



## Private Property Rights, Legal Enforcement and Economic Prosperity: The Fall of Early Civilized China and the Rise of United Kingdom in 18<sup>th</sup> -19<sup>th</sup> Century

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### Abstract

Having a glance at the historical sites such as Bing Ma Yung, Great Wall, Forbidden City, watching movies of history about China, flipping pages of stories about ancient China, China was once the most powerful nations. Nevertheless, industrial revolutions in 18<sup>th</sup> -19<sup>th</sup> century countries miles away improve the skills of industries, making the Great Britain as the most affluence countries at that time. Well developed private property rights and legal system has provided a superb environment for inventors.

**Keywords:** Property rights, Legal enforcement, Economic prosperity, China, United Kingdom

### 1. Introduction

History of China can be dated back to the period of Three Sovereigns and Five Emperors in about 5,000 years ago which is supported by archaeological records. China is one of the world's oldest early civilizations. Turtle shells with Chinese writing in Shang Dynasty dated to around 1500 BC (Wikipedia, 2008a). Nevertheless, whilst industrial revolution led to the success among European countries, China's economic growth started to fall behind. While Malthus once regards the security of private property as "among the most important causes which influence the wealth of nations." (Malthus, 1820), the existence of patent, a kind of private property right has become one of the key factors which lead to the success in industrial revolution. Private property rights exist as if the owners has (1) the right to exclude the other people so that the private property owner alone can decide on its use (2) the right to extract an exclusive income, and (3) the right to transfer or exchange the property as he thinks fit (Cheung, 1983). The economic success brought about by innovative technological breakthrough during industrial revolution (1700 to 1850) was deal largely to the presence of patent system. Frankly, nobody has incentive to invent something if the fruit of innovation does not belong to the one who spent time on invention. Protection of private property right on innovations requires good laws. Legal regulations and enforcement has long been regarded as an important factors in business development, it not only affects the development of real estate developers in modern times (Li, 2008b, 2009), it also determines the economic development in times of industrial revolution.

### 2. Background: UK and China in 18-19<sup>th</sup> century

18<sup>th</sup> – 19<sup>th</sup> century was the turning point in UK's economy; it marks the beginning of modern time. Great innovations improve human life and lead to economic prosperity. Generally speaking, there were 2 phrases of modern inventions in UK. The first was dominated by coal, iron and steam which fell between 1700 and 1850. The second phrase was associated with steel, internal combustion engine and electricity started from 1850. Both two period of time demonstrated that advances in technology cannot by themselves lead to industrial growth. Striking progress, however, can be achieved in short period of time if entrepreneurs have the willingness and ability to recognize and apply useful new ideas and inventions (Henderson, 1969).

#### (Table 1 here)

One of the major revolutions in history happened in no more than a hundred years. Hand tools were substituted by heavy-duty machines. Output of coal, Pig-iron and raw-cotton increased greatly over the short period of time (Table 1).

It is undeniable that technological progress had been a powerful stimulus in the early growth of the British manufacturers (Henderson, 1969) and economic progress in 18<sup>th</sup> to 19<sup>th</sup> century.

19th century in China under Qing control was weak and economic prosperity diminished (Wikipedia, 2008b). When the Chinese reformer Huang Tsun Hsien visited London in the 1890s, it was unbelievable that, within only one hundred years' time, the economy of homeland China and that of Britain had basically born a similitude to one another (Henderson, 1969). Indeed, China suffered from economic problem and great population growth. All these increased strain on the food supply. Under traditional Chinese culture, the emperor had the rights to rule "all under heaven". All the inventions and innovative ideas belong to the emperor (Wikipedia, 2008b).

### 3. Literature Review

#### 3.1 *Determinants of economic development: private property rights*

Previous research suggests that the key factors of economic development are physical and human capital accumulation and improvements in technology. Famous economists John Mill stated that "productions will be limited by the amount of their previous accumulation, and ... will be proportional to their energy, their skill, the perfection of their machinery, and their judicious use of the advantages of combined labour"(Mill, 2001). Neoclassical growth school of thought stresses on physical capital accumulation (Heitger, 2004). Although the neoclassical growth theory (which regards technological know-how as exogenous and a constant in production function) has dominated the field for quite a long time, academic researchers in economic geographers and regional science have emphasized the importance of technology in structuring and restructuring regional, national and international economy. Economist Joseph A. Schumpeter emphasizes the role of innovations and inventions in economic development as in 1930s. Endogenous growth theory has also stressed the strategic role of technological progress in economic dynamics over time and international space. In view of these, governments at various levels across different parts of the world spend large amount of resources in inventions and innovations to speed up regional economic growth and to increase national and international competitiveness (Sun, 2000). After all, the key question is: What is the major factor which speeds up capital accumulation, innovation and technological improvements which cause economic growth ultimately?

