Institutional Differences and the Great Divergence:*

Comparison of Joseon Kingdom with the Great Britain

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Abstract

If modern Koreans in the 20th century could achieve a remarkable economic growth through industrialization, why couldn’t their ancestors in Joseon Kingdom in early modern period achieve an industrial revolution at that time? This is the fundamental question of this paper. There existed several social and institutional constraints in Joseon Kingdom (1392-1897 A.D.) in the 17th through 19th centuries that made her industrial development impossible. The strictly defined social classes and the ideology of the ruling class deprived Joseon Kingdom of the entrepreneurial spirit and the incentives to invent new technology necessary for industrial development. Markets and foreign trades were limited and money was not used in transaction until late 17th century. Technicians and engineers were held in low social esteem and there was no patent to protect an inventor’s right. The education of Confucian ethical codes was intended to inculcate loyalty to the ruling class Yangban and the King. The only way to get out of the hard commoner’s life was to pass the national civil service examination to become a scholar-bureaucrat. Joseon Kingdom was a tributary country to Qing Dynasty and as such it had to be careful about technological and industrial development not to arouse suspicion from Qing. Joseon was not an incentivized society while the Great Britain was an incentivized society that was conducive to Industrial Revolution.

Key words: Joseon Kingdom, Industrial Revolution, scholar-bureaucrat, Yangban, GwaGeo,
Confucian ethical codes

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“There is nothing distinctive, however, about the ingredients themselves. What produces the revolution is their combination. What guarantees modern economic growth is their degree of development.” Phyllis Deane (1973, p.162)

“Invention occurs at the level of individual. … Individuals, however, do not live in a vacuum. What makes them implement, improve, and adopt new technologies…depends on the institutions and the attitudes around them. It is exactly at this level that technological change is transformed from invention, a game against nature, to innovation, a complex, positive-sum game with many players and very incomplete information.” Joel Mokyr (1990, p.155)

1. Introduction

The level of income and the standard of living throughout the world had been stagnant in the middle ages(5th-15th century) until the Industrial Revolution in the European countries made Western economies grow manifolds as can be seen in Figure 1. There occurred a Great Divergence of the paths of the growth of the economy in the Western countries and the Asian countries whose economies have been lagging far behind since then with the exception of Japan. Because China (Qing Dynasty 1636-1912), Japan (Tokugawa Bakubu 1603-1867), and India (Mughal Empire 1526-1858) had quite advanced civilization or even higher standard of living than European countries, it is puzzling why their economies did not grow as fast as the European countries in the 17th through 19th centuries. Thus, one of the confounding questions in world history is that why the Industrial Revolution began in Europe especially in the United Kingdom rather than in Asia especially in China or Japan?

Industrial Revolution is defined by Phyllis Deane (1973, p.161) as “… the complex of economic changes which are involved in the transformation of a pre-industrial, traditional type of economy, characterized by low productivity and normally stagnant growth rates, to a

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1 A note on Korean notation in this paper is in order at the outset. Korean syllables are written without a space if they are one word. Each syllable starts with a capital letter even in the middle of a word unless it is an already well known word to minimize any confusion on the exact word. The proper name of a person is written in the Korean way. That is, the surname is written before the given name and a given name is written without a space but with a capital letter for the second syllable if two syllables comprise a given name.
modern industrialized stage of economic development, in which output per head and standards of living are relatively high, and economic growth is normally sustained.” Mokyr (1985, p.1) quotes Perkin’s (1969, pp.3-5) definition of the Industrial Revolution: “ …a revolution in men’s access to the means of life, in control of their ecological environment, in their capacity to escape from the tyranny and niggardliness of nature … it opened the road for men to complete mastery of their physical environment, without the inescapable need to exploit each other.” Industrial Revolution in Europe in the 17th and 18th centuries entails changes in economic organization that depart from the pre-industrial family based production unit and local need based economic organization to impersonal technology spurred factory based production and national market oriented economic organization. There should be demand before the production can increase in a large scale which necessitates technological innovation however primitive the initial ones might be. For massive production, the need for accumulated capital and organizational innovation also arises. Deane (1973, p.161) points out that “the organizational developments that underlie the massive shifts in the scale of economic activity and enterprise [were] necessitated by sustained population growth and permitted by technical progress. More efficient or less scarce new kinds of raw materials were discovered to necessitate new technology to master them. With the new material and new technology, shifts from primary production to secondary industry occurred and the traded goods or luxury items are now produced domestically. As factories are built, towns developed and tertiary industry also grew. Thus industrial structure had undergone changes. People moved from countries to cities.”

