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Why Manchester but not Hangzhou? **A Case Study of the State's Role in the Divergence of** **the Textile Industry in the Southern Song Dynasty and** **Britain**

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Abstract English

This paper began with the description of Southern Song Hangzhou and Pre-Industrial Manchester, which were important textile cities in history. In the following parts, the paper follows the development trace of textile industry in pre-Industrial Britain and Southern Song. Through the comparison of these two cases, state's role in the divergence of textile industry in Britain and Southern Song Dynasty is discussed: In British case, the state influenced the domestic textile industry through the mercantilist policies and retreat from monopoly via guild system spontaneously. The result is the expansion of the market and state's retreat from the operation or management of the private enterprises. This made the organizational change from domestic system to factory system possible before the Industrial Revolution; In Southern Song case, the state facilitated the market expansion and spread of technologies. Under such condition, Southern Song textile industry could develop at a very high technological level and with a very strong Smithian dynamics. However, in the rural area in where the proto-industrialization of Southern Song textile industry took place, the state maintained the two-tax system which required every household to pay large portion of taxes via means of textiles. Moreover, because of the serious fiscal problems, Southern Song state even increased the burden of tax of every household. Therefore, the domestic system that based on the production in household became the optimal option for the Southern Song textile industry. Without the strong incentives, the organizational change in Southern Song stagnated and finally lagged behind the Britain. The divergence of textile industry, as well as the fate of Hangzhou and Manchester then took place. With above-mentioned analyses, this paper tries to prove that state is a role that could not be neglected in the Great Divergence between East and West.

Abstract German

Am Beginn dieser Arbeit stand die Beschreibung von Süd Song Hangzhou und dem vorindustriellen Manchester, die die beiden wichtigsten Textilstädte der Geschichte waren. In den folgenden Kapiteln folgt diese Arbeit den Spuren der Entwicklung der Textilindustrie im vorindustriellen Großbritannien und dem Südlichen Song. Durch den Vergleich dieser beiden Fälle wird die Rolle des Staates bei dem großen Auseinanderdriften der Textilindustrie in Großbritannien und der südlichen Song Dynastie diskutiert. Im britischen Fall beeinflusste der Staat die heimische Textilindustrie durch merkantilistische Politiken und gleichzeitigem Rückzug vom Monopolsystem über Gilden. Das Resultat ist eine Ausweitung des Marktes und der Rückzug des Staates vom operativen Management in privaten Unternehmen. Dies ermöglichte den organisatorischen Wandel vor der industriellen Revolution von einem häuslichen System hin zu einem Fabriksystem. Im Fall von Südlichen Song förderte der Staat die Expansion des Marktes und die Verbreitung von Technologie. Unter diesen Bedingungen konnte die Südliche Song Textilindustrie sich entwickeln und einen hohen technologischen Grad erreichen mit sehr starken Dynamik à la Adam Smith. Allerdings in den ländlichen Gebieten wo die proto-industrialisierung der südlichen Song Textilindustrie stattfand, unterhielt der Staat ein Zwei-Steuern System das von jedem Haushalt verlangte, einen großen Teil der Steuern in Form von Textilien abzuliefern. Dazu, wegen ernster finanzieller Probleme, erhöhte der südliche Song Staat die Steuerlast der Haushalte. Daher bekam das häusliche System basierend auf Produktion in Haushalten die optimale Form der Textilindustrie im südlichen Song. Ohne starke Anreize stagnierte der organisatorische Wandel im südlichen Song und fiel schließlich hinter Großbritannien zurück.

Die Divergenz der Textilindustrie, als auch das Schicksal von Hangzhou und Manchester nahm seinen Lauf. Mit der oben erwähnten Analyse versucht diese Arbeit zu beweisen, dass der Staat eine nicht zu vernachlässigende Rolle im großen Auseinanderdriften zwischen Ost und West spielte.

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1. Introduction

It is Hangzhou, in the Emperor Gaozong's reign (1107 A.D. -1187A.D.), years after the peace treaty was drawn between the Southern Song and Jin. Prior to that occasion, this city was taken as the capital city of the empire after the collapse of the Northern Song and renamed as "Lin'an" (临安), which means to settle down temporarily. The scourges of war led to its destitution. But, the coming peace enabled life in the city to revert to the days before the wars. The revival of comfortable city life made this city not merely a temporary harbor, whereas officials of the empire had already forgotten the task of restoration of lost northern territory. The high-quality life in Hangzhou was built on the prosperity of commercial activities and handcraft industry in the empire. As early as Emperor Gaozong's reign, Hangzhou had become a place that combined market and manufacturing. The industrial activities in this city and nearby rural areas were mainly textile production, especially the manufacture of high-quality silk fabrics. Moreover, since Hangzhou was the location of the court, the state placed the government-run workshops near the city. Water frames were used to drive textile weaving. This sophisticated machine was second to none in the world for a long time. In West, a similar machine was invented by the Arkwright in the year 1767, when Britain had already taken its first step into the Industrial Revolution. As early as the beginning of the Southern Song Dynasty, Hangzhou led the Chinese textile industry to reach its peak.

Now imagine Manchester at the beginning of the 18th century. It was still a medium-size town with a population of around 10,000 people. Before that, it had been a cloth city that combined production with trade. As early as the Elizabethan era, Manchester became a manufacturing and trading centre for wool and linen textiles. This diversified economic structure rendered this city the most prosperous place in Lancashire. But until the beginning of the eighteenth century, it did not gain national significance as it would in the Industrial Revolution era. Cotton, through which

Manchester attained its glory, had not yet been well-established in the Lancashire region. The cotton textiles that were produced in the Manchester region by the 1690s were cotton-linen, mainly manufactured for the domestic market. At that time, the quality and variety of cotton textiles in Manchester were not compatible with Britain's colonies in the Indian subcontinent. This weakness of Manchester cotton textiles was the result of the relatively backward technologies that were utilized in the rural household, within which the pre-Industrialization Revolution textile manufacturing mainly took place. Manchester at that time was only one of the branches of newly expanding inland towns situated in the rural-industrial region.¹ The picture of cotton textile production in the early eighteenth century was differentiated from the now-classic scene of mechanized cotton textile manufacturing in Industrial Manchester.

Whether looking at the scale or technologies, the textile industry in Southern Song's Hangzhou seems to have developed beyond the capacity of pre-industrial Manchester. It seems that at least in the textile sector, there are more possibilities for China to have realized an Industrial Revolution in the twelfth or thirteenth centuries. But history is magnificent in that there are always latecomers to surpass the old-timers. The textile industry in China, like Chinese empires, stagnated at the highest levels after the Southern Song Dynasty. The sophisticated machines, such as the water frame, were completely forgotten after Yuan dynasty. Before the establishment of the modern factory system, the quality of textiles was largely dependent on the agility and skillful fingers of weavers and spinners. Hangzhou nevertheless still led silk manufacturing within the Empire and the total volume of textile manufacturing was still large, but the efficiency of textile production in this city lagged far behind Manchester in the Industrial Revolution.

In the beginning of the nineteenth century, Manchester had already become the focal point of the factory system in the British Isles. In 1815, Manchester's cotton factories

¹ Kidd 2008: 6

employed approximately 11,500 men, women and children. By the time of the 1841 census, there were 19,561 working in all branches of cotton manufacture in Manchester.¹ The organized textile production within the factory system and equipped by steam machines pushed Manchester forward as one of the significant industrial cities in the world. Then, divergence occurred. Manchester, a small town in the 13th century, helped Britain to solidify its industrial supremacy over the rest of the world, whereas the miracle of Hangzhou turned into a legend in history books.

Both Manchester and Hangzhou have been recognized for textile manufacturing. The fate of these two cities can be seen as epitome of fate with respect to the textile industry. In the following section, the textile industry in both cases will be discussed in order to answer one question: Why was it Manchester, and not Hangzhou, that ultimately stepped into the Industrial Revolution?

2. Theoretical Framework and Research Questions

2.1 Brief Introduction to Theories of Industrialization

To start the discussion, “industrialization” is a term that could not be neglected. This term is often utilized in a variety of academic discussions. It is a broad conception that refers to the transition of a human being’s society and mode of production. It is also quite an ambiguous concept, since it is hard to find a single “industrialization” model that could be applicable to all societies and countries. Despite this fact, within the field of economic historical research, historians have reached consensus on some basic questions. One is the division of industrialization phases in early modern western societies. According to Wong (1997), there were three periods of European industrial activities beginning in the early modern period:

(1) late fifteenth to early sixteenth centuries: urban craft production; (2) mid-sixteenth to mid-eighteenth centuries: rural cottage industry; (3) late eighteenth century to late

¹ Kidd 2008: 17

nineteenth centuries: urban factory mechanization. The shift from urban production controlled by crafts guilds to rural cottage industry is generally viewed as the liberation of production from the restriction imposed to protect producer interests; this becomes one sign of the breakdown of “feudal” control. The subsequent shift of industry back into the cities is usually seen as the triumph of the Industrial Revolution, which heralds the ascendancy of the bourgeoisie¹.

In the second phase, European countries emerged as the global power and built their industrial supremacy for more than two centuries.

Classic theories of industrialization are abstracted from European experiences. According to Walton (1987), sociological approaches to industrialization are framed by two major theories: social differentiation, based on classical liberalism and Durkheimian sociology, and uneven development, derived from the critical work of Marx and Weber.² The former one perceives industrialization as a process of the division of labor. The latter is more or less abstracted from the German experience. Marx focused on the process of transition to large-scale industrial production, which he characterized by three major tendencies: Concentration, namely the process by which capitalist enterprises became large as a result of the growth based on economies of scale³; Proletarianization, namely the steady decline of independent production and self-employment and a correlative increase in the number of wage laborers or workers dependent on the sale of their labor to the capitalist⁴; and also crisis. Weber, who was famous for his studies of the modern state, expands the notion through the exportation of private holders of the power: “the whole process is a complete parallel to the development of the capitalist enterprises through the gradual exploitation of the independent producer”⁵. These classical theories of industrialization focus on its results. Other theories tried to find out why the Industrial Revolution started in the West but not other places. These kinds of inquiries gave rise to the theories of European exceptionalism. Weberian scholars concentrated on

¹ Wong 1997: 33

² Walton 1987: 89

³ Walton 1987: 94

⁴ Walton 1987: 94

⁵ Walton 1987: 95

formulating argumentations based on cultural and spiritual reasons. Some economic historians tried to discover institutional merits of West European countries, such as New Institutional Economics, which will be mentioned later. Some of them also tried to found out iron and coal's significance to industrialization, such as J. U. Nef. In current economic studies, the explanation of the Industrial Revolution is still a hot topic. For example, Robert C. Allen studies British wages in the Industrial Revolution. In his book, *The British Industrial Revolution in Global Perspective*, he argues that in Britain, wages were high and capital and energy cheap in comparison to other countries in Europe and Asia. Under such conditions, only in Britain were the invention and application of new machines and technologies profitable. Moreover, the high wages also made schooling and apprenticeships, which also fostered the Industrial Revolution, affordable in Britain. This theory is not as Eurocentric as classic arguments. Thus, during these decades, it was always utilized by historians who want to reinterpret history from a global perspective. Another example is Joel Mokyr, who concentrates on the role of knowledge in the Industrial Revolution. He argues that the Enlightenment Movement integrated "knowledge" into social development and made a free market of knowledge possible in Europe. In his work *The Gifts of Athena: Historical Origins of the Knowledge Economy*, he introduces the notion of "useful knowledge". After the Enlightenment Movement, notions and ideas could be discussed publicly and freely, and "useful knowledge" could be preserved. He also shows that through the Enlightenment Movement, access to these ideas in society at large also increased. In such an environment, sustainable development of industrialization could be ensured. In his most recent work, *The Enlightened Economy: An Economic History of Britain 1700-1850*, this theory gets further enhanced. In addition, the Cambridge historical team updated its Cambridge Economic History of Modern Britain in 2004. Volume I collected the most up-to-date research on British society over the period 1700-1860 when Britain led the world in the process of industrialization.

The aforementioned theories about industrialization concentrate on society during or

after the Industrial Revolution. In the last century, economic historians began studying industrial activities before the Industrialization Revolution. As early as the 1920s, Paul Mantoux published his masterpiece *The Industrial Revolution in the Eighteenth Century: An outline of the beginning of the modern factory system in England*, in which he used three chapters to describe the old type of industry and its evolution, as well as the commercial expansion before the factory industry period. After WWII, research on European industrial activities threw light on industrialization even before the eighteenth century, with one of the most significant results being the development of the notion of proto-industrialization, which was fully explained in Franklin Mendels's doctoral thesis. Actually, Wong's theoretical division was based on Mendels's research. Mendels described how proto-industrialization, which lasted from the mid-sixteenth century to the mid-eighteenth century, was the first phase of the industrialization process. Proto-industrialization was marked by the rapid growth of not only traditionally organized but also market-oriented, principally rural industry¹. Although his theory has faced tremendous challenges and some aspects of this theory were proved to be questionable, the proto-industrialization theory not only inspired further research on industrialization in pre-industrial Europe, but also triggered research on the similar industrialization processes in the old civilizations like India and China.

