

spread of knowledge by defining it as property, thus controlling the pace of industrialization and keeping all the economic benefits of innovations to themselves.<sup>8</sup>

Early modern patent law did not distinguish between inventors on the one hand, and introducers of skills, devices, or processes from abroad on the other. In fact, in the precapitalist world, introducers enjoyed greater privileges than inventors. Rewarding local inventors was at the complete discretion of rulers. Princely control of movement between localities meant that inventors had no other choice except to try and use their invention in their home countries and be exposed to technological piracy. Foreign know-how, however, was beyond the control of rulers, who had to find ways to attract it. Countries offered inducements to immigrants who would dare to violate restrictions on the dissemination of knowledge and transplant themselves and their skills. Rulers believed that imported technologies could convert their nations' natural resources into valuable international assets and swing the import-export ratio in their favor. The battle over the diffusion of technology, then, became an integral component of European nations' economic and political competition.

England led the way in adopting the practice of awarding patent monopolies to foreigners to entice them to introduce skills or processes without checking whether they were the inventors in their countries of origin. English patents, in fact, were originally granted to introducers rather than inventors. During the reign of Edward III, in the fourteenth century, letters of protection from competition were given to foreign artisans, in order to entice them to settle in England and teach their English apprentices their trades. Two hundred years later, during the reign of Elizabeth I, the exclusive right to the use of a particular imported innovation for a period of years was added to the patent grant. Patents of importation preceded patents of inventions because of the widespread belief in the superiority of

continental technology and the desire to replace imports and correct the balance of trade—the premier barometer of the strength of nations in the mind of mercantilists.

The English state did not grant patents to inventors until 1623, when James I issued the first patent for an invention that secured the patentee a fourteen years' production monopoly. The following year Parliament passed a statute regulating the practice of rewarding invention, though royal cash rewards and patents of importation to introducers of new technologies persisted.<sup>9</sup> Even though the direction of industrial espionage was reversed by the second half of the eighteenth century, the English policy of encouraging the appropriation of smuggled technology persisted. As late as 1778 the British courts upheld the legality of patents of importation. The Swiss inventor John Liardet and the English assignee of his patented stucco sued John Johnson for violation of the patent and for pirating the knowledge through inducement of workers to switch employers. The case of *Liardet v. Johnson* was tried twice, and both times the English judge and jury sided with a foreigners' patent of importation over an English claim. The British policy remained by and large unchanged until 1852 and was highly successful. England attracted skilled European artisans in sufficient numbers to turn it from a technological debtor nation into the world's center of industry and innovation.<sup>10</sup>

English support of technology piracy was not unique. Continental governments realized the value of technology and set out to promote technical improvements by attracting new industrial skills and modernizing machinery. Departments of state in most continental governments acted as ministries of industrial development. Official emissaries acted as undercover labor recruiting agents in their host countries, endeavoring to induce craftsmen to emigrate illegally to the countries they represented. By the same token, they tried to preserve their technological advantage by preventing competitors