages in London and Asia