2.2 Chinese Industrialization Studies in the West.

For a long time, research of Chinese industrialization in the West was quite generalized. Scholars in the West mainly had broad ideas about China's technological achievement in ancient times, but seldom explored in detail. The discussion about Chinese endogenous industrialization began with Joseph Needham. Needham was famous for his work systematic research on ancient Chinese science and technology. Regarding China's early achievements in science and technology but its backwardness after the 18th century, Joseph Needham raises two questions: first, why had China initially been so far in advance of other civilizations; and second, why is China now

¹ Mendels 1972: 241

not ahead of the rest of the world?¹ Needham's puzzles triggered more discussion about Chinese civilization and industrialization from a macro-perspective. One of the most significant results is Mark Elvin's "high-level equilibrium trap" theory. This theory was first presented in Elvin's *The Pattern of the Chinese Past* and is often quoted by economic historians who specialized in Chinese economic history. In his most recent book, *Another History: Essays on China from a European Perspective*, the theory of high-level equilibrium is mentioned again. The basic idea posits that because of the growing pressure of the population on arable land, the surplus product available for generating demand above the level of subsistence was progressively reduced.² Finally, equilibrium was established in China between the fourteenth and eighteenth century. Although new farming technologies were applied, an increasing population ensured the existence of this equilibrium. The result of this equilibrium was that for long time, Chinese economy was a combination of low farm productivity per capita and tremendously high productivity per acre.

Another very important theory used in Chinese economic historical research is "involution", which was coined by Chifford Geertz in his early work *Agricultural Involution: The Process of Ecological Change in Indonesia*. This notion about the ecological constraints in Indonesia inspired economic historians to specialize in the Chinese economy. In his work *The Peasant Family and Rural Development in the Yangzi Delta, 1350-1988*, Philip C. Huang utilized this notion to describe the rural development in the Yangzi Delta. Huang (1990) distinguished three distinguished patterns of agrarian growth: "first, simple intensification, in which output or output value expand at the same rate as labor input; second, involution, in which the total output expand, but at the cost of diminished marginal returns per work day; and third, development, in which output expands faster than labor input, to result in increase marginal output per workday."³ Huang (1990) claims that the "post-revolutionary [meaning Mao's communist revolution] pattern was in fact a telescoped version of

¹ Needham 1986: 6

² Elvin 2007:57

³ Huang 1990: 11

same pattern six century preceding the Revolution, during which agricultural output expanded enough to keep pace with dramatic population growth and chiefly by intensification, and involution. Productivity or income per Labor Day either stagnated, as in intensification, or shrank, as in involution.”¹ Huang’s theory soon became a very powerful one in Chinese economic studies and in the following years, new theories were made to explain why intensification and involution in the agricultural sector influenced the industrialization process. In this context, the California school emerged.

The California school is famous for its discussion of “the Great Divergence.” The Great Divergence is a term invented by Kenneth Pomeranz in his work *The Great Divergence: China, Europe and the Making of the World Economy*. Pomeranz believes that before the 18th century, there was no endogenous advantage in Europe; on the contrary, both the East and West were experiencing the same level of development. The breaking point came after the developments over the 18th to 19th century when the Industrial Revolution took place in Western Europe, whereas China sank into the “high level equilibrium trap.” This breakpoint then was named by Pomeranz as the “Great Divergence.” The theories of different California school scholars are differentiated. However, all of their theories share the common presumption that before the 18th century, China was wealthier and more “Smithian” than older generations of scholars thought. Generally, there are three such ways to interpret the “Great Divergence” within the California School. The first and, I think, the most radical one is represented by Andre Gunder Frank, who argues that the world system was not as Wallerstein described in his monumental work *The Modern World System*, but rather that a Sino-dominated world system already existed before 1450. The second style could be represented by Kenneth Pomeranz, who attributes the occurrence of the Great Divergence to productivity, ecology and demography. Scholars with similar ideas deny that Chinese economic development in the pre-modern period was a non-Smithian development. In the meanwhile, they

¹ Huang 1990: 12

discovered that in market aspects, the Chinese economy became even more developed than West Europe. Hence, they argue that the Great Divergence should be perceived as the result of other non-institutional factors. The third style could be regarded as complementary to the second one, since the research was more concentrated on institutional factors. The most significant scholar in this area is R. Bin Wong, who was famous for his research on the role of the state and taxation system in the process of Great Divergence.

Generally speaking, the studies of Chinese industrialization in the West are strong in the development of invention of theories. To some degree, they even challenge the classic economic laws which were abstracted from Western experiences. Still, and very obviously, Western scholars' research also face the problems of access to data and other kinds of textual research, mainly because of linguistic problems. Moreover, the majority of their research focuses on the Ming Dynasty, Qing Dynasty and modern China. As to the Song dynasty, some of the scholars mention it in their works, but very vaguely.

2.3 Chinese Industrialization Studies in China

Compared to Western scholars, Chinese scholars have linguistic advantages to study Chinese industrialization. Hence, their research on the Chinese industrialization process was not limited to the Ming, Qing Dynasty and Modern China. Even while Eurocentric perspectives were dominating Western scholarship, Chinese scholars had already started studies on the industrialization process in the Song Dynasty. In today's Song research, Deng Guangming(邓广铭) is the scholar who cannot be neglected, since current Song experts in China are largely influenced by Deng's academic achievement. Deng's works about the two Song Dynasties are abundant and touch considerable aspects of this Dynasty, including important figures, militaries, literature, politics, economy, etc. In the aspects of industrialization of the Song Dynasty, the focal point of Deng's works was the description of the handcraft industry, production relations, and urbanization that accompanied industrialization. After Deng, the study

of industrialization got more specialized in China. Qi Xia (漆侠), one of Deng's students, is famous for his works on the Song and other contemporaneous states', such as Liao, Xia and Jin's, economic history. However, on the other hand, the theories utilized in this research are largely influenced by western scholarship, especially in the adoption of Marxist theories. Moreover, for long time, the theories of the "sprout of capitalism in China" dominated the economic historical research in post-revolutionary China. The scholars with this perspective claim that Western-like capitalism was already shaped in the late Ming Dynasty and, without the invasion of West capitalism and imperialism, Chinese endogenous capitalism would have developed into modern capitalism. To prove it, the scholars always exemplified the textile industrialization in late Ming Dynasty. The most significant scholars in this aspect are Xu Dixin(许涤新) and Wu Chengming(吴承明). From 1962 to 1993, they managed to write a complete history of Chinese capitalist history. The final result is *The History of Chinese Capitalist Development (zhongguo zibenzhuyi fazhan shi, 中国资本主义发展史)*. In this series of books, they systematically described the development trace of a "sprout of capitalism in China" and also capitalism in modern times. After the 1970s, the notion of "proto-industrialization" was introduced into China and Chinese scholars soon adopted it as a suitable word to describe the Chinese industrialization process at the cottage level before the establishment of the modern factory system. The discussion of proto-industrialization in China also triggered Chinese scholars to ponder if it could lead causally to endogenous capitalism in terms of the absence of foreign invasion, since the research of proto-industrialization in Europe indicates that proto-industrialization did not causally led to mechanized industrialization.

Chinese scholars' research of proto-industrialization began with the studies of the Yangtze Delta region in the Qing Dynasty onwards. Some scholars formed their own ideas about Chinese proto-industrialization theories that were different from traditional Marxist ones. Li Bozhong (李伯重) is the most representative Chinese economic historian after the Mao era. He is also regarded as a member of the

“California School” since his non-Eurocentric perspective was similar to the California School scholars. He claims that although China did well from a market and division of labor perspective in pre-modern times, its pattern of growth was totally different from the British case. Li claims that Chinese economic growth in that period was more Smithian, meaning that the Chinese economy was growing via the division of labor and specialization of regions. Because of Smithian dynamics, the market was inevitably developed. By contrast, the British economic increase was closer to “Kunznetsian Growth” in that its growth dynamics after the Industrial Revolution were mainly generated from technological ruptures. With this idea, Li discovered some historical facts that are easily neglected. His most important discovery was the “ultra-light structure” of the Chinese proto-industrialization economy in the Yangtze Delta. “Ultra-light structure” is the term invented to describe the industrial structure that heavily relies on the booming of light industry. Li argues that compared to the British case, proto-industrialization in the Yangtze Delta suffered from this structure and could not develop an iron and coal industry, which he regards as a determinant in Britain’s transformation from Smithian growth to the Kunznetsian Growth. Ge Jinfang (葛金芳), one of the major Song experts in China, is famous for his studies on the Song handcraft industry. In the conclusion part of his *History of South Song Handcraft Industry* (*nansong shougongye shi* 南宋手工业史), he indicates that proto-industrialization in the Southern Song Dynasty was also developing an “ultra-light structure”. Ge also has the opinion that the incapability of proto-industrialization in the Southern Song Dynasty to upgrade from “Smithian” to “Kutznetian” growth was because of this uneven economic structure. Obviously, Li and Ge’s theories aim at challenging the traditional Eurocentric methodologies in Chinese economic history. Some other significant Chinese historians outline similar perspectives. Bao Weimin(包伟民), who is famous for his works on the financial and urban history of the Song Dynasty, always implores scholars to study Chinese things in a Chinese context. In the case of industrialization, he believes that even in the time when Chinese industrialization was exposed to Western ideas, Chinese industrialization did not follow the European model, namely that industrialization

soon transferred to urban regions when it got mechanized, whereas industrialization in the rural areas played a very important role. He believes that the differences were generated from the peculiar demographic structure and way of business in China.

Moreover, some Chinese scholars insist that cultural and institutional disadvantages render the proto-industrialization process stagnated. For example, Justin Yifu Lin (1992) points out the divergence of Chinese and British industrialization that was generated from different ways of technological invention. His hypothesis is that China was an early leader in all things technical because of the large population, which could generate a large number of inventions based on practical experiences. China fell behind the West in modern times because China did not make the shift from the experience-based process of invention to the experiment-cum-science-based invention, while Europe did so through the Scientific Revolution in the sixteenth century.¹

2.4 State and Industrialization

There are plenty variables that influence the industrialization process. In almost every successful case of industrialization, the state's role could not be neglected. The economic historian already tends to compare the different patterns of industrialization between China and European countries in the context of the state. However, research on the states and endogenous proto-industrialization are still limited. According to Wong (1997),

*the Chinese state aimed for and to some degree achieved its goal of static efficiency, that is, spreading the best techniques available across a vast area. This goal made sense within a world of limited possibilities. European, in contrast, sought competition and growth. Though they didn't anticipate the possibilities that came with the Industrial Revolution, their attitudes helped them to develop systems to exploit those possibilities more swiftly and effectively than could happened in China.*²

¹ Lin (1992): 11

² Wong 1997: 280

Wong's conclusion was drawn on the basis of his studies on the different path of state formation in Europe and China. However, his analysis stops there. As to how the "static efficiency" was shaped, the answer is not mentioned in his works. But Wong's research at least indicates a fact: different types of state offer industry different incentives.

But research on Western economic history has already deeply explored this topic. The emergence of the field of institutional economics is the best example. Initially, institutional economics did not formulate a theoretical system. Early institutional economists had various research orientations, though all of their research emphasized the role of non-market factors in economic activities, such as law, history, society, and ethics. After WWII, differentiation took place within this school and it developed into the New Institutional Economic School. Over 40 years of development, New Institutional Economics has already constructed its own theoretical framework. Douglass C. North is the representative figure of this theoretical innovation. North successfully introduced New Institutional Economic approaches into historical research on Europe and America. Based on European and American experiences, he concludes that the role of the state promotes economic change. From his perspective, the state offers two basic services: one is the ability to define property rights and the other is to reduce transaction costs within such a property right structure so that social products get maximized. The first service triggers monopolies, which are against the basic aim of second service. The success of the British Industrial Revolution is because monopoly was controlled and private property rights were protected. Under such conditions, the profits and rights of private enterprises were protected from state intervention. Without the intervention of the state, organizational change at the enterprise level could occur more easily at the end of proto-industrialization. For the Industrial Revolution, organizational changes in enterprises occurred prior to technological change. In this sense, the British state, which administered the institutions to protect property rights, was a crucial factor driving Industrial Revolution.

New Institutional Economics became quite popular in Chinese academies and policy-making from the 1980s. Recent developments over the past thirty years' have shown the benefits of the institutional change after reforms in 1978. But most research focuses on the macro-level, seldom touching the details of particular sectors. This paper will take the textile industries in the Southern Song Dynasty and pre-Industrial Revolution Britain (England), an industry that profoundly influenced the destinies of Hangzhou and Manchester respectively, as the objectives of comparison, discussing how two different types of state affected the textile industries in each case.

3. Textile Industry and State: pre-industrial Britain (England)

Although the Industrial Revolution in Britain is symbolized by the mechanization of the cotton textile sector, the traditional textile industry in Britain is for wool. Wool textile even existed in the prehistoric Britain isles. But before the rise of proto-industrialization, Britain was on the periphery of the European trade system and largely lived on the export of wool, rather than wool textile. In feudalist England, the wool tax was a crucial source of traditional feudal revenues. North and Thomas (1973) pointed out that the state's revenue was made up chiefly of wool tax. This custom alone yielded £ 30,000 a year by the later fifteenth century¹. At the same time, the handcraft industry on the European continent was booming. Wool textile production on the continent, especially in Flanders, was threatening the weak wool textile manufacturing industry in the British Isles. At the beginning, the wool industry in the British Isles, with its backward technology, was not compatible with that on the European continent. Only until to the end of proto-industrialization did Britain become the major wool textile exporter in Europe. From a raw-material exporter to a principal woollen-manufacture exporter, proto-industrialization was the key to this great change of Britain (England). From the mid-sixteenth to the mid-eighteenth century, the wool textile industry dominated the proto-industrialization process in the

¹ North and Thomas 1973: 83

British Isles. Before cotton textile production emerged as a major textile industrial activity, wool textile also dominated the export market in Britain. Total yearly production of wool textile was probably worth about £ 8-9 million, while exports averaged £ 4-5 million a year over the decade, so that some 50 to 60 percent of output was exported. This represented 52 percent of the official value of domestic exports, or 35 percent if re-exports are added.¹ Considering the importance of the wool textile industry for Britain, my study on the British textile industry will therefore begin with the wool textile industry and focus on the shift from the wool textile industry to cotton textile industry.