Jones(1981) attributes the European miracle to the geopolitics of colonization and nuclear family structure of European countries. Landes(1969, 1998) emphasizes the development of science and technology and points out that in addition, in Europe, there were social recognition of the value of hard work, thrift, perseverance, and the willingness to learn; and above all the social structure which allowed such industrial endeavor while the social structure in China or Arabian countries did not allow such technologically driven industrialization. On the other hand, Frank(1998) argues that the center of the trade was China and European economic growth was in part due to an accidental acquisition of the gold and silver from the colonies in South America. California School argues that the revolution in energy was the crucial force behind the industrial revolution and the European political system was more conducive to energy revolution. Wong (1997) explains that Chinese
government strived to distill Confucian ethical enlightenment and to enhance the wellbeing of the people through the fractal structure of the central-local governments while the European governments engaged in mercantilism. It was not a matter of superiority of capability but a matter of difference in the way of thinking. Pomeranz (2000) also argues that the level of wages, population, technology, and legal system were not so different among England, Yangtze River Delta, Japan, and the advanced regions in India. But England could secure resources from colonies and excavation of coals was relatively cheaper because they were surface mines and located near towns of industrial center.

Figure 1. Comparison of the Income Level

![Graph showing Comparison of the Income Level](image)


Estimates of GDP per capita at purchasing power parity in 1990.

The population of Japan was 31.10 million in 1750 while it was 24.83 million in the South of the Yangtze River region of Qing in 1766. The consumption of crops per capita of working age population was 1.08 Doe in Japan and 1.64 Doe in Southern Qing while it was 1.30Doe in Joseon which was an adequate level for everyday living. The population of

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2 Park(2005, pp.43-45) estimates the production of rice and divides it by the working age population. Doe was a measuring unit of volume and equivalent to Seung which was about 533g. The size of Doe or Seung in Japan and Qing was about half of the size in Joseon which means that the consumption of rice in Joseon was higher.
Joseon was about 60% of Japan at 18.66 million in 1750.\(^3\) The size of British population was about 7 million in early 1700s and grew to be about 11 million by early 1800s and 21 million by 1850.\(^4\) Thus, as far as the size of population is concerned, Joseon Kingdom is closer to the Great Britain than Japan or Qing. In addition the areas of the land of these two kingdoms are about the same.\(^5\) Since the size of population and the land of the Great Britain were much smaller than those of Japan or Qing and closer to those of Joseon Kingdom, it would give us more balanced comparison if we compared the Great Britain with Joseon Kingdom. Thus, we might say outrightly that it would not be on account of the size of population or land if Joseon could not industrialize like the Great Britain at that time.

Modern successor of Joseon Kingdom, the Republic of Korea is well known for her industrial miracle of Han River as one of the four dragons in Asia. Korea has successfully transformed herself into a capitalist industrial economy in less than half a century and has become a member of OECD in 1996. If the descendants of Joseon Kingdom could do it, why couldn’t their ancestors in Joseon Kingdom in the 17\(^{th}\) through 19\(^{th}\) centuries achieve a similar industrial miracle at that time? In this paper, we try to answer this question just raised. We will not be concerned with the great divergence per se. Rather we will try to find out what prevented an Asian country, Joseon Kingdom, whose descendants apparently have proved the ability to create a capitalist industrial economy as a late comer in the 20\(^{th}\) century, from developing an industrial economy for herself in the 18\(^{th}\) century. In the following section, the foundation and isolation of Joseon Kingdom is overviewed. In Section 3, markets and commerce of this hermit kingdom are examined. In Section 4, social structure in this closed society and underlying educational philosophy are analyzed. In Section 5, the differences in institutional constraints of Joseon and the Great Britain are compared. Some concluding remarks are in the final section.

2. Foundation and Isolation of Joseon Kingdom and Yi Dynasty

Old Kingdoms in the Korean Peninsula had never been a part of China. They had highly developed cultures of their own and served as passages of the advanced culture and knowledge from China to Japan which benefited Japan considerably on her way to building a

\(^{3}\) The population of Qing as a whole in 1776 was about 268 million. See Park(2005, p.43).


\(^{5}\) The area of UK is 243,610 km\(^2\) and that of Korean peninsula (North and South Korea) is 220,847 km\(^2\).
modern nation. Joseon Kingdom (1392-1897) was founded by General Yi SeongGae who toppled Goryeo Dynasty (918-1392) with a coup d'état and became the first King of Yi Dynasty of Joseon Kingdom. Contemporaneously, in China, Ming (1368-1644) was displaced by Qing (1636-1911) and in Japan, Muromachi period (1336-1573), Azuchi-Momoyama period (1568-1603), and Edo (Tokugawa) period (1603-1868) came and gone. The Regent DaeWonGun (in power: 1863-1896) who was the father of King Gojong (1863-1897; as Emperor GwangMoo 1897-1907) embarked on a 30 year closed-door policy in the late Joseon period. Joseon’s contact with the West was far later than China or Japan. Joseon displayed much less resilience in facing the issues produced by the novel situation of contact with the Western culture than in the other two countries.\(^6\) In 1897, King Gojong declared the foundation of Daehan Empire (The Grater Korean Empire) as an effort to keep independence at an equal footing with the Empires of Japan and Qing. He became its first emperor. This nominal empire came to an abrupt end when it was annexed by the Empire of Japan in 1910 during Meiji period (1868-1912) until Japan surrendered to the allied forces and Korean Peninsula was liberated in 1945. The Republic of Korea was born in 1948 after three years of provisional government with American supervision.

