

However, the appropriable rent is much smaller for a *minor* or *run-of-the-mill* innovation, also called a *nondrastic* innovation, which results in a small price reduction. Note that most of the patented innovations tend to be marginal improvements over existing products and processes. In this Paper, like most of the literature, the focus is on small or "run-of-the-mill" innovations.

The nature of competition in the innovation industry and the degree to which the patent permits market exclusivity, determine how much rent can be appropriated by the patentee. In a process innovation industry, consider two competition structures and two possibilities of exclusivity. First, take a monopolized innovation industry which has a unique innovator with effective patent exclusivity rights. Clearly, the monopolist innovator can capture all the rent that can be appropriated. A longer patent term would increase its incentive to do R&D. Second, suppose that imitators can "invent around" the monopolist innovator's patent. The longer the patent term, the greater the rent and the faster imitators move in and nibble away at an innovative monopolist's profits. From society's point of view, any lengthening of the patent term simply dissipates appropriable rents. Third, consider the case of easy entry in the innovation industry and effective patent exclusivity. The competition in the production of innovations ensures that firms race to patent the innovation. Patent races mean that rivals are duplicating R&D, an activity wasteful from society's point of view. A longer patent term, in this case, will increase the pace of R&D. Innovations will be patented sooner rather than later. This will entail a misallocation of resources in the economy and an erosion of appropriable rents from the patent. Finally, easy entry by innovators and the presence of imitators around the patentee would imply that all the appropriable rents will be competed away. From society's viewpoint, in order to channel an efficient level of resources to the innovation industry, it is necessary that as much appropriable rents as possible are preserved. In the non-trading, perfectly competitive economy model, the longer the patent term or the broader the scope of the patent grant, the greater is the fraction of surplus which can be appropriated by innovators and the greater is the value of innovations which will be forthcoming.

One aim of patent policy is to preserve rents long enough such that innovators find it attractive to invest in R&D and bring it to an efficient level. To reach the socially optimum level of R&D, the private marginal cost incurred by innovators would have to equal the economy-wide (or social) benefits. Therefore, the patent policy must aim to minimize the dissipation of rents. To determine the optimal patent term, we simply find that point in time up to which the level of R&D has not achieved the efficient level from the entire economy's point of view. Such a situation exists when, at the margin, costs imposed by monopoly pricing by the patentee equal or exceed the potential benefits in the entire economy from the diffusion of the patented innovation.