3.1 Wool textile industry and the beginning of British (English) proto-industrialization

The history of industrial activities relating to wool textile in Britain is longer than the proto-industrial revolution. In the Middle Ages, the production of wool textile in England was already underway, mainly for self-sufficiency but it was partly commercialized. At the end of the seventh century, England was making woollen cloth as an ordinary commodity for local communities. By the second half of the eighth century, there is clear evidence that English wool was exported to the Continent.² As early as the beginning of proto-industrialization, the wool textile industry was a leading handcraft industry in the British rural area. From the mid-sixteenth to the mid-eighteenth century, the location of wool textile production changed. At the beginning of proto-industrialization England, the principal rural textile-manufacturing regions were the West Country, East Anglia, West Yorkshire and the Kent Wald. By the eve of the Industrial Revolution, the four main wool textile areas were East Anglia, the West country, the South-West and the West Riding of Yorkshire; there were also some lesser woollen areas, viz. the Shropshire-Welsh border zone, the Westmorland industry centered around Kendal, the southern area embracing the Kentish Weald and parts of Surrey, Berkshire, and Hampshire, as well as a scattered central area covering

¹ Seward 1972:34

² Kerridge 1972: 20

manufacturing in and around such towns as Coventry, Northampton and Lincoln.¹ It is clear that the major wool textile regions were in the pastoral regions, or more precisely, in the so-called wood-pasture regions. The British historian Joan Thirsk was famous for her distinctive contribution to British agrarian history, having performed deep research on the early industries in the English countryside. Her representative work in this topic is her *Industries in the Countryside*, whose main discovery is that the English industry in the countryside was formed in the pastoral areas. This discovery was based on her comprehensive studies on the early industries in typical proto-industrialized areas. In the case of the West England, she finds that the early cloth-making industry was in the dairy industry areas. This situation did not change until the agricultural revolution. In the east part of England, Thirsk found a similar phenomenon. The availability of a local supply of wool was the obvious reason for the booming of the wool textile industry in the pastoral area. However, the availability of material is only a *sin qua non* to the prosperity of industry. Historians have done comprehensive research on the relationship between British proto-industrialization and the country's pastoral area. Some theories emphasize the different seasonality of farming and husbandry. Compared to the former, the latter is less influenced by the change of the seasons and thus people involved in it would have much more free time to devote to wool textile production. Some historians emphasize demographic pressure in the pastoral region while much more copious and significant research focuses on social reasons. The current research on British (English) proto-industrialization indicates that the pre-existing structure of landholding, inheritance customs and relatively weak seigniorial control in the Wood-pasture were basic reasons for the proto-industrialization of wool textile production in these areas. According to Zell (1994),

wood-pasture regions were often late-settled districts, where both landlords' power and manorial authority had always been weak, compared with earlier settled lowlands. In wood-pasture regions, landholding structures were characterized by large number of freeholders or tenants with copyholds of inheritance and low, fixed

¹ Zell 1994: 228

*rent. In many of these districts farms had always been enclosed, with little or no collective controls over farming. In addition, the typical customs of inheritance in these districts were partible and holdings were often easily alienated or leased out. There was often little or no seigniorial control over settlement and therefore such regions became the destination of poor migrants from lowland regions where household formation was more rigorously controlled by landlords and manorial juries.*¹

There is no single reason that could explain how the proto-industrialization of wool textile production in the wood-pasture region happened, however Zell (1994)'s interpretation at least points out a fact: in the region where wool textile production became proto-industrialized, federal control was not as strong as in other regions.

Here another question arises: what does "federal control" exactly means? Actually, it was a tradition that was adopted from the Middle Ages. As early as in the Middle Ages wool trade was taken as the main source of English feudal revenue. The Crown monopolized the wool trade through granting monopoly power to specialized guilds in the urban areas. Prior to the proto-industrialization era, the industrial activities mainly took place in cities, although the cities at that time were primarily geared toward mercantilism rather than for production. According to North and Thomas (1993), the early specialization that generated from larger markets eventually developed into the occupational guilds. "These medieval guilds purchased from the existing coercive power (the Crown, a major lord or the town burgesses) the exclusive right to practice a certain trade within a given region."² Buying the legal rights from the Crown and major lords, the member of these guilds stood together to loan the working capital, set the standards of quality and sometimes restrict the quantity of outputs. This phenomenon could be seen throughout the whole of Western Europe during the high Middle Ages and continued into the early modern era. The degree of the specialization of guilds even increased with the division of labor in the urban industries.

¹ Zell 1994: 3

² Noirth and Thomas 1973: 57

The guild system exerted both negative and positive effect on England's infant textile industry. In fact, indigenous textile production in the British Isles was backwards prior to proto-industrialization. However, guilds helped in the attraction of skillful Flemish immigrants, who came from a relatively advanced textile production region; the technologies they brought to the British Isles strongly stimulated the thriving of the English wool textile industry. Similar phenomenon could also be seen in cotton textile production, which will be mentioned later. Immigration from Flanders was the key factor of the birth of the English cotton textile industry. In short, the positive effects of guilds or monopolists were mainly embodied in the introduction of new textile technologies. However, the domestic guilds were regarded as negative because of their strict regulation. The English guilds of weavers existed in the larger textile towns before 1150¹. Getting support from the coercive powers, they became more concentrated upon producing for local markets. The direct result was to force textile production to retreat from urban areas. Unregulated wood-pasture areas became its destination. In this sense, the spontaneous emergence of the wool textile industry in the countryside was a result of avoiding the influence of the federalist state.

In the less- restricted wood-pasture region, it was easier for the organizational change to take place. Zell points out that this change took place in the framework which, in his words, is the "domestic form" of production organized by men with capital.² Capital was mainly from a special person who was titled as "clothier", whereas men, or laborers, were mainly from rural households. "The clothiers 'put out' their raw materials to independent craftsmen and women who processed them in their own homes, most of the processes of manufacture took place away from the workshops of the clothier, and where carried out by spinners, weavers, fullers and shearmen on their own equipment."³ From this description it is clear that at beginning of proto-industrialization, the clothier had already emerged as the hub of textile

¹ North and Thomas 1973: 58

² Zell 1994: 153

³ Zell 1994: 153-154

production. They owned the capital and, usually, also the tools. The production relied largely on rural households. This kind of framework ensured the development of wool textile manufacturing throughout the whole sixteenth century, until its long, slow decline in the seventeenth century. Zell names this mode of production as domestic form, whereas a more well-known term to describe this kind of system is “domestic system”.

3.2 Further development of wool textile manufacturing, mercantilism and the state

The development of wool textile manufacturing kept its pace in the seventeenth- and early eighteenth-century British Isles. Compare to the continental countries such as France and Flanders, urbanization was not the precondition for proto-industrialization in Britain. For example, as late as the eve of the Industrial Revolution, wool textile production in Yorkshire still remained at the rural household level. According to Hudson (1996), it is estimated that,

it took six people to make a piece of broadcloth in the eighteenth century, many west Yorkshire households were of this size, additional adults being taken on as journeymen or apprentice within a house hold where men, women and children worked together as an independent production unit, buying raw wool from staplers and selling unfinished cloths at weekly cloth markets in Leeds and elsewhere. In the Yorkshire, worsted sector whole families were sometimes involved in textile manufacture but individuals were often employed for separate processes: females mainly on spinning and men, predominantly, on weaving or combing) by different employers.¹

We see that in the middle phase of proto-industrialization, the division of labor within the domestic system became more sophisticated. The increasing of division of labor stimulated the output of wool textile manufactures. Not only did the volume of production increase, but more labor- and capital-intensive woolen textiles were also on the rise, such as colored, worsteds half-worsteds and new draperies. Worsteds were woolen textiles that were made by combing wool only, such as beds, buffins,

¹ Hudson 1996: 55-56

camlets, durants, etc; half-worsted were new stuffs or draperies in the wider sense, made of combed warp and carded weft, such as baize, druggets, Exeter long ells, perpetuanas, etc; new draperies, in the strict sense, were those slight stuffs made by combing wool and silk and/ or mohair and/ or vegetable cotton, such as alapeens, antherines, bombazines, silk druggets, etc.¹

In turn, more labor- and capital-intensive wool textile manufacturing demanded an enhanced role of the clothier, who organized labor and owned the capital that circulated in the domestic system of textile production. Big clothiers were emerging in such a context. Fowler did a case study on the wool industry in Yorkshire and pointed out that the model of the “big clothier” reflected the later development of worsted production in Yorkshire and the need to mobilise large capital in order to compete with the traditional producers of East Anglia². Based on Heaton and Hudson’s researches, he also pointed out that,

*the clothier in worsted employed substantial numbers of wage workers compared with his counterpart in woollen textiles. The clothier purchased the raw material which was put out to workers in their homes. The clothier retained ownership of the raw material as well as the finished product and he then sold on the goods to the merchant. According to Heaton, worsted was ‘much more capitalistic’ than woollen textiles and the clothier therefore enjoyed higher levels of profit than his counterpart in woollen textiles.*³

Although the scene of British textile production at that time was still quite different from that of the typical factory production in the Industrial Revolution, the domestic system organized by the big clothiers ensured the steady development of wool textile manufacturing. The rising productivity of a big wool textile industry changed the structure of the British (English) economy. During the proto-industrialization era, domestic demand was not the main dynamic for textile production, as half of exports were supported by the wool textiles.

¹ Hudson 1996: 28-29

² Fowler 2004: 2

³ Fowler 2004: 2

Besides the evolution the mode and relationships of production, the wool industry in seventeenth century Britain (England) also improved on the account of more advanced textile technologies. Especially, the emerging new textile industry largely stimulated technical innovation in Stuart and early Hannover Britain (England). What needs to be noted is that in the whole of the seventeenth century, the invention of machines for wool textile manufacturing did not take place; it was not until the invention of the flying shuttle in 1733 that a machine specifically for the manufacturing of wool was invented. Throughout proto-industrialization, technological improvements in wool textile production were due to the deepening division of labor and workers' improved skills. In that era, the workers in the wool textile industry were specialized in such processes as carding, roving, combing, spinning, weaving, burling, fulling and the finishing process. Of these, spinning and weaving were together the core process of production. The spinning was carried out with a hand wheel, which gave motion to the spindle by means of revolving wheel.¹ The quality of the weft that was produced with this simple machine was largely dependent on the finger skills of its spinners. The weaving process was carried out in the loom, which was framed like an oblong box, with four upright posts being joined together by two long and two short posts². The first task of the weaver was to arrange the warp in order on the loom. This was termed as "looming", and unless the warp was "put square" (fixed properly) on the loom, meaning every thread was at an equal tension, the texture of the cloth may have been uneven.³ When the warp was prepared, the waver seated himself at the loom and, with his foot, depressed the right treadle.⁴ The weaving operations that followed were opening alternate sheds in the warp by means of the treadles; casting the shuttle through the sheds when opened; and driving home the weft threads with the batten.⁵ Weaving with this kind of simple machine required high personal skills on the part of the weaver.

¹ Lipson 1965: 134

² Lipson 1965: 136

³ Lipson 1965: 136

⁴ Lipson 1965: 137

⁵ Lipson 1965: 138

For countries in the northwest corner of continental Europe, however, the above-mentioned technologies were not uncommon. People who performed as clothiers also could be seen in France, Flanders, etc. No matter the technology or organization of production, Britain (England) did not have obvious endogenous advantages. The legend of wool textile in pre-industrial Britain would have to be made by other means.

As mentioned above, the bulk wool textile made in Britain was exported to the European continent, since the domestic British market could not consume the increasing outputs of wool textile manufacture. Thus, the expansion of foreign markets constituted a vital reason for the progress of wool textile manufacturing in proto-industrialization. At the same time, the expansion of Britain's foreign markets was accompanied by the shift of the hub of the world capitalist system from the Netherlands to Britain. During this process, the forming nation-state of the British Isles was by no means a negligible factor in the area's economic development. It is this very phenomenon that the rise of the nation-state in Western Europe was accompanied by the rise of mercantilism, and Britain was no exception. Actually, even before the Britain was unified, mercantilism had already come into the speeches of the Crown and the big lords. In Tudor Britain, mercantilism was embodied in the state's intervention in the areas of credits, trade protection and bullions. Through the Glorious Revolution and the enhancement of the new capitalist class's power in the House of Commons in the mid-seventeenth century, British mercantilism experienced a change which lifted the position of trade in the national economy. Later British mercantilism was represented by Thomas Mun's epoch-making work, *England's Treasure by Foreign Trade*. In this monumental work, Mun tried to provide the state with such kinds of ideas: first, ensuring the state's trade surplus via developing domestic industry on the one hand and increasing shipping business to expand foreign trade on the other, especially with the colonies; the second was economic expansion through a monopoly of trade in the area and with the colonies. The latter strategies

were obviously to counter against the Netherland's supremacy in European trade and the long distance trade with the colonies. In this pamphlet, Mum repeatedly mentioned the dilemma British industries were facing with the Netherland's supremacy in the distant trade, including the ascendant domestic wool textile industry. Mum's mercantilism provoked the state's enthusiasm to compete with United Provinces on the seas. The result was the state's direct intervention to protect the domestic market. Actually, in the expansion of pre-industrial British (English) foreign markets, Britain (England) eventually developed into a fiscal-military state. Proto-industrialization and the first Industrial Revolution mainly took place in such a framework. Through this method of protectionism, the English state realized the first "import-substitution" in Europe, which largely enhanced the power of its domestic industries in the world capitalist system. Rome was not built in a day; the expansion of foreign markets and protection of the domestic market was realized eventually. Before the rise of laissez fair, the British (English) state spent around a half century constructing its trade supremacy in a mercantilist structure.