In order to understand the national policies of Joseon Kingdom concerning religion, education, and taxation, we should look into its heritage from the preceding Goryeo Kingdom. Goryeo had unified the Later Three Kingdoms in A.D. 936. Unfortunately powerful military generals usurped the political power often and became military dictators for decades. Toward the end of Goryeo Dynasty, the last emperor trusted a Buddhist monk named Shin Don who had disproportional influence in the court. Goryeo had a firm foundation in Buddhism and the loyal Goryeo court officials were loyal to Mongolian Yuan Dynasty (1271-1368) which held the central China but was getting weaker. The founding King Yi SungGae himself was a general of Goryeo Dynasty who overthrew the emperor with a coup d'état. In order to shake the economic base of the established aristocrats who were loyal to the emperor, General Yi had implemented land allocation system called GwaJeonJe in 1390 while he was in power during the last years of Goryeo Dynasty. This land reform continued to be the foundation of the land based reward and tax system in Joseon Kingdom. He drove the religious base of Goryeo Dynasty, Buddhism out of the city into the mountains and replaced it with

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Confucianism. He saw to it that the scholar-bureaucrats would always have an upper hand over the military generals so that his heirs would never be threatened by the military power as in Goryeo Dynasty.

Joseon became a tributary nation to Ming Dynasty in China as soon as she was founded. Joseon’s scholar-bureaucrats immersed in Confucianism and adopted a long-term strategic foreign policy of SadaeJuEue (serving the great nation by the small nation). This meant that the essence of the foreign policy of Joseon was not to fall out of favor from the big and strong nation, Ming and Qing. Western influence came to Joseon in between late 18th and mid 19th century through different channels such as the spread of Catholicism, demand for trade by foreign commercial ships, and invasion by foreign navies demanding open ports.\(^7\) The bureaucrats proscribed Catholicism as dangerous idea and thus the carrier of the new religion namely the Westerners and the Western influence were banned and persecuted.\(^8\) Joseon was not willing to open her ports until she was forced to do so by foreign forces. In 1875, a Japanese navy vessel Unyo opened fire on the western coast and in 1876 the Treaty of Ganghwa was signed with Japan.\(^9\) As a result, ChoRyang near Busan was opened and Wonsan and Incheon were opened a few years later. A treaty was signed with England in 1883 in Gyeongbok Palace after the United States (1882) and Germany (1882).

Meanwhile, England engaged in triangular trade selling her own manufactured goods to India and then selling poppies from India to Qing for silver and tea. As Qing prohibited smuggling of poppies into Qing, England provoked a Poppy War and won in 1840. With consequent Nanching Agreement, Qing opened four ports and handed over Hong Kong to England. The pressure for opening new markets in Asia as well as other continents was ever mounting after the Western countries had begun Industrial Revolution. England annexed India after winning a war with France. Between 1757 and 1857, England annexed 60 per cent

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7 In 1787 French Captain Jean Galaup de la Perouse came to measure Jeju Island (southern big island) with two ships. In 1832, an English merchant ship Amherst demanded trade with Joseon. English armada occupied a southern island GeomunDo between 1885 and 1887 for about two years. In 1866, French armada invaded Ganghwa Island (located just off shore of Incheon close to Seoul) and looted and burned GyujangGak (the royal library). In the same year, an American merchant ship General Sherman demanded trade with Joseon but was declined. In 1871, American armada invaded Ganghwa Island.

8 Western books including books on Catholicism were brought in by SoHyeon Prince in 1645. The first baptized Korean was one government official Yi SeungHoon (1756-1801) who was baptized by a Bishop in Peking while he was sent there as a part of an envoy in 1783. He was a brother-in-law of the famous Joseon scholar of pragmatism Dasan, Jeong YakYong. He brought back Catholic books and actively spread Catholicism among ruling class called Yangban.

9 Japan mimicked her own experience of opening a port by foreign force. American Navy Admiral Matthew Perry demanded to open a port in 1853 by invading Edo Bay and brought about Kobegawa Agreement with Japan in 1854.
of the Indian subcontinent. By 1856, most of India was under the control of the British East India Company and the United Kingdom was reaching out to the world market while Joseon Kingdom was adhering to a closed-door policy of political isolation and economic degeneration.

Before we compare Joseon Kingdom with the Great Britain in this paper, we should know how the United Kingdom of the Great Britain and Northern Ireland came into existence. Kingdom of England was in existence from 927 until 1707 when the Kingdom of England and the Kingdom of Scotland united to form the Kingdom of Great Britain. In 1800 the Kingdom of Ireland merged with the Kingdom of Great Britain to form the United Kingdom of the Great Britain and Ireland. In 1921 due to the partition of Ireland, only Northern Ireland remained part of the United Kingdom. The formal title of the nation was changed to the United Kingdom of the Great Britain and Northern Ireland in 1927.

