

CHAPTER 2

Genetic Patent Statistics as Indicators

As discussed in Chapter 1, the patent regime is believed to promote the progress of science and technology by providing incentives to inventors and investors in the form of exclusive rights. Through these incentives, the patent system encourages investment for R&D, expands the limits of a discipline, fosters invention and mandates disclosure. As the incentives form the foundation for operation of the patent system, a granted patent would be an indication of R&D, inventive activity, and technology progress. Furthermore, as patents grant exclusive rights to exploit the inventions commercially for a limited period of time, they represent indicators of business activity.

Patents have long been recognized to be a source of empirical data to understand and analyse inventive activity/innovation, trends and specifics in technology development, R&D processes, technological change and innovation, and investment patterns.¹ Patent statistics reflect inventive activity of countries, regions, firms, and other aspects of dynamics of innovation process.¹ Patents also indicate diffusion of technology, R&D, and productivity. Patents are a good indicator of differences in inventive activity across different firms and the relationship between R&D and patents is close to proportional.² As patents are granted to inventions only, patent numbers are invention numbers and can be considered to be positive indicators of inventive activity in the area in which they are available. Because inventive activity in most fields is the result of research and development, patents can be effectively used as indicators of R&D activity. If a patent is granted over an invention, it means that the invention is novel, non-obvious, and useful because those are three of the basic requirements that an invention should satisfy in order to be eligible for a patent. As one of the basic aspects of technology progress is development of new inventions in a field, patent statistics in a particular field can be used to understand progress of technology. By comparing and contrasting patent statistics of different countries, fields, and firms, good inferences can be drawn on differences and variances in R&D activity, inventive activity, and technology progress among them. Furthermore, patents can be used as indicators of business activity or interest because a patent provides exclusive

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¹ Robert J.W. Tijssen Center for Science and Technology Studies (CWTS), Leiden University, Leiden, Netherlands, State of the art in patent statistics – Inventiveness by numbers: towards patent inventor statistics, WIPO - OECD Workshop on statistics in the patent field, Geneva, 18 and 19 September, 2003.

² Zvi Griliches, 'Patent Statistics as Economic Indicators: A Survey', *Journal of Economic Literature*, Vol. XXVIII, December, 1990, pp. 1661 – 1707.