The first important state action was the enactment of the Navigation Acts. The Navigation Acts came into force in October 1651, and were further modified in 1663, 1673, and 1696. These mercantilist acts finally expired in 1854, when the British state's strategy shifted to the improvement of free trade worldwide. The main aim of these acts was to ensure that colonial development was favorable to England, and stop direct colonial trade with the Netherlands, France and other European countries. What needs to be noted is that Scotland and Ireland were both initially included into this series of laws; however, after 1707, Ireland was excluded from the Navigation Acts. According to the Navigation Acts of 1660, ships from continental Europe, as few other international carriers then existed, were excluded, "(1) from the import and export trade of the English colonial possessions in Asia, Africa, and America; (2) from importing into England the goods of the foreign parts of those continents; (3) from the English coastwise trade; and (4) certain restrictions were thrown about the

importation into England of Europe.”¹ The enactment of the Navigation Acts tremendously challenged Dutch interests on the seas. In the case of textiles, the export of textiles from the Netherlands to the British Isles was shrinking sharply. This certainly provoked the United Provinces’ antagonism. Thus, the famous three Anglo-Dutch Wars took place in the years of 1652, 1664 and 1672, respectively. England’s success broke the United Province’s predominance on the seas and realized quasi-monopoly in the ocean trade. This change increased the transition cost of importing textiles from the European continent to the British Isles. In such a condition, the Dutch products’ advantage of price was mitigated by the British supremacy on the ocean. On the other hand, the transition costs of domestic products which were exported to the continent were minified. This rendered the British wool textile more competitive in foreign markets in the aspect of price. Although the technologies distance could not be shortened overnight, the mitigation of price distance did enlarge the breathing room of the British wool textile industry before the Industrial Revolution. In fact, not only wool textiles, but also other textiles such as linen and cotton were also beneficiaries of Britain’s success; these textiles, though, were not significant for the British (English) export market during that time.

The British state’s mercantilist policies that reduced the domestic industries’ transition cost are not only embodied in the state’s protectionism against its foreign rivals. Even on its overseas colonies the state set regulations to meet domestic interests. A perfect example is the ban on the import of calicoes by the British East India Company. This movement in parliament was initiated by the woolen and silk interests in the British Isles. The direct reason for this protectionist ban was the sharply increasing volume of calicoes imported from Asia at the second half of 17th century. Actually, cotton cloth had been sold in the British Isles even before the establishment of the East India Company in 1600. At the beginning, the quantity of cotton textile that was imported by the East India Company remained small and could not challenge the domestic wool textile industry. The situation changed, though, when the East India Company

¹ McGovney 1994: 725

set deep roots in India. According to O'Brien (1991), by the 1660s their (calicoes imported by the East India Company) total value exceeded Chinese silks and at the end of the seventeenth century calicoes accounted for about one-quarter of all textiles imported to England.¹ In 1700 this sector's gross output (of woolens, linens, silks, cottons, and mixed textiles) may have amounted to £8.5 million, of which £4.5 million (mainly woolen cloth) was exported.² Although England at that time was a net exporter in general, the interests of the wool textile industry still noticed the encroaching danger from the inflows of Indian calicoes. England's native woolen and silk interests first became politically active against Asian textiles as early as the 1670s, but agitation to prohibit the consumption of imported calicoes and wrought silk only became serious in the mid-1690s.³ From that point on, the British (English) government continually responded to the pressure by taxing and setting quotas for the East India Companies to sell calicoes in Eastern Markets. In the year of 1721, an effective protectionist regulation on Asian textiles imported by the East India Company was passed by parliament. Although it was the British (English) woolen and silk interests that started this parliamentary protection against the British colonial power of trade, historians point out that the cotton industry was the largest beneficiary. This will be mentioned in next part of this paper. However, the struggle of wool textile interests in parliament did increase its domestic market share (with Asian textiles nibbling at its dominance before the ban), albeit the principal market of British (English) wool textile still was overseas.

In such a way, the state's mercantilism exerted a positive effect on both its foreign and domestic markets. At the peak of the sixteenth century's wool textile industry, about 80-90 percent of exports from London were of woolen cloth.⁴

Expansion of the market did facilitate the upgrading of the British (English) textile

¹ O'Brien 1991: 396

² O'Brien 1991: 396

³ O'Brien 1991: 401

⁴ Davis 1994: 143

industry, but this could not causally lead to the Industrial Revolution. The evidence is that market expansion also appeared in Qing China, although Chinese proto-industrialization in the Qing Dynasty did not lead to British-like Industrialization. In this sense, the expansion of the market only constituted a necessary condition for the evolution of British industrialization to Industrial Revolution, rather than a sufficient condition. There were also other dynamics for the upgrade of British industrialization.

Historians name the eighteenth century as the “long eighteenth century” for the abundant and comprehensive changes that occurred during it, which shaped the world and civilization in later centuries. The seventeenth century, which was characterized by proto-industrialization, was not as marvelous as its successor, yet it was the very century with tremendous political changes in the British Isles which laid the cornerstone of the eighteenth century’s legend. In general, with these political changes, the power of the crown was declining. Companying this change, the Crown’s monopoly of the domestic market via guilds was also shrinking. As mentioned previously, proto-industrialization in the wood-pasture area was a result of the guild’s monopoly, which was granted by the Crown and the big lords in the urban areas. The absolute control over tax, which was achieved by the Tudor Dynasty, was also the aim of the Stuart Dynasty. Although mercantilism was adopted by the Crown at that time, it was really only taken as an effective way to increase the wealth of the Crown and the big lords, and so the monopolies which were in favor of the Crown were not given up. The breaking point was appearing in the conflict between the government and the Crown. According to North and Thomas, *the Crown, caught up in the expensive rivalry between nations, needed more revenues and parliament proved intractable. The Crown viewed the government as its prerogative, the parliament saw the Crown as circumscribed by the common law*¹. The Crown and parliament essentially competed in issues regarding the monopolies. Initially, the Crown’s power was strong enough to maintain the monopoly. However, in the late Tudor dynasty, the rise of the

¹ North and Thomas 1973: 147

House of Commons, which was dominated by the emerging merchant class and land owners, changed the balance of power between the Crown and parliament. North and Thomas (1973) highlight Sir Edward Coke's contribution to the early parliamentary opposition to the Crown's monopolistic power. Coke and his group advocated the supremacy of common law over the development of commercial law, insisting that special monopolistic privileges associated with the Crown's prerogative should be revoked according to the spirit of common law. The direct result was the enactment of the Statutes of Monopolies in 1624. This law ended the Crown's absolute control over commercial activities. Thus, the barriers that the early proto-industrialized wool textile production suffered were removed through a juridical way. Commercial and trade interests began to dominate the government as the Crown's power declined. This tendency was enhanced through the succeeding political transition throughout the whole seventeenth century. Through the decline of the Crown's monopoly, the guild system in England finally broke down at the beginning of seventeenth century, thereby expanding the space for the possible change in business and industrial organizations. In the case of the wool textile industry, the capital from the urban areas began to flow into the countryside and triggered the emergence of big clothiers. During the seventeenth century, according to Lipson (1965),

the number of persons employed by a clothier naturally varied considerably. Some clothiers employed 150 or even 200 weavers...In addition to the weavers the clothier has in his employment a large number of burlers, carders, spinners, cloth-finishers, and others; thus a wealthy clothier might employ altogether as many as 800 persons and even more. It is evident, that capitalist employer was already the outstanding figure in the woollen industry long before the Industrial Revolution.¹

Based on such a condition, these big clothiers were the first group of people who tended to organize production in a particular location that was equipped by machines and required a relatively large number of laborers. This could be seen as the preparation for the rise of the modern factory system. Early economic historians specialized in the study of proto-industrialization maintain the opinion that

¹ Lipson 1965: 51

proto-industrialization in Britain formed the basis of entrepreneurship in England, and the later factory-owners were exposed to the influence of this great change. For example, at the late stage of British (English) proto-industrialization, some of the clothiers in the West Country and Yorkshire employed men in their own weaving sheds, thus creating a miniature factory.¹ The miniature factory that derived from the domestic system contained advantages that the domestic system did not have. According to Lipson (1965), “the advantages of the system were threefold. It enabled the employer to supervise in person the processes of manufacture; it prevented delay in the return of the work, which was wont to occur when a weaver wove in his own home for different masters; and it rendered more difficult any embezzlement of the raw material.”² Within this miniature framework, the division of labour and the level of specialization of the wool textile region were further deepened. More significantly, the clothiers’ management skills were sharply improved. The betterment of management integrated the processes of wool textile manufacture. This change not only brought the improvement of production efficiency, but also the reduction of transition costs generated from scattered production processes in the domestic system. In turn, these improvements rendered wool textile from the British Isles more competitive in the face of challenge from the European continent and Asia. But what needs to be noted is that this kind of miniature factory system did not widely apply to the whole wool textile industry. The late-comers, such as the cotton and silk industries, were inspired by it and established the first several modern factories in the British Isles.

To sum up, from the early seventeenth century to the early eighteenth century, technology in Britain (England) improved and eventually caught up with the northwest corner of the European continent. The main dynamic of industrial development was the expansion of markets, both domestic and foreign. At the same time, the English state experienced a transformation from medieval to modern nation

¹ Lipson 1965: 51

² Lipson 1965: 51

state. The strengthening of the central government increased protectionism up as the will of a nation. The state provided the wool textile industry the protection to realize import-substitution. Moreover, expansionary military actions largely reduced the transition costs that were generated from Holland's supremacy of the seas. After 1707, the unification of the United Kingdom removed barriers within the British Isles. The internal unification of politics and markets focused the protectionism of the state only against the European continent and the colonies. No matter the revised Navigation Acts or the ban of Asian textiles imported by the East India Company, all of these state actions were aimed at the successful competition of British goods in foreign markets. The expansion of markets provided the manufacturing stimulus and increased the division of labor and specialization of the wool textile production region. The rise of the big clothier could be seen as the result of this tendency. Market expansion and the increasing division of labor were the main dynamics of development during this period. All of this was strongly related to the mercantilism which was prevalent in the British Isles.

Taking political and social factors in pre-industrial Britain into account, however, mercantilism alone could not have ensured that the state would always play a positive role in industrial development. The types of mercantilism characterized by protectionism were not British inventions, as the West European countries in the seventeenth century also developed their own mercantilism. In Spain and France, though, mercantilism did not generate such positive results as in England. In the case of Britain (England), the Crown and parliament both tried to exert direct influence on the central government. At the beginning, the Crown gained the upper hand. With the Crown's influence, the government continued the monopoly that was adopted from the Middle Ages via the guild system and industrial regulations in the urban areas as a main source of income outside of taxes. If the guild system and the Crown's industrial regulation did not decline in the seventeenth century, we could not define the wool textile industry's prosperity in terms of mercantilism, since the booming of wool textile production largely depended on big clothiers whose capital was mainly from

the urban region, where guilds were in control. But the long seventeenth century was long for its considerable social and political changes. The waxing of the House of Commons and the waning of the Crown's power made this medieval tradition end with the Statute of Monopolies. Common law then began to rule industrial regulation, rather than the will of the Crown. Under the rule of common law, the emerging new mercantilists had access to participation in the formulation of state policies. The rising new capitalists then enjoyed the power of speeches in the parliament. In the seventeenth century, wool textile manufacturing was not only a way of life for households in the wood-pasture region; it had also become an honorable business. Thus some of the parliament members were big clothiers, and some big families developed from the big clothiers. According to Lipson (1965),

*in the seventeenth century, a Member of Parliament told the House of Commons that he and his partner maintained above three thousand workman; and in the eighteenth century Daniel Defoe related that he was told at Bradford in Wiltshire "that it was no extraordinary thing to have been originally raised from and built by this truly noble manufacture."*¹

Hence, the British (English) experience was the combination of export-oriented mercantilism and the decline of domestic monopoly. Both of these two state actions offered incentives to the wool textile industry: export-oriented mercantilism offered wool textile production the incentive to fulfill the expanded market, and the decline of domestic monopoly ended the wool textile industry with a relatively free domestic environment to develop at its own will. Both of these state's actions were the result of competition. The former was the result of the competition with other European countries; the latter was the fruit of the competition between the new capitalist class and the declining Crown's power. In other European countries at that same time, none were able to also be successful in both competitions. Hence, they could not largely reduce transition costs both domestically and overseas as Britain (England) did in the sixteenth and early seventeenth century. Though the wool textile industry did not help

¹ Lipson 1965: 51

Britain to achieve its glories as the cotton industry did, since it was the leading industry during that time, the changes the state made under the influence of the wool textile industry did profoundly affect the development track of other textile industries.

3.3 The rise of cotton textile industry and the state

Also because of competition, the supremacy of British (English) wool textile in exports did not last for long. Although the absolute volume of British (English) wool textile readily increased during last decades of the seventeenth century, the peak of wool textile export took place in 1660s. The relative decline of wool textiles could be seen as a result of constant wars, but the rise of other products in foreign markets was also a crucial factor. Since trade of British (English) wool textile was mainly with other European countries, it was facing fierce competition with northwestern European countries. Although protectionist policies largely facilitated the British (English) wool textile trade on the seas, the increasing speed of production readily slowed after the 1690s. But other British products, especially those mainly intended for distant trade with the colonies, began to change the exporting structure once dominated by wool textile. David (1994) points out that, “the influence of transatlantic products may be noted in another development, not very important in the seventeenth century, but pointing the way which trade expansion would take in the first half of the next century This development was the growth of manufactured exports other than woolens.”¹ Although the volume of these miscellaneous manufactures was small, it was increasing quite fast. In the years surrounding the end of the third Anglo-Dutch war, the main market for these miscellaneous manufactures was in Europe. However, until to the beginning of eighteenth century, it was trade with the colonies that became principal. Taking London as an example, this change is quite impressive:

Exports of Miscellaneous Manufactures (London only) (£ 000)²

¹ David 1994: 146

² David 1994: 146

	1663/69	1699-1701
West Africa, America and the East	86	259
Europe, etc.	136	161

In such a condition, the robust expansion of foreign markets gave the cotton-like textiles the first opportunity to break the supremacy of wool textile in Britain.