3. Markets and Commerce in Joseon Kingdom

The economy in Joseon Kingdom during early modern period can be characterized as rice producing small farm economy with some handcrafted household goods and artifacts. Small farms were run on family labor. Rice and cotton were the main crops but there were some special crops for commercial purposes. The introduction of the technique of rice transplantation and other improvements in agricultural technology increased the production of rice. Chinese agricultural methods and technology spread to Joseon and Japan.

In the capital city there were shops but in the country, there were only temporary markets that were held at regular intervals. Government licensed city shops called Shijeon were located in Jongro street in the capital city called Hanyang since 1412. These shops carried items needed at the palace and public offices, luxury goods for the ruling class Yangban, and various household items in general use. The principle of one-shop-one-item monopoly was strictly enforced and selling of the monopolized item at an unauthorized shop called Nanjeon was prohibited. In return for the monopoly right, authorized shops were burdened with shop tax, contribution of labor, and responsibility for the repair of public buildings. After 17th century, Nanjeon sprouted everywhere due to the increase in production

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10 If a shop other than Shijeon sells the items registered in the city’s plan of shops (JeonAn) on its own, that shop is called Nanjeon or an unlicensed disorderly shop.
which made the practice of the commerce centering Shijeon undergo a change. Most of the prohibition on Nanjang was lifted by an enactment of TongGong or commerce of common-goods policy of King Jeongjo in 1791. These shops were in the capital city and the regions other than the capital city had markets called Jangshi at regular intervals such as a 5-day market which would form a market in every 5 days.\textsuperscript{11} Jangshi was not a standing shop but a market that would stay open for one day only but it served economic needs to take care of the agricultural surplus of the farmers and it created new social networks connecting a country side to a distant locality. The trade with foreign countries was controlled by the state in Joseon and bulk of the trade was handled by the state office. As for more formal social and economic institutions, there were no banks or joint stock companies in Joseon Kingdom as in the Great Britain at that time. Markets were not well developed in part due to the fact money was not in use until mid 17\textsuperscript{th} century.

Grains and cotton cloth were the main medium of exchange in Goryeo and also in the first half of Joseon Kingdom even though iron coins called GeonWonJoongBo were made in 996. In Joseon paper money was made in 1402 and other coins were made in later years but all failed to be utilized as money. Coins began to settle down as the money only in 1678 when SangPyeongTongBo was reinstated. By 1735 under King YeongJo, the barter economy was so rapidly receding that without the coins exchange could not take place. Farmers would exchange (rather than selling) their produce with coins so that they could buy various goods with the coins.\textsuperscript{12} There was no bank yet and the first bank in Korea was Busan branch of Japanese Dai-Ichi Kokuritsu Bank commissioned in 1878.

Taxes were taken from the local residents in accordance with the local crops and products in the name of GongMool. However, when the harvest of certain local crops fell short due to weather or other circumstances, the farmers had no alternative means to pay the taxes to avoid the persecution and plunder of the local government tax collectors. This would sometimes drive the farmers out of this locality into hiding in the mountains or even into giving up the freedom and status of freemen to subjugate themselves and their family to the mercy of local Yangban by offering to be his slaves. In 1608, DaeDongBeop or Equivalence Act was enacted to allow payment in the form of rice or cotton cloth was to be treated to be

\textsuperscript{11} It is only after 17th century when standing shop called Poja appeared in local areas. See GuksaPyunChانWiWonHoe (2007) p.32-33.
\textsuperscript{12} BiByunSaDeungRok volumn 98, December 13\textsuperscript{th} in 11\textsuperscript{th} year under King YoungJo. Re-quoted from GuksaPyunCh안WiWonHoe (2007) p.22.
equivalent to the mandated GongMool or local produce as tax. This measure not only relieved quite a burden from the farmers but also stimulated commerce in agricultural produce, handcraft, and minerals.

Around 19th century, so called disarray in three administrative taxes or SamJeongMunLan was the most serious social problem. These three types of taxes were levied on the military service obligation or corvée, on the land, and on harvested grains. Among these, the tax on harvested grains became too burdensome to the farmers. It became burdensome because of the corruption in the administration of the levying and collecting these taxes which was in part due to the unstoppable political power of the Royal-in-Law Clans. The tax on harvested grain called HwanGok was originally designed to be a grain loan system and intended to be of help to the farmers because grains were loaned to the farmers in the Spring when they ran out of all the grains from the previous harvest. The farmers were to pay back the grain with an interest of 10% of the amount of grains borrowed in the autumn when the grains were harvested. HwanGok was in implementation every year and farmers were forced to loan grains from the government regardless of their needs for the loan. And the rate of interest rose too high amounting to an exorbitant rate of interest of usury and too burdensome for the farmers and became one of the reasons for farmer’s revolt later. Farmers left the farmland for mountains to avoid taxes. Some uprooted farmers rebelled. The most well known rebel was Hong GyeongRae in 1811.