As Hayek (1949) comments "self interests represented the universal mover. The worth of a state in the long run is the worth of the individuals who help compose it (Mill, 2001). Current researchers think that the major ingredient in economic growth and innovation is incentives, which strappingly depend on private property rights system. Such rights can enable the sources of production attain their utmost degree of fecundity. If the government itself or the sovereign power "practices robbery," property will become a pure "mockery." Without the protection of private property rights, "it is impossible to conceive any considerable development of the productive power of man, of land, and of capital; or even to conceive the existence of capital at all" (Say, 2001). Indeed, nobody will have an incentive to invent something if he does not have the right to generate income from his innovation. It is undeniable that efficient use of resources requires secure property rights. Traditional growth theory, however, never mentions the importance of private property rights which is quite obvious not true in reality (Heitger, 2004).

Though private property was viewed with growing distrust in the middle of 18<sup>th</sup> century, the fall of the wall between Western and Eastern Berlin, Russia Empire etc Europe in real life history has proven the importance of private property rights. During the Mao's period in China, there was an old saying "a man who does his own job earns \$36, a man who does not does his job also earn \$36" There was no incentive to do job during that period of time, economic development nearly stopped as the right to generate income was absence.

#### 3.2 *Patent as an example of private property right and economic development*

Mises, Demsetz, and Pejovich propose that folks respond to the resource scarcity problem because they are aware of the presence of property rights and want to do something about it (Beaulier & Pritchitko, 2006). "The original idea of patent was to "facilitate and encourage disclosure of innovations into the public domain for the common good". The existence of patent is a typical example of how private property rights enhance human prosperity. Patent owners has (1) the right to exclude the others (2) the right to extract exclusive income from patent and (3) the right to exchange (Cheung, 1983). Patent provides the fundamental incentive for research and development. Without patents, corporations would be much more conservative about the R&D investments they made, as third parties would be free to exploit any developments (Wikipedia 2007).

### 4. Objective of the study

"Commerce and manufactures can seldom flourish long in any state which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law" (Smith, 2000) While Malthus perceived private property as the most important causes which determine the wealth of nation (Beaulier & Pritchitko, 2006), this paper aims at reviewing the impact of patent (as one of the examples of private property rights) on economic developments during industrial revolution.

#### 4.1 Research method

'Research method' refers to the tools which are used to gather and analyze data (Cooper & Schinder, 1998). As Merton commented "it is through originality, in greater or smaller increments, that knowledge advances (Lamont, 2009), extensive literature review has been carried out. To study the impact of patent on economic development, historical data (15<sup>th</sup>-17<sup>th</sup> centuries) on output of coal, pig-iron and raw-cotton in UK has then been collected.

### 5. Results and discussions

No great mechanical inventions had been introduced before 1760 during the old industrial system in England (Toynbee, 1920). Nevertheless, technological innovation was at the heart of the industrial revolution. Granting of patents to inventors by the UK government was considered as an essential factor in thought-provoking innovative technological breakthrough and ultimately economic prosperity.

The end products of patents on the industrialization development are clearly demonstrated in the history of the steam engine, the major technological breakthrough which marks the beginning of industrial revolution. In return for an invention, James Watt received the patent for his steam engines which increased the pace of technological development at that time. The improved steam engine invented by James Watt was at first primarily used for pumping out mines. Starting from the 1780s, however, it was applied for generating power for machines. This enabled efficient semi-automated factories on a previously unimaginable scale in places where waterpower was not available (Wikipedia 2007). Because of this, production of coal has increased greatly from 1660 to 1800 (Figure 1).

**(Figure 1 here)**

Another example was Henry Cort who invented ironmaster. During the Industrial Revolution, Cort refined iron from pig iron to wrought iron and got his patent in the grooved rolling process in 1783 and balling or puddling furnace in 1784. Cort set up his iron works in Fontley, the place where he developed his ideas. (Wikipedia, 2007) Such innovative invention greatly increases iron production (Figure 2).

**(Figure 2 here)**

Without barriers, innovators may even have the incentive to over-accumulate knowledge Sustained levels of income and growth rely on innovation and adoption of new technologies, which in turn require the accumulation of human capital (Marimon & Quadrini, 2006).