Before that, though, cotton textile was quite a marginal industry in the British Isles. Cotton textile production was not an indigenous industrial activity there. Compared to other countries on the European continent, the history of cotton textile in Britain is relatively short; the spread of cotton, an indigenous plant in India, was from the Mediterranean region to the northern part of continental Europe. The introduction of cotton into the Netherlands occurred before its introduction in Britain, and cotton textile production characterized proto-industrialization in the Netherlands. From the 14th century, migrants from Flanders brought the cotton textile technologies to England; this historians regard as the beginning of British cotton textile production. Proto-industrialization endued cotton textiles with a good opportunity to set root in Britain (England). At the beginning of the seventeenth century, the cotton textile industry took root in the region of Lancashire where the woolen textile production had already been, initially through the production of fustians, a combination of cotton weft and linen warp.¹ The domestic cotton industry for the whole of the sixteenth century was quite marginal. Even at the eve of the Industrial Revolution, the British cotton textile industry could be comparable with the cotton textile industries in east and northwest European continental countries. According to Mantoux (1961),

during this early period of the cotton industry in England the quality of the product was rather poor, and its quantity insignificant. Almost all the cotton stuffs sold in London and in the chief town came, more or less directly, from India. ... One of the chief products sold to British public, and for which the demand grew ever greater, was cotton material, flowered fabrics, either painted or printed. Fashion took it up, and

¹ Stephan & Bishnupriya 2005: 5

*soon these stuffs were all the rage.*¹

In this wool textile-dominated era, it would be very hard to predict that the Industrial Revolution would take place on the back of such an infant industry.

Technological backwardness is one of the major reasons that led to cotton textiles' marginal position in proto-industrialization. Until the beginning of the eighteenth century, technology was still a major obstacle for the prevalence of domestic cotton textile products. According to the Mantoux (1961),

*the only things the Lancashire spinners, both male and female, lacked were the supple fingers and the extraordinary skill of the Indian workmen. The counts they spun. With implements as a matter of fact scarcely better than those used in India, were either too coarse or too weak. The custom therefore grew up of making materials which, at the beginning, laid the foundations of Manchester's reputation. Printed by hand with engraved plates, they were able, if not to rival those of India, yet to serve as more or less acceptable substitutes, so that public taste could be satisfied, in spite of prohibitive legislation.*²

The technological backwardness of British (English) cotton textile industry remained for a long time and changed only when the fly shuttle was invented by John Kay in 1733. Before that, just as Mantoux describes, the cotton industry survived in the narrow market in Britain (England). Facing the inflow of textiles from Asian colonies, the immature British (English) cotton industry was vulnerable.

In its infancy, British (English) cotton textiles not only suffered from the incapability to compete with Asian textiles, but they were also in the shadow of proto-industrialized wool textile manufactures, which had already had strong political interests in the state and so received strong mercantilist support. During the mercantilist era, the wool textile industry that rose up from the countryside eventually obtained a strong influence in parliament through the big merchants of wool textile.

¹ Mantoux 1961: 199

² Mantoux 1961: 202

The wool interest's panic about the dumping of Asian textiles, which were mainly cotton textiles or silk, into the British domestic market spread to similar products that were produced domestically. In such a condition, the protectionist strategies that were adopted initially to guard against Asian textiles were utilized to meet the hostilities of the new domestic textile industry. With the petitions of wool textile interests, the usage and consumption of painted and printed calico was forbidden within the territory. But compared to the ban on Asian textile, the pressure that the state exerted on domestic cotton textile manufacturing was weaker, since only two types of cotton textiles were on the list of prohibition.

Therefore, the supremacy of wool textile interests constituted a big challenge to the infant cotton industry. However, since the protectionist measures were mainly against Asian textiles, the British (English) cotton industry also enjoyed the protection of the state's mercantilist policies. Moreover, because the prohibition was only limited to paint and printed calico, the market for plain calicoes, which became the leading cotton textiles produced in Britain (England), grew fast. Compared to the wool textile industry, the development of the cotton industry seems more typical of import-substitution. According to O'Brien (1991), for two decades after the turn of the century (seventeenth to eighteenth) the sales of plain calicoes, finished in London, substituted for calicoes printed and dyed in India.¹ The effective barrier against India's cotton industry kept the British cotton industry free from elimination in terms of free competition.

The necessary protection against foreign industry was quite crucial for the survival of the early cotton textile industry, but it did not directly lead to its success years later. Domestic wool textile production received much more protection in the mercantilist period; however, the Industrial Revolution set its first steps in the cotton industry, rather than in the strong wool textile industry. How could this be?

¹ O'Brien 1991: 414

Historians tie it to the machines that were used in the cotton industry. Although until the beginning of eighteenth century the technology that was used in cotton textile manufacturing was still incomparable to that in India, the innovation and utilization of machines in the following decades later quickly changed this contradiction of technological levels and began the legend of the British cotton industry. Actually, cotton is a fiber with more uniform strength and elasticity than flax or wool. Hence, theoretically, it could be easier to spin it mechanically. Compared to the wool textile industry then, the cotton textile industry was more suitable for experimenting with new machines. The first invention was the flying shuttle. Mantoux described the flying shuttle as follows,

the invention of the fly shuttle was demanded by a practical difficulty which manufacturers daily experienced. It was impossible to obtain material of more than a certain width without employing two or more workmen. The width of the material which a single workman could make by throwing the shuttle from one hand to the other was obviously limited by the length of his arms. Kay arranged for the shuttle to be automatically thrown from one side of the loom to the other. For this purpose, he fitted the shuttle with small wheels and set it in a kind of wooden groove, fixed so that it did not interfere with the alternating rise and warp. On either side, in order to give it a to-and-fro motion, he put two wooden hammers hung on horizontal rods. The two hammers were bound together by two strings attached to a single handle, so that with one hand the shuttle could be driven either way. The arrangement worked in the following manner: with a sharp tap the weaver caused first one and then the other hammer to move on its shuttle, which slid along its groove. At the end of each rod, there was a spring to stop the hammer and replace it in position.¹

The invention of the flying shuttle the cotton textile production did not need to depend on the workers' weaving and spinning skills, but on the efficiency of the machine. Although the flying shuttle was driven by manpower, the popularity of it began the mechanization of the cotton textile industry. After the flying shuttle's invention, other epoch-making machines were invented in the following decades. In the same year (1733) the flying shuttle was announced, John Wyatt made the first spinning machine. These both happened in the ending years of proto-industrialization. Moreover, another

¹ Mantoux 1961: 207

two capital inventions in history, namely Hargreaves's spinning jenny (1765) and Arkwright's water frame (1767), were made when time was already in the years of the Industrial Revolution. However, neither of them were motor machines, hence they could be perceived as transitional inventions between proto-industrialization and typical urban factory industrialization in the common sense. These inventions did play a very important role in the history of textiles. What needs to be noted is that these machines in their original form were not sophisticated. But compared to the machines that were used in the wool textile industry in the seventeenth century, these inventions did not require the high personal spinning and weaving skills of workers. Hence, the efficiency of production was higher than those equipped the wool textile production. Take the spinning jenny as an example,

it consisted of a rectangular frame on four legs. At one end was a row of vertical spindles. Across the frame were two parallel wooden rails, lying close together, which were mounted on a sort of carriage and slid backwards and forwards as desired. The cotton, which has been previously carded and roved, passed between the two rails and then was wound on the spindles. With one hand, the spinner worked the carriage backwards and forwards, and with the other he turned the handle which worked the spindles. In this way, the thread was drawn and twisted at the same time.¹

Technological progress was necessary for the development of the cotton industry, yet it could not fully ensure its later success, since the inventions that applied in the cotton textile industry were also equipped for other types of textile manufacturing. For example, the flying shuttle, spinning jenny and water frame were adopted by the wool textile industry several years after their successful application in the cotton industry. In this sense, technological progress could not constitute an absolute advantage for the cotton industry in the transition to the Industrial Revolution.

Let us see the major differences that the wool and cotton textile industries had at the end of proto-industrialization. Generally, as opposed to the British infant wool textile industry in the countryside which, at its initial phase, was developed out of

¹ Mantoux 1961: 217

monopolist state power, the cotton industry was established within the structure of the fiscal-military state. The state's reform and transformation had already taken place prior to when the cotton industry was setting its foot in Lancashire. Through the struggles and concessions between the new mercantile class and the Crown, British (English) institutions of industry were eventually modernized and were more in favor of commercial and industrial interest. In this sense, the infant British (English) cotton industry was enjoying the fruit of the wool textile industry and other commercial interests' efforts in the parliament. At the beginning of the eighteenth century, the state's regulation on the industry further declined. Wool textile production did obtain strong protections from the state and influenced the domestic cotton industry. However, the state's support could not help the wool textile interests to maintain the guild-like monopoly any longer. In such a condition, the cotton industry enjoyed much more freedom than the wool textile industry in its infancy. Without strict industrial regulation, it was easier to experiment with technological and organizational innovations in this sector. Compared to the cotton industry the wool textile industry was well-protected, and so it turned conservative, especially in the aspects of organizational reform. The domestic system still dominated wool textile production and signs seldom indicated that the wool textile industry would attempt to further reduce transition costs via organizational reform. Even in the era of the Industrial Revolution, the domestic system was still dominant in this traditional industrial sector. Bythell (1983) owes the reason to the entrepreneur's mind.

A manufacturer who had grown up with the domestic system as the dominant mode of production in his trade would need strong inducements to abandon it, because under normal circumstances it offered him many advantages. If his employees provided their own tools and workrooms, he himself was spared the need to tie up his own capital in bricks and mortar and in machinery; and in times of periodic trade depression or slack seasonal demand- and most of these industries were subject to one or other of these risks, if not, indeed, to both of them-it was the worker, not his employer, who suffered when plant and equipment were standing idle.¹

¹ Bythell 1983: 22

But as a young industry, the cotton industry did not have such strong limitations. In fact, in an era dominated by wool textiles, the first manufacturers of cotton textiles were the people who were adventurous and dared to risk. The cotton textile industry caught the chance and pioneered in organizational innovation. The most significant result was the emergence of the factory system in the cotton industry.

The typical scene of early factories was that labors from households were organized under the same roof. The emergence of the factory did not only bring a change in working location, it also altered working ethics and the degree of the specialization of labor. Furthermore, manufacturing bodies in the domestic system were mutual-independent households. This scattered production mode always yielded high transaction costs, generated from the change and trade between different manufacturing bodies. The factory system, however, was organized production in a particular place, equipped with machines, and under the supervision of an entrepreneur largely mitigated the barriers between different manufacturing and trading processes. Hence, compared to domestic system, this new mode of production yielded much lower transaction costs. From the domestic system to the factory system, the road was not paved overnight. The entire phase-out of the domestic system was as late as the nineteenth century. In this long process, the inventor of the water frame, Arkwright was a noteworthy figure. Before him, some attempts to establish silk factory was made, however these attempts finally failed in the 1730s. Arkwright was luckier than his precursors. The first factory he set up was located at Cromford in 1771, the year he joined forces with Need and Strutt. This factory benefited from his invention of the water frame. *The new machine produces a much stronger thread than the most skilled spinner could have made with a spinning wheel. Instead, therefore, of weaving materials which were partly linen and only partly cotton, it became possible to weave pure cotton goods, which were as perfect in every respect as their Indian models.*¹ Arkwright got his patent for the water frame in 1769. This kind of machine ensured his technological advantage in facing the competition of the wool textile

¹ Mantoux 1961: 224

industries that were organized in the domestic system. To assist in its effective functioning, he established the factory near a powerful source of water. *Cromford lies on the Derwent, at a point where the river runs swift and powerful through a narrow gorge quite close to the picturesque hills of its origin. A little way above, the hot waters of Matlock flow into it and prevent it from ever freezing in winter. It was therefore a suitable place for building a mill*”¹ The factory he established grew very quickly. Eight years after its establishment, it already contained several thousand spindles and employed three hundred workmen.² From proto-industrialization to the Industrial Revolution, Arkwright’s factory was perceived as a symbol of transition. Mantoux divided the early cotton industry development into two stages. The first is the period immediately following Hargreaves’s invention. There were still very few factories, for capitalistic organization had not yet taken on its soon-to-be conspicuous shape. At least in appearance, that was the golden age of domestic industry.³ The second period began with that memorable trial which ended in the cancelling of Arkwright’s patent (This occurred in 1785). From that moment, factories became standard throughout the textile industry.⁴

In this great transition the factory system, a new type of production organization, suffered the hostility from those manufacturers who survived on the domestic system. The Act of 1735, which allowed the manufacture of mixed materials, had confirmed the prohibition of printed cotton goods⁵, and was taken as the weapon to fight against Arkwright’s challenges. But at this time, although wool textile stakeholders in parliament had strong power, they could not obtain the absolute power necessary to constitute the monopoly as urban merchants had in the seventeenth century. Hence after Arkwright’s defense, the parliament agreed to Arkwright’s justifiable requests. From that time onwards, the cotton industry was able to develop without impediment in the structure of the factory system. What needs to be noted is that the domestic

¹ Mantoux 1961: 224

² Mantoux 1961: 224

³ Mantoux 1961: 246

⁴ Mantoux 1961: 246

⁵ Mantoux 1961: 224

system did not phase-out soon after the establishment of the factory. Until the middle of the nineteenth century, the domestic system could still be seen in cottages. But, the declining speed of the domestic system in the cotton industry was much faster than in the wool industry, albeit the wool industry followed in the steps of cotton industry to adopt this new production mode after its successful application in the cotton sector. Thereafter, the balance of power between the wool textile industry and cotton textiles changed. With more organized and mechanized modes of production, the cotton industry sharply changed the structure of British exports. The colonizing power of the British all over the world enormously expanded its foreign market, which offered the domestic industries, especially textile manufacturing, with further Smithian dynamics of development. The supremacy of the cotton industry appeared in such a condition. It happened at the upsurge of the Industrial Revolution, when Britain was coming into the Age of Steam. But all this began with the establishment of the factory system at the end of proto-industrialization.

