July 27, 2017

Land, Patents and Copyright

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Sec 8 The Congress shall have power To promote the progress of science and useful arts by securing for limited time to authors and inventors the exclusive right to their respective writings and discoveries. Constitution of the United States. 1789.

Patents Resolve an Empty Core

It is reasonable to ask a new theory for new evidence to support it. Otherwise, little if anything could be gained by incurring the cost of learning about it. The gain from a new theory is most striking when an old familiar fact is shown in a new light as evidence for the new theory. Patents are my candidate for this purpose to support the theory of an empty core.

Situations that result in an empty core inspire remedies to resolve them. An invention creates a conflict between the local and public interest. Unless the inventor could prevent others from using his invention, his invention gives him little or nothing. Yet the invention may produce a considerable public benefit but one not commensurate to the cost incurred by its inventor. Core theory describes this conflict. Core theory also gives a resolution. The resolution creates property rights to inventions in the form of patents.

The chronometer invented by John Harrison is a dramatic example. He spent 50 years working on his invention in the 18th century with the hope of winning the prize of £20,000 if successful. Even after repeated demonstrations of success, he did not receive the prize until after the intervention of King George III in 1772. (Brown, 1949, chap. VIII)

An inventor who has found something new and useful could keep it secret for his private benefit especially if others could copy and use his invention at less cost than making the discovery on their own. Now the remuneration of the inventor falls far short of the cost of his invention. This is the archetype of an empty core. The remedy was creation of a new form of property, a patent. Economic theories often take property rights for granted. This is mistaken.
The Prize Schedule Offered by Parliament in 1714

£10, 000 for any device that would determine the longitude within 1 degree
£15, 000 for any device that would determine the longitude within 40 minutes
£20, 000 for any device that would determine the longitude within 30 minutes
(Brown, 1949, p. 227)

Core Theory

Consider an economy consisting of producers and their customers who can form coalitions. The value of a coalition is the net benefit defined by the difference between the value of the outputs to the buyers minus the cost of these outputs to the producers. The members of a coalition obtain a return bounded below by the net value of these outputs. It may be helpful to think of the members of the coalition as shareholders, owners, of the producing enterprises who also are the buyers of its outputs. The grand coalition includes all these buyers and producers. The total return is bounded above by the net value of the outputs of the grand coalition. The individuals can form coalitions and move among them seeking the best terms. Each coalition compares what it can assure itself to what it would get in the grand coalition. The returns to all the individuals is an imputation of the returns it would get in the grand coalition. It compares this total with what the coalition could assure itself. The global optimum is the imputation of the grand coalition. There is a core when no coalition can do better on its own than its return in the imputation from the grand coalition. A local optimum is the return to a coalition which is a subset of the grand coalition. When the local optimum is bigger than what it would get in the imputation from the grand coalition, the conflict means the core is empty.

Property Rights to Land in England

In the feudal system only the sovereign and the Church held property rights in all the land in the kingdom. In 1066 William conquered England and rewarded his noble companions with fiefs. They bore the title baron but they did not own the land. They could not sell it, transfer it, will it to their heirs or handle it as their own property in all the ways familiar to us. It goes without saying that in the feudal age commoners could not own land. Peasants were serfs bound to the land they worked for their lord. Agriculture was dominant. William ordered creation of the Domesday book. “It was a general survey of all the lands in the kingdom, their extent in each district, their proprietors, tenures, value; the
quantity of meadow, pasture, wood, and arable land which they contained, ... .” (Hume, 1983, vol 1, p. 221). Tradesmen congregated in villages on the lord’s estate. Trespassing on the King’s land was punished severely.

No formal event marks the end of the feudal age akin to the Magna Carta in 1215 during the reign of John. However, an important change did occur during the reign of Edward I, entail. This gave the nobility the right to pass title to their land to their heirs. It forms a huge reduction in the power of the sovereign to control ownership of the land. It is the event that begins the modern treatment of property in land. Extension of property rights in land to commoners was gradual. It would not be far from the mark to estimate it took 500 years.

**Property in Intangible Assets**

Although property rights adhered only to physical objects besides land, it still took centuries to describe them well enough to make them enforceable. A revolutionary change was conferring property rights to inventions. Even so, only a working model of an invention was eligible for these rights. Property rights in an idea would be costly to protect. Patent infringement even for a mechanical device is harder to prove and prevent than trespassing.

Because a patent confers a temporary monopoly to its owner, critics claimed this more than offset the benefits accruing from the invention. The marine chronometer yields an indisputable public benefit. The remedy to secure the benefit without incurring the loss of monopolistic exploitation suggested using a prize as the inducement to inventors. While the prospect of winning the prize seemed successful, the temptation of the government committee who managed the prize to renege once the invention had succeeded was irresistible. The government left the race for success and the prizes to the winners unconstrained apart from setting a limit on the duration of the property right. The patent race may have been won more often by lawyers than by inventors.

**References**