In the 18th and 19th century, there was no incentive system like patent for inventor in China. All the innovations belong to the "son of God" – the emperor. China's first law in the area of patent right was issued by the late Qing government in 1911 and revised in 1923. Under this law, newly unique inventions were protected for a period of 5 years but were issued to Chinese nationals only or by treaty to foreigners. Chinese patent law system grants exclusive rights to patentable invention, utility model or design to the first party to file a patent application. This is sharp contrast to the system in UK, which issues patents on a first-to-invent basis. Patent protection is therefore denied for any invention that has been disclosed in a publication anywhere in the world or has been used or made known to the public before the filing date of the application (Hill & Judith, 1993). May be, all these explain why scientific innovation in China at that period of time can not be comparable to those in UK.

As self-interests determine people's normal action: to contribute his or her effort as much as possible, people contract to set up institutions to enforce stable, define entitlements to scarce resources with a view to smooth the progress of investment, production, and exchange. Thus, contracts which constitute private property rights and institutions pave the way those contracts dealing with existing property rights; both can be conceived as market transactions made in pursuit of gains (Getzler, 1996). After all, "if private property were adopted, we must presume that it would be accompanied by none of the initial inequalities and injustices"(Mill, 2001). Academic researchers such as Weber had stated the significance of the role of lawyers and law in creating property rights stability and contract enforcement predictability via formal bureaucratic rule, whereby chosen norms were applied on purpose, rather than traditional norms by means of "age-old rules and powers", so as to resolve conflict and generate order (Getzler, 1996). The object of enforcement is to achieve a level of compliance with a set of behavioral rules that society believes it can afford (Stigler, 1970). While private property rights provide the certainty and incentive necessary to free people from having to protect their possessions and to make them willing to invest resources in fixed locations for production which brings people to work harder for themselves and their families than for needy humanity in general, officials should enforce private property in whatever tangible or intangible resources they wish people to produce in greater quantities accordingly. Development of national wealth in the last several centuries is almost entirely associated with the development of strong private property systems. Private property rights sometimes imply the lawful boundaries that protect the object. An adequate legal system of property law includes formal ways of determining the extent of property boundaries and providing enforcement against and compensation for harmful crossing. Tort law, criminal law and government regulations provide the function. Contract law and commercial Act specify the rules by which owners exchange objects in a private property-based legal system (Reed, 2006). As Hayek mentioned "the aim of the rules of law is merely to prevent, as

much as possible, by drawing boundaries, the actions of different individuals from interfering with each other,” (Hayek, 1973). Any system of private property rights require state enforcement: to protect such rights from forced occupation, invasion and embezzlement (Epstein, 2005). Adam Smith also stated that “Commerce and manufactures can seldom flourish long in any state which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law” and “The first and chief design of every system of government is to give each one the secure and peaceable possession of his own property”(Smith, 2000).

People often misunderstand that there legal enforcement does not exist in Chinese history. As a matter of fact, the history of law in China is quite long. Its legal system has been established in early Qi'in dynasty (221BC - 206BC). The well-known story of Sheung Yang who was killed by the law established by himself is one of the most famous evidence on the existence of law in China. Nevertheless, there is no set of rules which ran through two dynasties in history--different set of laws and regulations were written and designed particularly for different emperors. There was Han Law in Han Dynasty (206 - 220), Tang Law in Tang Dynasty (618 - 907) and so on in Chinese history. As Chan commented that “Chinese had their rule of law many years ago.” (Chan, 1997). Fa (legal), however, is to be employed as a last resort to maintain social order when li (propriety) has failed to do so. This can be explained by its own culture. Confucius commented “If the people be led by virtue and uniformity sought to be given them by punishments, they will try to avoid punishments but will have no sense of shame. If people are led by virtue and uniformity sought to be given to them by the rules of property they will be ashamed and will become good.” (Bhatia, 1974). In fact, when we read the history of law in China, legal rules and regulations were perceived as an important apparatus of emperors to protect their own rights and powers. Civilians' rights are deprived. People are often of the view that the one with high social status should not be punished. (B. C. Chan, 2007) It was a common phenomenon that the one with lower status in the organization to be punished instead of the head of the companies. Bribery often helped the affluent or the people in high social status to escape from penalty. From this perspective, even patent exists in ancient China, such inequalities and inadequacies in law cannot enforcement the private property rights systems well. The rich or officials in higher social status still can rob the fruit of the inventors easily.

In United Kingdom, however, Carta 1215 had clearly stated that the rule of law control the power of the emperor which served to prevent the emperor abuse his power. Besides, as people in the Western World do consider fairness as an important value, for example, all people were equal in a court of law (Li, 2008a). All these ensure smooth of private property rights enforcement.