If we inquiry into the state's role in this great transition, we see that the birth of the factory system was not related to the state's intervention. Just as with the domestic system, the birth of the factory system resulted from some merchants' brave attempts and innovations. But the differences between these two cases are also obvious. The emergence of the domestic system in the wool textile industry suffered strong antagonism from the guild system, which was supported by the state. For a long-time, the domestic system remained at the cottage level and the big merchants were involved into this system until as late as the mercantilist era. Compared to the domestic system, the factory system was spreading much more smoothly, albeit it also suffered from the antagonism of those merchants who depended on the domestic system. After its successful application in the cotton industry, the factory system was adopted by other sectors: not only other textile industries, but also other non-textile sectors. Compared to seventeenth-century Britain (England), in which the shift from the guild system to the domestic system could not have happened had the state did not pass the Statute of Monopolies, eighteenth-century Britain was much more suitable

for organizational innovation. Although economic historians distinguish these two centuries as the century of industrialization and the era of the Industrial Revolution, they were very much so connected. The latter was exposed to the strong influence of the former. The better domestic environment in the eighteenth century for organizational innovation could be perceived as the fruit of former domestic reforms, especially the retreat of the state's power from the management of enterprises via guilds. It is hard to imagine how the Industrial Revolution would have been if the state-granted guild system still controlled the industries, because the industrial regulation that guilds had strictly limited the number of workers or apprentices, the tools being utilized as well as productivities in every workshop. What the guilds controlled was not only the market, but also the management of every single production unit. Taking the guilds'-perspective, Arkwright-like entrepreneurs should be excluded from industrial activities, since their technological and organizational innovations were strong threats to the internal order of guilds. The end of the guilds' monopoly not only liberalized the market, but also kept the state away from the management of enterprises. Plus, mercantilist policies had the effect of protecting the domestic market from the tremendous inflow of foreign goods, and so the venerable domestic textile industries were able to upgrade in a relatively suitable environment of import substitution. The cotton industry at the end of the proto-industrialization era was lucky enough to catch this opportunity and pioneered the establishment of the new mode of production. What needs to be noted is that, just as mentioned above, the retreat of the state's monopoly in industrial activities was the result of the efforts made by the emerging merchants in parliament - especially those big wool textile merchants - who represented the interests of the most significant industry in the proto-industrialization era. In this sense, the cotton textile industry's story of success was built on its predecessor and rival's triumph in the seventeenth century.

4. Textile Industry and State: Southern Song Dynasty

Among all unified Chinese dynasties, Song Dynasty could be seen as the weakest one

in the dimension of military performance. Compared to the former unified dynasty – the Tang (A.D.618- 907), the Chinese Empire in Song Dynasty was turning from outward and expansionary to inward and conservative. Accompanying the shrinking of the territory, the culture in Song Dynasty also experienced a great shift. Generally speaking, Song's culture eventually became very vulnerable due to failures in military actions against the northern states. The economy in Song Dynasty, however, was developed in another direction. Since the loss of the territory in the North West, the economic centre of the Chinese Empire was eventually shifting to the southeast. This shift is quite significant for China, even until modern times. Before Song Dynasty, the economic and political centre was in the yellow river basin. Thus, all unified dynasties before Song Dynasty regarded the northwest part of today's China as its lifeline and the expansion of Chinese Empire were mainly westwards. In commercial aspects, the foreign trade before the Song Dynasty was mainly through the Mongolia Plateau and central Asia. Song Dynasty was confined to the region south of the Yellow river and completely lost the Hexi Corridor (in Gansu Province) which connected Yellow River Basin with central Asia. The loss in the west urged Song Dynasty to gain in the southeast. In Northern Song Dynasty (A.D. 960- 1127), the Yangtze Delta and Sichuan Basin, which was famous for its fertility had already attacked Chinese people from North. In the year of 1126, Kaifeng city, the capital city of Song Dynasty was captured by Jurchen troops. About a year after, the court was restored in the city of Lin'an (today's Hangzhou) by Emperor Gaozong. Although he tried to recover the lost territory in the first few years of his reign, the strategy he adopted in the end was to pay the tribute to the Jin Dynasty. The Chinese Empire thus retreated to the south part of Northern Song Dynasty and took the Huai River as its northern border. The territorial change pushed the economic centre tremendously south. Yangtze Delta and Sichuan Basin's position in the South Song economy was incredibly improved. Moreover, since the traditional trade line was cut by the Northern states, new commercial routes needed to be found. In South Song Dynasty, the rebuilding of foreign trade went in two directions. One is southwestwards, often with Tibetan and other ethnic groups, mainly for obtaining horses; the other was to the

sea. Because of the booming of ocean trade, a large number of immigrants rushed to the Lingnan(岭南) Region, which includes today's Guangxi, Guangdong and Fujian Provinces. Thus, this undeveloped region before Song Dynasty became fully populated and some commercial ports became the crucial origin of the Empire's tax income. The alleged Marine Silk Road which existed even before Song Dynasty became significant. The southeastward development changed the traditional way of Chinese economic development. China changed from a typically inland country to a country facing sea and continent simultaneously. This tendency continued after the Song Dynasty. Ming and Qing adopted close door policies which negatively influenced the overseas trade. However, the Marine Silk Road was not stopped. Although Yuan, Ming and Qing Dynasties were all unified dynasties and the west and north region was recovered, the economic centre of the Chinese Empire was not changed throughout about 600 years: The Yangtze Delta was always the most developed region with the high technological level; and Sichuan Basin and neighboring regions constitute the cornerstone of the Empire's economy. Even when China came into the modern era, these two regions played similar roles as they did in South Song Dynasty: Yangtze Delta was the first region to erect modern industries, and Sichuan Province was the region that supported the nationalist regime to persist to the end of World War II. In a macro-historical perspective, China's current economic geography was shaped in Song, or more precisely, Southern Song Dynasty.

4.1 Brief Introduction of Textile Production in South Song Dynasty

Opposite to the case of the British, the textile industry in China relied heavily on the silk production. Besides silk, hemp and ramie were also traditional fabrics that were utilized as textile material. The silk-dominated structure lasted until the collapse of South Song Dynasty. Actually, this structure was adopted from the former dynasties. In the Ming and Qing Dynasties, cotton served as a crucial fabric in textile production to change the Chinese textile structure. Reviewing the history of cotton in China, we could find that the first step of the cotton textile production set in Yangtze Delta took place in South Song Dynasty.

South Song's textile industry was established on the basis of the Northern Song Dynasty. In Northern Song Dynasty, the silk production was concentrated in the Yellow River Basin, Sichuan Province and mid and lower Yangtze River valley plain. Because of the influence of the war, in the middle 11th century, the centers of Northern Song textile industries began to move to southern China. After Emperor Gaozong's retreat to Hangzhou, Yangtze Delta and Sichuan Plain became the main region producing silk for the Empire. These two regions were slight differently specialized: according to Ge(2008), the Sichuan region was famous for high-grade silks, especially silk brocade. The history of silk brocade can be traced back to the Eastern Han Dynasty (25 A.D.-220 A.D.) Through around 1000 years of development, the silk brocade production in Sichuan reached its peak. Throughout the Southern Song Dynasty, it was the region that produced high-grade silk for the Crown and officials of the Empire. According to Ge (2008), in Southern Song Dynasty, the annual high-grade silk tribute from Sichuan to the court was approximately 110,000 pieces.¹ In the case of the mid- and lower- Yangtze River Basin, it was famous for its large productivity. Since the capital of the Empire moved to Hangzhou, large migrations of troops and civilians into the Yangtze River Basin stimulated the consumption of textiles. In Shaoxing (绍兴) years (1131A.D.-1162 A.D. in Emperor Gaozong's reign), the rate of silk textile products as tax payments was as high as 3.96 million pieces annually.² Besides the silk for normal consumption, this region was also providing the Royal family and officials of Emperor with high-grade silk. Although these regions produced large quantity of silks, the normal textile for use in households and troops were hemp and ramie. The region that produced the most hemp or ramie productions was located in today's Guangxi, Canton and Sichuan Provinces. In other regions, additional productions also existed. In the Yangtze Delta region, new types of hemp and ramie textiles were invented. At that time, nearly every important city had its own textile style.

¹ Ge 2008: 181

² Ge 2008: 181

In Southern Song dynasty, because of the inflows of migrants from the North, silk, hemp and ramie produced in southern China were not able to supply enough fabric to the increasing population. In such a condition, cotton was introduced into Sichuan and areas south of the lower reaches of the Yangtze River. Before that, cotton was introduced from Hainan Island and growing regions were pushed to today's Canton and Fujian Provinces at the end of Northern Song Dynasty. As a supplement to traditional textile, cotton textile did not have the quantitative advantages in Southern Song Dynasty. Its position as a dominant textile in China was as late as Qing Dynasty. But even compare to the cotton industry in Britain at the eve of Industrial Revolution, the productivity in South Song Dynasty was larger. According to Ge(2008), only in the areas south to the lower reaches of Yangtze river alone, the weavers and spinners produce around 200,000 pieces cotton cloth annually.

In the British case, the textile industry in the countryside experienced a process that went from zero to prosperity; the case of Southern Song Dynasty followed another way. Since Southern Song Dynasty adopted everything from Northern Song Dynasty, no matter in whether technological, organizational or institutional aspects, from the beginning of Southern Song Dynasty, the textile industry had already reached a high level. Economic historians always marvel at the technological accomplishment that Southern Song Dynasty achieved. In the textile sector, the degree of mechanization even reached its peak in pre-modern Chinese history. In Dieter Kuhn's work *The Age of Confucian Rule: The Song Transformation of China*, he described some representative machinery that was utilized in silk production. Silk-reeling is a very important technique for silk-production. In two Song Dynasty, this process was mechanized with a reeling frame, which was an extraordinary sophisticated machine. Kuhn (2009) did some researches on this kind of machine from the depiction from *Book on Sericulture* written by scholar-official Qin Guan around 1090. Many silk reels were operated by two workers and were furnished with a treadle. If two frames were used for reeling, a daily output of up to 2,869 grams of raw silk thread was

*possible – a figure that compares favorably with the daily output of factory workers using steam-powered silk reels in the nineteenth century.*¹

Normal textile consumption for civilians in Southern Song Dynasty was hemp and ramie cloth. The mechanization degree in the production of these textiles was also remarkable. Kuhn (2009) valued the spinning frames, which were described in the *Book of Agriculture*, namely *Nongshu* of 1313. It described “two types of the big spinning frames, one type driven by hand or animal, the other by water power, both ideally suited for twisting fibers of ramie and hemp.”² The size of this machine was large. “The length of the machine measured more than 620 centimeters, its width about 155 centimeters. All functional parts were worked by three driving belts, their speeds dependent on the velocity of rotation of the big driving wheel. The general structure and functional parts of the frame were borrowed from silk machinery. The material to be twisted and wound was placed in circular layers in thirty-two cylindrical wooden boxes, which could produce almost 60 kilograms of low-twisted yarn in twenty hours. With ramie, the water-driven frame could be worked all year round except during the few weeks in winter when the river froze.”³

In the British (English) case, the first factory opened by Arkwright was established on the basis of utilization of the water mill. The above mentioned Song spinning frames driven by water power were also set in the water mill. In this sense, in Southern Song Dynasty, the mechanization level was compatible with Britain at the end of proto-industrialization and the beginning of Industrial Revolution. Kuhn (2009) gives high praise to machines for spinning. He believes that these spinning frames “were early predecessors of the box-spinning machine, which was adapted for Italian silk manufacture and British cotton technology, namely those formed the mechanical basis for the industrial revolution in Europe.”⁴ These technological advantages facilitated

¹ Kuhn 2009: 220

² Kuhn 2009: 221

³ Kuhn 2009: 221

⁴ Kuhn 2009: 222

the textile production and improved Southern Song Dynasty's large manufacturing ability in a relatively limited territory. The bulk of these technologies and machines were invented in Northern Song Dynasty and spread with migrations to Southern China in Southern Song. In this sense, quite different to the British (English) case, the industrialization of textile production in Southern Song Dynasty began with a high technological level. In the Southern Song era, these machines and technologies were used in two textile sectors. The first pattern was in state-owned or government-run textile workshops or water mills. These production places were for serving the Crown, empire officials and royal troops. Usually these workshops or mills were large and used relatively higher-level technologies, compared with the textile production in private sectors. This production was adopted from the beginning of the Northern Song Dynasty. As early as 970, Emperor Taizu established two water mill agencies, one in the west of Kaifeng and one in the east, each of them operating a mill that provided the Imperial Palace and residents of the capital with flour. Each of the mills was headed by two officials and staffed of 205 workers.¹ In Southern Song Dynasty, since the loss of northern territory, the government-run workshops and mills moved to Sichuan and Zhejiang. In the year of 1161, in Hangzhou Lingjinyuan (綾錦院), a workshop for the imperial palace, 1000 workers worked with spinning and weaving frames.² The textile production in this kind of pattern did not consider the productivities and cost. For the normal consumption of textile in Southern Song, the main body of production was the private sector. This production pattern took place in households in rural areas. The machine used by rural households could not be as sophisticated as the ones that government-run workshops used, but the technology level was also relatively high, compared to the rural wool textile industry in Britain. The above-mentioned spinning frame was used by the women in rural areas in Southern Song Dynasty as a tool. The household textile production was usually taken as a supplement to the farming. However, in the area such as Yangtze Delta, the specialized households that were dependent on the textile productions, namely the

¹ Kuhn 2009: 224

² Ge 2008: 193

alleged *jihu* (机户 the household owning machines) were also prevailing in Southern Song. Usually, these types of households owned more machines than normal rural households.