The manufacturing sector had been well established since Goryeo Dynasty. In Joseon Kingdom, there were two kinds of craftsmen or artisans. One type was the craftsmen employed by the state and the other type was private craftsmen. The official craftsmen were further classified into the artisans inside the capital city and the artisans outside the city. In the Law Code Book of Government (GyeongGookDaeJeon), 129 artisan shops in the capital city and 27 artisan shops outside the city were reported in the 15th century. Later in the 19th century, private artisan shops were developed. Products of the state artisan shops were

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13 Similar system in China called SangPyungGok was operating on the basis of the differential in price of the grain in different regions because the weather conditions differed in a wider area of the country. On the other hand, Joseon was a small country and the weather conditions did not differ much from region to region which made the Joseon’s grain-loan system rely on the storage of the grain in good year to be used for bad crop. See Park(2005, pp.54-55).

14 According to Bishop Antoine Daveluy who visited Joseon in the 1840s, the society was under cruel exploitation of Yangban class who could take properties of the commoners and incarcerate them at will. Re-quoted Jo(2002, p.64) from Rhee(2005, p.193) in Lee(2005).

15 Goryeosa, vol.8, JeAnunGongJangByeolSa. Menial work including craftsmanship and technological development was the task to be carried out by the lower class and as such it was held in a very low esteem.
supplied to the royal palace and the public offices. There were 56 different kinds of artisans or craftsmen in state-employment producing ornamental artifacts for the royalty in addition to metal works, arms, clothes, tools, and so forth. Products of private artisan shops are sold in the market.

There were some inventive minds especially during King Sejong the Great (reign: 1418-1450) and King Jeongjo (1776-1800). It was King Sejong who had the Korean alphabet or Hangeul invented and promulgated in 1443. The most prominent inventor was Jang YeongSil (1390- ? ) who invented water gauge (1441), water clock (1424), sundial, armillary spheres (1433), astronomical instruments, and others. Jang was a slave belonging to public service called GwanNo but his talents in mechanics and creativity was recognized and he was soon picked up and appointed to be a minor technical official. With his amazing inventions, he was promoted to be JeongSamPoom or bureaucratic rank of third grade. But in 1442 an unfortunate accident of the Royal Palanquin occurred. It fell apart while the King was riding in it. The King was not hurt but nevertheless Jang was blamed and punished with flogging 100 times with a Gonjang or a wide stick. He was fired and his whereabouts were unknown since then. Most of Jang’s inventions were lost during the Japanese invasion of Joseon (1592-1598).

Kim Yeong (1749-1817) was an astronomer who made horizontal sundial and wrote books on astronomy. However, after his patron and chief of the office of astronomy Seo HoSoo retired and King Jeongjo passed away, the middle tier technocrats or JoongIn group bureaucrats drove Kim away from his post because he was originally from a farming family and not from the JoonIn class like them. After leaving the office he eked by teaching children and died of starvation. There was no patent to protect the inventor’s right and to guarantee some form of return from the invention in Joseon at that time. The invention did not work to upgrade the inventor’s social status. The end of the lives of inventive and reformative minds was usually tragic. In a word, there was no incentive to engage in any inventions other than personal satisfaction perhaps at the risk of losing one’s peaceful life.

4. Social Structure and Education in Joseon Kingdom

In Joseon Kingdom, there was a hierarchy of social classes. More than anything, social esteem was regarded the most important measure of the social status in Joseon Kingdom. Social esteem was ranked in the order of scholar, farmer, craftsman, and merchant in terms of
the line of work. Formally there were two social classes YangIn (free born person) and Nobi (slave) but conventionally and in reality there were four classes in the order of social esteem: Yangban (ruling class and ruling class material), Joongin (technicians and professionals), Yangmin (commoners or farmers), and Nobi (slaves) in terms of birth-rights and social achievement. According to one conjecture based on a study of the register of a village in 1633, Yangban was about 17%, Yangmin was about 30%, and Nobi was more than half of the population at about 53%. JoongIn class was included in Yangmin and less than 2% of the population.\(^\text{16}\)

In theory, anyone out of the four classes except Nobi could become Yangban if one passed the national civil service examination called GwaGeo to be appointed as a governmental official and become a scholar-bureaucrat. However, there was one exception. The exception was that the sons of concubines of Yangban were not eligible to take that highest examination.\(^\text{17}\) The best they could do was to live a JoongIn’s life by passing a lower national technical examination called JapGwa to become a technical official such as a copier, an astronomer, a medicine man, and so forth. There were three ways to become a scholar-bureaucrat in the government. One is by passing the national civil service examination. Another one was by being appointed by the King with a recommendation of a high government official. The last one is through EomSeo which was an appointment due to the benefit of father, father-in-law, or an uncle who served in the capacity of a high scholar-bureaucrat. However, the rank to be obtained had a ceiling in this case.\(^\text{18}\)

There were two kinds of GwaGeo examination. The literary examination called MunGwa was to select the desk job scholar-bureaucrats and they were regarded with higher esteem. The military examination called MooGwa was to select the military officers of higher rank. The literary examination tested scholarly achievements from Confucian teachings. The people in the Korean Peninsula spoke quite different language than Chinese but used the Chinese characters to write thoughts and to keep records until King Sejong (1397-1450) had

\(^{16}\) It may not be quite correct to translate Yangban as nobility or aristocracy because Yangban did not have hereditary title such as duke or count in Europe. Edward Wagner (Korean Center of Harvard University)’s study was based on an analysis of the heads of households from a household register of a northern village in Hanyang city in 1663. See Hur(2008, pp.385-387).