## 6. Conclusion

The secure and transferable property rights are the key to economic efficiency and wealth. Legal definitions of rights and responsibilities based on firmly understood private property rights are the major instrument for economic progress while at the same time ensure the sustainability of production. (Heitger, 2004) It is undeniable that private property is the goose which lays the egg of wealth of nations. The existence of patent, as a kind of private property rights, protects the hard work of the inventor. With the presence of this, inventors have the incentives to do invention since he can generate income from it. Looking back, patent has stimulated innovation activities which lead to the industrial revolution in UK. At that period of time, inventors in China cannot enjoy the fruit of their inventions. All the innovative ideas belong to the emperor. Potential inventors spend time on studying to secure a job as a government official rather than spending time on scientific inventors. It was until the conquered of the major cities in China, officials start to think of some possible ways to stimulate scientific innovations when patent was introduced in 1911. Enforcement of private property rights have become another important issue. Although there are patent system in China nowadays, many newly inventions were copied by the others in a very short period of time. Clearly, nobody will follow the rule if enforcement is absence, inadequate or injustice. Issuing patent without enforcement is only a kind of waste.

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Table 1. Output of coal, pig-iron and raw-cotton in UK (Henderson, 1969).

Product	Output(Year)	Output(Year)
Coal	>3 million tons (1690)	10 million tons (1790)
Pig-iron	17,000 tons (1740)	250,000 tons (1806)
Raw-cotton	1 million lb (1743)	60 million lb (1802)

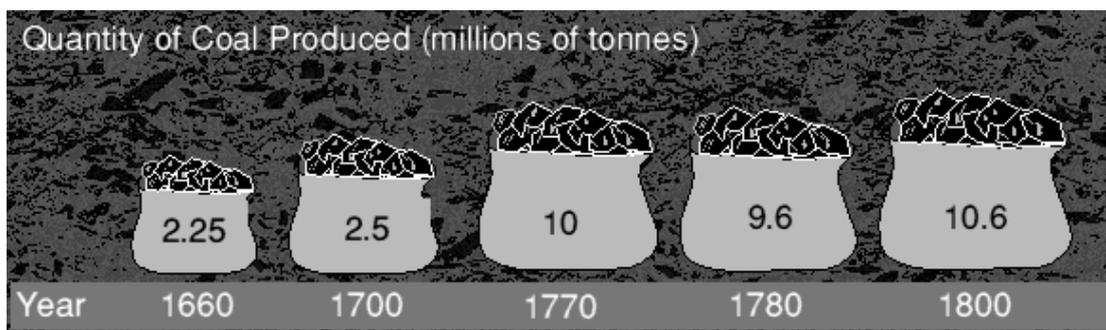


Figure 1. Quantity of Coal Produced from 1660 to 1800 Source: Anglia Multimedia (1995)

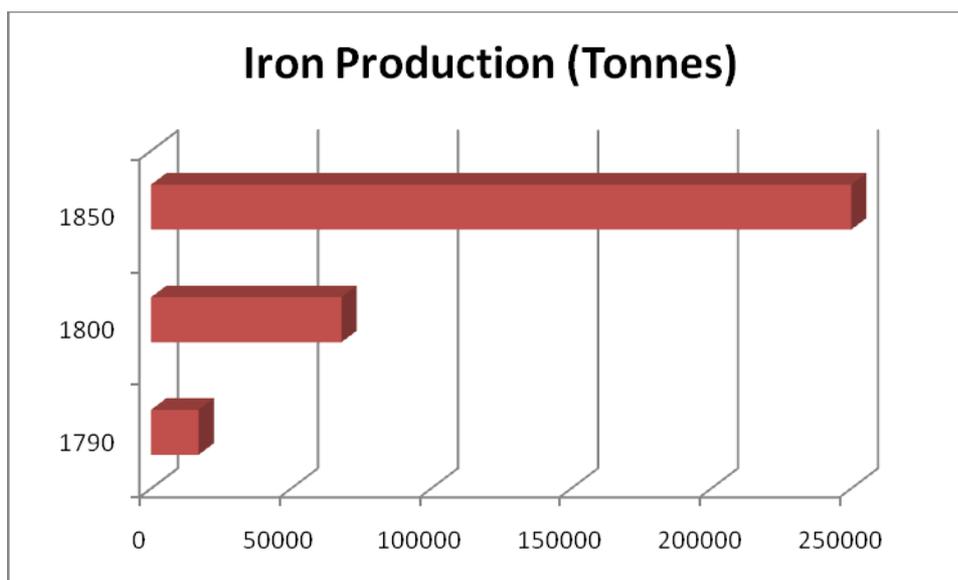


Figure 2. Iron production in 18th and 19<sup>th</sup> century from 1740 to 1790 (Anglia Multimedia, 1995)