In such a condition, the textile boom was taking place soon after the settle-down of the court in Hangzhou. Compared to the British case, in which the technological evolution took around two centuries from proto-industrialization to Industrial Revolution, the speed with which technology evolved in Southern Song was very fast. This could be an instance of the Chinese state's stationary efficiency, mentioned by Wong (1997). The history, however, seems to end in Southern Song. In Yuan, Ming and Qing Dynasties, although the productivity was increasing due to the expansion of the population, the inventions of technologies and machines never reappeared with such vitality. Some of the machines could not even be re-produced in later Chinese history. Advanced as these machines and technologies were, these high-level inventions in Southern Song Dynasty did not lead to a revolution of textile manufacture in China, albeit they were prevalent in the textile sector all over the Southern China. Why were the technological advantages in Southern Song not preserved by the Chinese Empire? To answer this question, a detailed observation of Southern Song textile production in non-technological aspects is necessary.

4.2 Proto-industrialization, textile manufacture and its dynamics

In Southern Song Dynasty, two different production patterns co-existed in the Empire. Since the main body of Southern Song textile production was in rural households, we could say proto-industrialization also took place in Southern Song's textile production. The productivity of textile in the rural areas was considerable. In most of areas, the division of labor in a rural household was "farming by men and weaving by women". The basic aim of textile production in the rural household is two-fold: one is for self-use; another is for the tax payment.

Household self-use or self-support was the traditional textile manufacturing in

pre-modern China. In traditional Chinese rural production patterns, namely ‘farming by male and weaving by female’, textile production supplied necessary fabrics to meet the living demand. The textiles produced in this way did not come into market circulation. In Southern Song Dynasty, major portions of self-use textile were hemp and ramie cloth, since silk was traditionally reserved to officials. But according to Ge(2008), since the improvement of silk textile technologies, large numbers of silk surplus rendered this high-grade textile available for the common people.¹ Due to the big population in Southern Song, the quantity of self-use textiles would have been large. Wu (2008) did a thorough statistical analysis of the Southern Song (since the war, the data from 1127 to 1159 was not available) population. In the year of 1159, the total number of households was 11,091,885² and in the year the Southern Song was defeated by the Mongolian troops, the total number was 11,746,000³. The peak of total household numbers was 12,907,438⁴, in 1189, during Emperor Xiaozong’s reign. The total number of households in Southern Song was relatively stable, although it was negatively influenced by the war. Although there is no data about how much textile was produced for self-use exactly, the stability of household numbers ensures the large volume of textiles for household self-use.

Besides the ‘farming by men and weaving by women’ production pattern, in Southern Song Dynasty, some rural households eventually separated from the farming and became specialized in industrial activities that related to textile manufacturing. In Anji(安吉) county (in Zhejiang), the bulk of households were making their living on silk worm rearing and silk production. Raising ten bolt of silk worm could support a rural household with ten members to obtain food and necessary cloth for a year.⁵ Zhejiang was suffering from the scarcity of land after the huge inflow of migration from North. According Ge (2008)’s calculation, the productivity of silk worm rearing

¹ Ge 2008: 194

² Wu 2008: 90

³ Wu 2008: 93

⁴ Wu 2008: 92

⁵ Ge 2008: 194

and silk production was five times that of farming¹. Hence, the rural household tended to specialize in the former. The specialization of silk production triggered the emergence of market-oriented textile production, especially silk production. Since silk production involves silk worm rearing and silk weaving, two processes which were relatively independent, the deepening of specialization gave rise to the households of silkworm and mulberry (*cansang hu* 蚕桑户 or *sangyuan hu* 桑园户) and households owning weaving machines (*jihu* 机户). In some regions in Zhejiang, because of the increase in households that only made a living on silk production, the demand of mulberry leaves also rose up. The trade of mulberry became a profitable business for the rural areas that were suitable to plant mulberry trees on a large scale since the demand of these raw materials was really large. In Southern Song, the areas near Hangzhou had already formed markets for mulberry leaf trade. Sometimes, those households specializing in silkworm or mulberry also engaged in the production of raw silk. The market of raw silk was also established in the Southern Song Dynasty. Both of these two markets facilitated the households of machines, since they could obtain the raw materials from trade, rather than being dependent on self-production. The households specializing in weaving machines were also a common phenomenon in Southern Song. Yangtze Delta was the region that these households assembled. The majority of these households were in rural areas, whereas in urban areas textile manufacturing households existed but were less common. For example, the bulk of the residents in Jinhua(金华) County took silk weaving as their source of living. In most cases, the households of weaving machines could be seen as handcraft workshops that involved the family members. In these households, the traditional production pattern was changed. The difference between gender roles in such households was not as strict as in common ones and men became the important laborer in the silk production. A normal household may have owned one or several machines. For those large ones, the number of machines they preserved was usually in the tens or even more than a hundred. Big households of machines could not only maintain themselves on the labor of family members, and unusually they employed

¹ Ge 2008: 182

those people who lost land in rural areas or poor people from the cities. This situation was quite similar to the British case in the wood-pasture region. The difference is that the regions that had households focusing on weaving machines in Southern Song Dynasty were much bigger than those in British case. The total number of households of machines was also large. According to Qi, throughout the Song Dynasty, the total number of such households was around 100,000, approximately 0.5%-0.7% of total households¹.

Households of machine were specialized in the production, but their products need to be traded for food, non-textile goods or money. This demand created the opportunity for middle men who connected the manufacturer and market. In general, they provided loans to the household owning machines at the beginning of the year. In the time between summer and autumn, they charged a certain quantity of textile as repaying. Almost the bulk of production from households owning machine was collected in the hand of middlemen and after this, the middlemen's role would change into tradesmen in the textile market. They are quite similar to the clothier in British (English) case, but the difference is that the clothier also granted the domestic production with raw materials whereas the middlemen in Southern Song seem only to have granted the households of machines with the capital for production. As for the raw materials, such as hemp, ramie and raw silks, they could be obtained in the special market mentioned earlier. In such a condition, household owning machines, markets of raw materials and middlemen formed a Chinese "domestic system" that was similar to the British case. Even disregarding the division of labor or mechanization degree, the domestic system in Southern Song was comparable to that in the later phase of British proto-industrialization.

In Southern Song Dynasty, as in most of the Chinese dynasties, another crucial aim of silk production was for tax-paying. The Southern Song Dynasty adopted the two-tax system, which was established by Yang Yan in 780. Initially, the tax was collected

¹ Qi:153

according to local conditions in either one or two payments per year, in summer or in autumn.¹ The two-tax system replaced an old system consisting of a land tax paid annually in the form of cereal grains, duty paid in form of textile fabrics and compulsory service provided in the form of time and labor.² From Tang Dynasty to Song Dynasty, since the improvement of farming productivity, the tax that was paid in the form of textiles was also growing considerably. According to Kuhn (2009) the tax fabric requirement was higher than former dynasties in two Song Dynasty. Standard pieces of silk tax fabric measured between 13.29 meters long and 79 centimeters wide. Throughout two Song Dynasty, the annual figure of silk tabby weaves accounted to around 2.9 million bolts. But what needs to be noted is that, in Southern Song Dynasty, the monetization of tax-paying had already started. As very important commercial goods that rural households produced, textile fabrics infolded into the market and changed into currency. Although the exact quantity of this sort of textile production is unavailable, considering the sharp increase of tax during Southern Song, it must have been very large.

In addition to paying annual taxes, there was a “harmonious beforehand selling” (*heyumai* 和预买) policy, whereby the government gave tax credits to farmers, which were paid back in silk fabrics. This system was started to ensure the government could get enough fabrics with a reasonable price. The profit of farmers was also taken into consideration initially. To the Southern Song era, however, this equal trade policy transformed into a tax-like obligation. Then this system amounted to a compulsory sale to the state of enormous quantities of silk at a vastly reduced price.³ According to Wang (2006), the farmers sold the textiles to the government with a price as low as one third of price in the market,⁴ but the quantities of textiles that government purchased with this principal was much larger than the tax fabric. In Northern Song era, 30 million bolts of silk were purchased in the name of harmonious beforehand

¹ Kuhn 2009:224

² Kuhn 2009:224

³ Kuhn 2007: 247

⁴ Wang 2006: 477

selling and in Southern Song, since there had been an increase in production, it was expanded. In Southern Song, since the improvement of the monetization of tax, the government formulated the “silk-convert money” (zheboqian 折帛钱) policies on the basis of harmonious beforehand selling, namely converting the textiles that needed to be paid in summer tax and in harmonious beforehand into a fixed amount of money and obligating the farmers to pay in cash annually, no matter whether the price of the textile increases or declines in the market. Actually, the silk-convert money was usually higher than the market price. In order to obtain more cash to pay this new tax, the farmers had to sell more home-produced textile in the market. Compared to only paying the two-tax and harmonious beforehand selling in real textile, silk-convert money actually absorbed more textile fabrics and increased the burden of rural households. With such a pressure, the weavers needed to throw their shuttles to and fro and fill the cloth beam inch by inch everyday to meet the demand of the state. The working hours were usually long. Although the Industrial Revolution did not happen in Song, the “industrious revolution” readily took place in such a condition.

4.3 State’s Role and Dynamics of Textile Manufacture

As mentioned above, three non-technological factors constitute the dynamics of textile manufacture development in Song Dynamics. If we look into these dynamics deeper, we will see that with the exception of textile-production for self-use the other two dynamics, namely manufacture for market and for tax-paying were directly exposed to the influence of the state.

The expansion of the market was not a spontaneous process in Song Dynasty. Before Song, the market was under the control of the state in both the urban and rural areas. Compared to European cities, in Chinese history cities functioned more as a hub of political power, rather than a commercial node. The commercial activities in cities were strictly planned by the government; in particular space and time. These spacial and time restrictions began to be removed from Northern Song Dynasty. In both of the two Song Dynasties, the government broke the distinctions between the residential

area (fang,坊) and commercial area(shi 市). The urban residents could set up shops or commercial places relatively freely in terms of getting the state's permission. Moreover, in the urban area the ban on commercial activities at night was abolished and in some cities, the commercial activities could be seen for all day and all night. The commercial activities in the rural areas, which used to be repressed by the local government, also boomed. Two Song's policies on rural market were laissez-fair, namely the state totally retreated from the control of the market in the rural area and rural residents could establish regular market according to their own will. The above-mentioned trade of raw silk and mulberry leaves took place in the free rural market without the state's control or supervision. Government's tolerance towards the domestic market even influenced its policies of foreign trade. Of all the Chinese dynasties, the Song was regarded as a "mercantilist dynasty" for its peculiarly positive attitude towards foreign trade. Not again until modern times have there been so many open ports in China. In the Northern Song era, nine ports were opened for foreign trade, which were even four more than ports than were opened after the first Opium War between Qing and Britain. Because the loss of northern territory, the open ports in Southern Song was fewer than Northern Song, but the number was still as large as eight. Quanzhou (泉州) was the biggest among them. Southern Song government established the Maritime Trade Commissions (shibosi,市舶司) to manage these big ports. The task of these commissions were (1) to supervise the Chinese merchant going aboard and to license their ships, (2) to handle the affairs of the foreign merchants in China, (3) to inspect merchant ships and (4) to levy duties on imports.¹ Song government levied duties at the rate of around ten percent. With this the state became the biggest beneficiary of this system. But since Southern Song government did not directly monopolize the trade, in turn, its policies towards overseas trade were quite tolerant. Except the goods for the military use or under state's control, almost every kind of good could be traded in these ports. Moreover, the Southern Song Navy protected the mercantile ships from piracy and other threats. The Southern Song government's mercantilist actions were different from its precedent and successor. In

¹ Lo 1969: 65

Tang Dynasty, only one port enjoyed such kind of support from the state, and in the Ming and Qing Dynasties, the state even suppressed foreign trade and implemented strong restrictions on the limited ports that were open. Hence, among all of the Chinese dynasties, the transaction cost of the overseas trade that was generated by state was the lowest. In such a condition, the foreign market developed as another major market for the domestic products, although it was still much smaller than the domestic market. The textiles, especially those high-grade silks, went through the open ports and were transported to Southeast Asia and Arabian Peninsular. The number of opened ports was less than ten, whereas the volume of textile trade in these ports consisted of 5 percent of total volume. Although the foreign trade was not as crucial as that in the British case, it readily stimulated the textile production in Southern Song territory, especially in costal regions, such as Yangtze Delta, Fujian and Canton.

In short, the state of Southern Song held a mercantilist attitude toward the market. The basic reason for British mercantilism's prevalence in seventeenth and eighteenth century was policy makers' understanding about the positive effect of trade on a state's wealth. Interestingly, as a traditional Confucian dynasty, Song Dynasty generated similar ideas spontaneously. In Song Dynasty, the Neo-Confucian dogma of the Cheng Brothers and Zhuxi which was respected as orthodox by Ming and Qing rulers were inchoate in the two Song Dynasties. In the meanwhile, the "Gongli" (功利, success and profit) school of Confucianism became the more popular and more representative of the temper and the spirit of the time. This philosophy sought the aims of enriching the country and building up its armed strength¹. With this objective, the government turned to support the business activities and any innovation or improvement of production. As early as Northern Song, the empire's reformers such as Fan Zhongyan and Wang Anshi adopted these ideas. Such concepts urged the government to rethink the traditional ways of administration and the relative liberal policies were adopted. Hence, it could be seen that in trade in the rural area, the state

¹ Lo 1969: 60

nearly retreated from the monopoly.