\(^{17}\) The sons of concubines of the King could become a legitimate heir Crown Prince if there was no son from the queen.

\(^{18}\) Usually only one of the sons, sons-in-laws, or nephews is appointed to a post. Those who could not be appointed could be given DaeGa which was a nominally given paper rank. That is, nothing but the title of a lower governmental position was given to the person so that he could be addressed by an official title.
Hangeul (Korean alphabet) invented and promulgated for the public use in 1443. However, even after the promulgation of Hangeul, GwaGeo examination still was given in Chinese characters and on Confucian teachings. Thus every child of Yangban family started learning Chinese characters and the books of Confucian teachings at a very young age and was indoctrinated with the virtues of Confucian scholarship and its ethical codes.

The education of Confucian teachings was very well supported nationally. HyangGyo was established in every town and any son of Yangban class aged 15 or older could enroll in this educational institute. In the capital city of Hanyang, there were SaBuHakDang and SungGyunGwan as the highest public educational institutions. Private educational institutes known as SeoWon started to appear in 1543 and soon many similar ones flourished throughout the nation. In contrast, there were no training institutes of martial arts for the public even though there was a military examination in GwaGeo examination. HoonRyeonWon was the only institute for military training but it was for the enlisted soldiers. Even after the invasion of the Japanese, no military training school was built for the private individuals. This may have to do with the ban on the private army of the aristocrats after Yi Dynasty came to power because the private army during the preceding Goryeo Dynasty was the main source of the power of the army generals who controlled Goryeo Dynasty.

Miscellaneous technical examination called JapGwa was another area of the national civil service examination administered to select professional and technical officials but it was regarded subordinate to the literary and military examinations. The one who passed the examination was given a white plaque rather than a red plaque which was given to the one who passed the literary examination as the token of the passing. The JapGwa examination was on reading professional books (such as medicine, astronomy-astrology, law, and some other categories of technical nature), on translating foreign languages, on arithmetic and mathematics, and on copying documents depending on one’s specialization. An exact record of the number of qualified applicants for the miscellaneous technical examination has not survived but a partial record shows that for medicine 170 examinations were given and 1,553 passed during a part of the 502 year period. The JapGwa examinations were given from 1392 until they were abolished in 1894. This figure can be compared with the number of people who had passed the literary examination. For the literary examination 15,137 persons passed

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19 HanGookGoMunSeoHakHoe (2004, p.357.).
848 examinations during the 502 year period.  

It seems the political need for loyalty from the subjects and to control the military power became the basis for the political ideology of Yangban and the King. It looks as though fostering loyalty became the main criterion of setting up the educational institution in Joseon Dynasty. This ideology was wrapped in the cloth of education and rested firmly upon Confucianism. As such, understanding the education of Confucian teachings is an integral part of analyzing Joseon society. Education was the vehicle to success in Joseon society and used as a means to nurture loyalty to the King and the ruling class. The political ideology needed the backup from Confucian scholars. More important than institutions is the philosophy of the ruler or the King. Because the mission of the education was not seeking the scientific truth or literary beauty but inculcating the people to be loyal and obedient to the King and the ruling class, they did not pay much attention to the development of technology or industry. The King was the teacher and the father. All three were to be equally respected in their respective domain and referred to ‘GunSaBu Ilche (King, teacher, and father are the same).’ For the ordinary people, the political and economic exploitations were so unbearable that the only way to get out of this mire was to become a scholar-bureaucrat or a government official even if it was a petty official. And to achieve that was through passing GwaGeo examination. Thus the people must learn to be loyal, courteous, and filial to the King, to the teacher, and to the father. Loyalty and courtesy were the most valuable virtues in Joseon society that opened the gateway to the Yangban class to become a respectable freeman and to be a part of the ruling class.

5. Institutional Differences in Joseon Kingdom and the Great Britain

According to North (1981, 201-202), “Institutions provide the framework within which human beings interact. ... Institutions are a set of rules, compliance procedures, and moral and ethical behavioral norms designed to constrain the behavior of individuals in the interests of maximizing the wealth or utility of principals. ... [A]gents work for principals.” In Joseon Kingdom, the principal was ostensibly the King but in reality the ruling class Yangban was the principal as the clan based Royal-in-Laws wielded power after the death of King Jeongjo. All the other classes were the agents working for Yangban.