Here another question arises: why did the empire's officials began to embrace the Gongli school of Confucianism in Song Dynasty but not in Tang dynasties which also seems open and tolerant? The reason should be Song's fiscal situation. Both Northern and Southern Song were facing a serious fiscal problem generated by the continuous wars against northern states and also big systems of bureaucracy. Both of two Song Dynasty were self-contradictory dynasties. On one hand, they were facing the strongest military opponents from the north and needing a big reserve of army; on the other hand all emperors followed the Emperor Taizu's notion that military power should be marginalized to prevent a revolution similar to what happened in 960. From the beginning of the Northern Song, the emperor sharply promoted the status of civil officials and the bureaucracy system swelled tremendously. Either increasing wars against the northern states or the expansion of the empire's bureaucratic system, both of these two tendencies consumed a great number of fiscal resources of the empire. As early as the beginning of the Northern Song, this fiscal problem became distinct. As Lo (1969) mentioned,

the government was saddled with an outsized administrative staff and its army in the middle of the eleventh century had four times the number of troops it had seventy years before. War expenses during the last years of Northern Song consumed fifty of the sixty million strings of cash received as revenue¹.

The situation got more serious after the collapse of Northern Song. The fall of North China to the Jurchen invaders disrupted the economic life of the Song Dynasty. With the curtailment of agricultural and industrial production, the cash receipts, which constituted about half of the income of the state, shrank to a little more than ten million strings. Meanwhile, expenses mounted. In the first years of the Southern Song, the outlay for the army came to 800,000 strings a month or about 9,600,000 strings a year, and the expenditures climbed further when Song Government intensified its

¹ Lo 1969: 62

rearmament program and when it paid tribute to the Chin court¹. In order to resolve this problem, a new source of income needs to be found. The expansion of the market could provide the state with a huge and stable administrative income. Therefore, commercial activities turned to be regarded as in favor of the state and thus were supported.

The expansion of the market via Song state's mercantilism did open another source of state's income. However, Song did not develop into another kind of state. Although the commercial activities were flourishing, Song was still an agricultural society which laid its fiscal foundation on the collection of tax from rural areas. The income that the state absorbed from farming and rural textile manufacture was much larger than that from the commercial activities. Hence, compared to the dynamics generated from market expansion, the direct tax via means of textiles was much a stronger dynamic that stimulated the increase of textile industrial activities in rural areas.

4.4 Tax, State and Stagnation of the Organizational Change

This situation was quite different from Europe. In the British case, the commercial activities ensured the sustainability of the state's income. In pre-industrial era Britain, the bulk of the taxes that the state levied were indirect tax. The way to the Industrial Revolution was parallel to the process of commercialization of the state. In Southern Song era, the urbanization process that accompanied the commercialization of the state was also obvious. The development of a commercial society in Southern Song was embodied in the financial tools that developed to meet the demands of commercial activities. These tools were similar to or even in advance of those in the eighteenth century Britain. However, the relationship between the court and rural society remained as simple and direct as previous dynasties. For example, just as mentioned above, the major income of the Empire was still the two-tax system, which was a heritage from Tang Dynasty. "Harmonious beforehand selling" and "silk-convert money" were only the extensions of this kind of system. Southern Song

¹ Lo 1969: 62-63

did experience a kind of economic transition. The economic transition, however, was mainly in the liberalization of the market dimension, especially foreign trade. This said the expansion of the market and the booming of urban commercial life did not let the state change into to the Britain-like mercantilist country which laid its economic fundament on the commercial activities, albeit both of them developed their own mercantilism. The mercantilism in Southern Song was advocated and implemented by the Empire officials, who were not involved in the commercial and industrial activities themselves; whereas in the British case, the big merchants who were related to manufacturing and trade had their own position in parliament and with the deepening of proto-industrialization; their influence on politics eventually became stronger. In such a condition, the results of the mercantilism in these two countries became diversified: In Southern Song, the market reform was only taken as a new way to expand the empire's financial basis and it did not provoke any fundamental change in the state; whereas Britain totally changed into a country that lived on trade and manufacture for trade. Thus, Southern Song formed a structure of dual economy: in the cities, the trade and related financial activities had already developed a kind of "modern character"; but in the rural area, it still remained almost the same as former dynasties.

This dual economy did not causally relate to the incapability of the Song to have a modern style industrialization period. In fact, several successful modern examples of industrialization were realized in the condition of a dual economy. The problem of a dual economy in Southern Song Dynasty is that the proto-industrialization was in the rural areas, where the state decided to retain the same control as former dynasties. Although the state facilitated production via spreading technologies and providing loans to the households in the rural area, the tax that the state levied in the rural area also robustly increased in this dynasty. The backwardness of the two tax system in Southern Song is that the taxes were collected from every rural household by the means of textiles. The result was that every household, which was the basic production unit of the textile industry, needed to finish a certain amount of

manufacture task for the state, but not for their own profit. In Song Dynasty, because of the serious fiscal crisis, this kind of obligation became heavier than former dynasties. It means the labour that rural households input in the production for the state increased. Hence, the absolute majority of laborers could only work for their own families, albeit the demographic mobility in Southern Song Dynasty was higher than former united dynasties. With such a strong state's intervention, domestic systems became the best way for rural households to simultaneously achieve manufacturing efficiency and meet the state's demand. Throughout the Southern Song Dynasty, domestic system was dominant in rural areas. If taking its existence in the Northern Song into consideration, the domestic system existed around 300 years before the collapse of Southern Song. During these three centuries, the domestic system experienced improvement, mainly via deepening of labor division. The above-mentioned emergence of middle men was an exceptional example. What needs to be noted is that the middle men's work was to connect the production and the market via trade and loan, whereas the production process was seldom involved into. Compared to the clothier in the British (English) case the middle men are traders, rather than entrepreneurs. The households owning machines performed more like factories or workshop owners, but usually the number of machines they possessed and the labor they employed was much smaller than the British (English) case. Moreover, although historians gave high praise to the birth of household owning machines in Song Dynasty, they also admit that the number of this kind of household was quite small and most of them were in urban areas. It means that household owning machines could only cover a minimal portion of textile production in Southern Song Dynasty. In short, no matter their role in the production process or their influence on the textile production in general, both the middle men and household owning machines could not perform the same function as the clothier in the British case, let alone as those Arkwright-like entrepreneurs who owned factories at the end of proto-industrialization era.

In conclusion, it seems like that there was an equilibrium of organizational change in

Southern Song. For most manufacturing bodies, the domestic system became the optimal choice and the incentive to attempt other production modes was marginal. What happened after the establishment of the domestic system in Southern Song was only the deepening of a division of labor. Hence, the production mode stagnated as scattered, small and with a lack of regulation. In such a condition, although the advanced machinery was invented in Southern Song, it could not be popularly applied throughout the country since small, scattered workshops could not afford the cost of these machines. In addition, there is another fact that needs to be noted. In Southern Song, the division of labor and the mechanization degree in the government-run workshop was comparable with the factory in the initial phase of British Industrial Revolution. However, this kind of manufacturing organization was not profit-driven, and they normally only served for the luxury consumption of court and high level officials who usually did not take the cost into the consideration. In this sense, the government-run workshop could not be seen as a factory like Arkwright established in Cromford. In fact, because this non-profit-driven system needed large inputs of capital by the state, the number of these workshops was extremely limited. In Southern Song, these workshops were mainly near the Hangzhou, where the court was located.

Therefore, the divergence appeared: at the end of the British (English) proto-industrialization, Britain (England) had already made the three prerequisites for the coming Industrial Revolution in textile industry: expansion of market, invention of technology and innovation of organization. By contrast, Southern Song only achieved two aspects: relative liberalization of the market and nationwide application of advanced machinery. The organizational change lags far behind the progress made in these two aspects. The further development of the textile industry in China was profoundly constrained by this unbalanced structure.

5. Conclusion:

Finishing the analyses on the two cases, I will finish with a comparison. First, let us summarize the findings in the aforementioned descriptions and analysis. The core part of this paper is the third and fourth sections. Generally speaking, the third part describes the internal changes of the textile industry in the proto-industrialization era. During that period, British textiles were characterized by the booming of wool textiles, with the cotton industry emerging at the end of the Industrial Revolution, which was characterized by a factory system (from an organizational point of view). Proto-industrialization in the wool textile industry started in the rural wood-pasture regions in England, where the Crown's monopoly via the guild system was weak. In the seventeenth century, the wool textile industry was developing in the countryside while mercantilism prevailed in the government. The decline of the Crown's monopoly over the market and patents, together with mercantilism, increased the power of emerging wool textile interests in parliament, especially in the House of Commons. In such conditions, the state endowed wool textile manufacturing with protection via the means of war against Holland and a ban on Asian textiles, etc. Moreover, the decline of the guild's monopoly increased the possibility of capital inflows into rural areas. Thus, with expansion of the market, especially the foreign, and the decline of those institutional factors that generated high transition costs, the wool textile industry effectuated import-substitution. In this process, domestic wool textile production was developed and established itself as the typical production pattern for the whole textile sector. Under the influence of the wool textile industry, the latecomer – the cotton industry, which was not an indigenous industry in the British Isles - rose to its legendary status today. In its infancy, the cotton industry did face threats from wool textile interests and Asian textiles. However, through parliamentary movements in which wool textile interests participated, the state's monopoly was much weaker than at the beginning of the seventeenth century, when rural wool textile industry was in its infancy. Moreover, the cotton industry also received protection because of wool interests' struggle against the East India

Company in parliament. Therefore, compared to when the wool textile industry emerged in the wood-pasture region, the institutional environment for the infant cotton industry was much better. The relative liberal institutional environment later on rendered organizational change possible. Through the brave attempts by new entrepreneurs, the factory system was established for the cotton industry. This successful attempt largely reduced the transition costs that the domestic system needed and thus, on the eve of Industrial Revolution, the cotton industry rose up due to modern production patterns.

The Southern Song situation is quite another story. Migration from the North urged by the war brought advanced technologies to Sichuan and the lower Yangtze River regions. Despite losses in the northern territory, the high degree of internal unification within the Empire was not reduced. Under such conditions, technologies brought by northern migrants spread smoothly throughout the territory. Hence, proto-industrialization in the Southern Song case started at a high technological level. Moreover, the Southern Song Dynasty was suffering from constant wars and the burden of big bureaucracy. Thus it encouraged rural production on the one hand and supported commercial activities on the other hand, aiming at enlarging the tax source. As a main industrial activity in rural areas, textile manufacturing got state support. With the increase of commercial activities, both domestic and foreign markets for the rural textile industry got expanded. With these Smithian dynamics, rural textile production got specialized in some regions and the division of labor deepened. The Chinese domestic system was established in this context.

In the meanwhile, fiscal dilemmas also urged the state to stabilize and expand its major income resource – a two-tax system – in rural areas. Because a large portion of the two-tax system was paid household by household with textiles, rural households needed to directly manufacture textiles for the state. It was hard for them to try other production systems which were not built on the foundation of the household. In such conditions, the domestic system was the optimal choice that could ensure production

efficiency and fulfill state demands at the same time. Hence, although the Southern Song dynasty already possessed the technologies that, similar to those that started the British Industrial Revolution, allowed the organization of production to remain at the domestic level and evolve into a factory-like organization. Finally, the organizational changes in the Southern Song region lagged far behind technological and market developments. Without suitable organization, high-level technologies scattered in the rural area could not sustain development. After the Southern Song era, no Chinese dynasty could replicate the Southern Song textile industry's glory.

Comparing the textile industries in the aforementioned states, we can see that the textile industries received both negative and positive influences from their states. The Southern Song state did not facilitate the birth of an endogenous factory system because it formulated the state's high efficiency on taxes from households, but it did readily facilitate the utilization of new technologies and machines within the empire. Up to the early modern era, the British (English) state did not have such an ability to disperse new technologies on a large scale. However, through constant reform, it readily gave enough space to the private sector to experience both technological and organizational changes. More concretely, the Southern Song State was glorious in its highly stationary efficiency within the empire, but its textile industry also stagnated because of it. This highly stationary efficiency was achieved via the state's absolute power and development of industrial activities could not develop outside of its influence. The textile industry finally was limited by the taxation system, which directly exposed to the influence of the Court. What makes the Southern Song dynasty unique is that the state adopted a very positive attitude to the market and commercial activities. Hence, in this dynasty, the Smithian dynamics of textile industry development was remarkably strong and it became a very crucial reason for the emerging peak of the Chinese textile industry in the Southern Song region. In the British case, Britain (England) was weak due to competition from the European Continent, as well as internal competition between the Crown and Parliament. But it also benefited from the result of this competition. This competition expanded the

market, which created Smithian dynamics for the textile industry in Britain (England). Also, competition endowed industrial interests with full capabilities to escape from the absolute monopoly of the Crown and to try any possible organizational change in accordance with their own needs. Finally, both technological and organizational improvements enabled the cotton industry to function as a pioneer in the Industrial Revolution. We cannot deny that from a market perspective, the Song State performed even better than the British (England) state. What created the divergence is that Southern Song state aimed for stationary efficiency, whereas the British (English) state was shaped through internal and external competition. These two types of states developed separately, shaped their textile industry's own way of development, and led to the different fates of the textile industry.

Thus, a great divergence took place between these two cities. With mechanization in the factories, Manchester was making a miracle of the cotton industry, which also could be regarded as the symbol of the rising British Empire. The spinning machines driven by the steam power roared like tigers, ships fully loaded with cloths navigating to faraway places, and the prestige of the Empire where the sun never sets was known to world. On the other end of the Eurasian continent, Hangzhou continued its traditional way of silk production. The fingers of silk weavers were still skillful, the design of the silk fabrics still elaborate, but the era of the Silk Road had already ended. In the world market, the legend of Chinese silk was finally replaced by British cotton textiles. Why Manchester but not Hangzhou? The story is not only about technologies, but also about the role of the state in the making of different production systems.

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