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20 The researchers collected the list of roaster called BangMok of those who passed the exam from various sources. See HanGookGoMunSeoHakHoe (2004, p.377-378).
Institutions which made the society work hard and reap handsome rewards from the hard work could drive it to endeavor more and more efforts to inventing new productive devices and machines while institutions which could not protect the output of the efforts would linger on as a stagnant society. The Great Britain was rather innovative in allowing the voice of the people heard through its early development of parliamentary system which had a tremendous impact on the economic workings of her factories and the economy. We have seen in the preceding sections that the institutions in Joseon society were detrimental to Industrial Revolution or economic growth for they did not provide the proper incentives for individual efforts and creativity. No spontaneous industrial entrepreneurship could sprout in that barren Joseon soil.

Industrial Revolution in the Great Britain started from textile industry which had many inventions and technological innovations. Notable invention such as John Kay’s flying shuttle started to appear from 1733 and continued intermittently until late 1800s. As technology advanced and applied to the process of production, many factories were built. According to Allen(2009, p.238) “British culture developed in a distinctive way that increased the propensity to invent and led to the Industrial Revolution” in addition to human capital accumulation. The latter was possible due to the scientific revolution preceding the ‘industrious’ revolution and Industrial Revolution. However, the working conditions in the factories were too inhuman at the beginning and many laws were enacted to alleviate this condition. The laws concerning working conditions began to be enacted from early 1800s. Some of the major laws legislated were the Health and Morals of Apprentices Act in1802 and the Factory Act in 1833. The law in 1802 limited the hours of work to 12 per day with no night work allowed. Employers were required to provide education, decent clothing, and accommodation. The law in 1833 prohibited children under 9 years working in factories. Children under 13 years should not work more than 9 hours per day and 48 hours per week. No children under 18 were to work at night. Old Poor Law was enacted in 1601 by which overseers of the poor were appointed and helped the poor. These are only a few examples that show how the leaders in that society took interest in the wellbeing of the underprivileged. In Joseon Kingdom HwanGok was a kind of social insurance to help the farmers in need but its implementation was distorted and its function failed by the corrupt officials in late Joseon period.
There were many obstacles and institutional constraints to any spontaneous endeavor for industrial development in Joseon society. The economic and technological aspects of Joseon Kingdom and the social and educational constraints in that Society are summarized into 12 categories and contrasted with comparable aspects in the Great Britain in Table 1.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Great Britain*</th>
<th>Joseon</th>
<th>GB</th>
<th>Joseon (1392-1897)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPR</td>
<td>Patent / ‘Statute of Monopoly’ 1623</td>
<td>No patent</td>
<td>None</td>
<td>Ruling Class</td>
</tr>
<tr>
<td>Social Status/Honor</td>
<td>High</td>
<td>Low</td>
<td>Nobility</td>
<td>Birth Right/ Confucian Order</td>
</tr>
<tr>
<td>Technology</td>
<td>Welcome/Trade</td>
<td>No interest</td>
<td>None</td>
<td>Literary Scholar-Bureaucrat</td>
</tr>
<tr>
<td>Mercantilism</td>
<td>Trade/Market</td>
<td>Scorned</td>
<td>King</td>
<td>Confucianism</td>
</tr>
<tr>
<td>Foreign Influence</td>
<td>Open/Trade</td>
<td>Closed</td>
<td>None</td>
<td>Ruling class</td>
</tr>
<tr>
<td>Capital</td>
<td>Gold &amp; Silver from Colonies</td>
<td>Scarce/No Bank till 1878</td>
<td>None</td>
<td>Confucian Outlook</td>
</tr>
<tr>
<td>Monetary system</td>
<td>Bank 1694</td>
<td>Money not in use</td>
<td>None</td>
<td>Supply of Metal</td>
</tr>
<tr>
<td>Taxation</td>
<td>Light</td>
<td>Heavy</td>
<td>None</td>
<td>Collectors</td>
</tr>
<tr>
<td>Education</td>
<td>Open</td>
<td>Closed</td>
<td>Religion</td>
<td>Confucian Ethics</td>
</tr>
<tr>
<td>Ethics</td>
<td>Modern Work Ethic</td>
<td>Loyalty</td>
<td>Religion</td>
<td>Confucianism</td>
</tr>
<tr>
<td>Policy Support</td>
<td>King</td>
<td>None</td>
<td>None</td>
<td>Ruling class</td>
</tr>
<tr>
<td>Property Right</td>
<td>Secure</td>
<td>Uncertain</td>
<td>Law</td>
<td>Ruling class</td>
</tr>
<tr>
<td>Sum Total Impact</td>
<td>Conducive</td>
<td>Discouraging</td>
<td>Not Much</td>
<td>Philosophical, Political, Institutional</td>
</tr>
</tbody>
</table>

* Kingdom of England(927-1707), Kingdom of Great Britain(1707-1800), United Kingdom(1800- ;1927- )

There were not enough incentives for a JoongIn or a middle-tier technocrat to devote himself to any invention or new technology. There was no intellectual property right (IPR) or patent as in the Great Britain to protect the inventor’s rights. No social recognition or upgrading of the inventor’s status was to be expected. All the commercial activities were regarded with disdain especially by the ruling class of scholar-bureaucrats. The prevalent rank order of social esteem accorded to the line of work was scholar, farmer, craftsman, and
merchants. In Joseon Kingdom, mercantilism could not take root. Merchants were regarded to be parasites of the society and instigators of consumption of luxuries. Scholar-bureaucrats despised the merchants. The government did not encourage commerce and trade and thus commerce did not flourish enough for large capital to accumulate. Land and farming were the biggest sources to accumulate wealth. But taxes on land and on commoners were too heavy because the rates could be determined by the local governors almost at will. Money was not used in transactions until the 17th century and there was no bank until the late 19th century.

In the Great Britain, patent was included in the Statute of Monopoly in 1623 under King James I. The system of patent was improved during the reign of Queen Anne (1702-14). Now it was required that a written description of the invention was to be submitted to the government office. However, the monetary gains were not much according to Clark (2007). For example, even James Watt (1736-1819) who obtained a patent for an improved version of the Newcomen steam engine could, only after many unprofitable and frustrating years, eventually reap a handsome profit from his invention. The English society did not despise the professionals and engineers.

The King of Joseon Kingdom did not support any mercantilistic expedition or commerce while the King of the United Kingdom supported mercantilism. For the Great Britain, it was a way of life to trade with foreign land with ships since the Great Britain is composed of islands. East India Company was founded in 1600 and trade with Asian countries expanded. In the 17th century, England began to found colonies in North America and the West Indies expanding her trade further. A trading post was established in Canton, China in 1637. Since the need for more convenient form of the medium of exchange arose out of long distance trades, promissory notes of goldsmiths became convenient predecessor of money for the merchants and tradesmen until the Bank of England was founded in 1694. Much later in 1883, the United Kingdom signed a trade agreement with Joseon Kingdom. They could accumulate lots of gold and silver from trades in colonies and from the slave trades to be able to accumulate the necessary capital for industrial revolution. On the other hand, Joseon, as a peninsula, did not have as much need for the trade with foreign countries and refused to open ports. Only after Japanese naval attack in the previous year, Joseon was forced to sign a trade agreement with Japan in 1876.

Clark (2007, pp.235-236) points out that the innovations quickly leaked to other producers and the reward to the originator was very little or nothing more than the ordinary profit.
In Joseon, education was geared to preparing for the national civil service examination GwaGeo. The primary purpose of education was to teach the right ethics and literary skills to be able to pass GwaGeo examination. If one passes the examination and gets an appointment as a scholar-bureaucrat, one’s social status is secured. The main theme of the education was to teach Confucian ethical codes. The right ethical code was to be loyal to the King and to be respectful to the teacher and elders and to show filial piety to the parents. In the Great Britain in the 17th and 18th centuries, the education was relatively free and accessible to the public. It was not for the purpose of preparing for a national civil examination. The education was based on Christianity.

According to North(1981, p.159), industrial development was not triggered by a few significant technological inventions alone. For Industrial Revolution to be successful, the acceleration in the rate of innovation must follow. The acceleration of innovation was made possible through “better specified property rights which improved factor and product markets.” The property right was respected with well functioning legal system in the United Kingdom of Great Britain but in Joseon Kingdom, the property right was not established firmly. For one thing, the legal system was a part of the administrative system. The mayor or governor of local provinces had the power of a judge. Only the capital punishment was to be reported to the King beforehand and wait for his approval. There were incidences of abuse of this capacity by corrupt mayors and governors. This meant that the verdict of any litigation involving properties could be quite different from province to province. This also meant that the property right of the ordinary citizens was not properly protected by the government. If property right was uncertain, then there was always the risk of losing the fruit of one’s labor which translates to losing incentives to work hard. In Joseon, acceleration in the rate of innovation never took place due to Yangban class who took the law in their hands which was the very institutional constraint.

6. Concluding Remarks

The King of Joseon Kingdom had two major constraints. Externally, Joseon Kingdom had become a tributary country to China after the three-Kingdom period was over in 10th century. As such, the King had to be cautious not to arouse any Chinese suspicion by engaging in any technological or industrial projects. Internally, King’s treasury was not rich
enough to sponsor such technological venture. Moreover, even if there was enough private capital to finance such venture, there was the risk of being accused of treason by undertaking a new technological venture because technological development may be regarded as a threat to the stability of the King’s sovereignty. The commoners were not free to take enterprising projects without King’s blessing. The social institutions of Joseon Dynasty and strictly defined social classes deprived Joseon Kingdom of the entrepreneurial spirit and the opportunity to develop human capital necessary for Industrial Revolution.

The total effect of social environment and institutional constraints in Joseon Kingdom in the 17th through 19th centuries was that there was little incentive for Joseon people to strive for industrial development while the social conditions and institutional arrangements in the Great Britain were incentivized for Industrial Revolution. The institutional differences in these two Kingdoms may have contributed to the Great Divergence of economic and social development between the two kingdoms.

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*The publications are in the Korean language unless noted otherwise.


**European History**


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National Institute of Korean History

http://sillok.history.go.kr/main/main.jsp

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