

Jaffe, Adam B. and Josh Lerner. *Innovation and Its Discontents: How Our Broken Patent System Is Endangering Innovation and Progress, and What to Do About It*. Princeton, NJ: Princeton University Press, 2007, xv + 236 pp., \$17.95, ISBN: 0-691-12794-8 (Pb).

This is the paperback edition of a book originally published in 2004. Notwithstanding its title, the book is only indirectly about innovation, as it focuses on the role that patenting plays in this process, with specific reference to the U.S. institutional system. The main thesis is that the U.S. patent system has badly strayed from its intended role and is currently in dire straits, possibly hindering more than spurring innovation. The symptoms include an explosion in the number of patent applications, very large patent grant rates, and "... a proliferation of patent awards of dubious merit" (p. 12). Concomitantly, there has been a sharp increase in patent litigation, which carries substantial direct cost for the parties involved, as well as indirect cost for the innovation enterprise: "... burgeoning patent litigation is increasingly making lawyers the key players in competitive struggles rather than entrepreneurs and researchers. As the patent system becomes a distraction from innovation rather than a source of incentive, the engine of technological progress and economic growth begins to labor" (p. 13).

The authors trace the origin of the current U.S. patent system troubles to two changes introduced by Congress: the creation in 1982 of the Court of Appeal for the Federal Circuit (CAFC) as the only competent forum for judicial appeal of district courts' decisions on patent matters, and the change in the way the U.S. Patent and Trademark Office (USPTO) is funded (from an agency funded by tax revenue to one funded by the fees it collects) implemented in the early 1990s. It is argued that the latter made patent rights too easy to get, whereas the former strengthened patent rights. Taken together, these changes have ignited a vicious circle with perverse incentives in which too many bad patents are issued, true innovators may have to pay ransom settlement to avoid costly litigation on bogus infringement charges, and increasing uncertainty about ownership of innovations may deter needed R&D investment.

The book comprises an introduction, laying out the scope of the analysis, and seven chapters. Chapter 1 (Today's Patent System at

Work) explains how the patent system works, including introducing the reader to such things as patentable subject matter and the notions of utility, novelty, and nonobviousness. It also discusses some basics of the economic rationale for a patent system and articulates its inherent trade-offs—*ex post* exclusivity (i.e., limited monopoly rights) as a means to create *ex ante* incentives for innovation. The authors illustrate what might go wrong (has gone wrong) with the implementation of the patent system. Chapter 2 (The Dark Side of Patents) argues that the current U.S. patent system is in disarray because of a combination of lower USPTO standards for patents, overly broad patent rights, especially in new technology fields, and stronger enforcement of patent rights. Chapter 3 (The Long Debate) provides a brief historical account of the evolution of the patent system, illustrating the point that controversies about the patent system are not new. Chapter 4 (The Silent Revolution) argues that establishment of the CAFC, meant to bring consistency to the sometimes chaotic realm of patent litigation, ended up creating decisions that expanded the domain of what can be patented, lowered the standards for receiving a patent, and made it more likely for patents to be found valid in litigations. Chapter 5 (The Slow Starvation) discusses the 1990s changes in the funding process for the USPTO, arguing that such changes had subtle impacts on the incentives at work for the USPTO and individual examiners, which contributed to the granting of an increasing number of questionable patents. Chapter 6 (The Patent Reform Quagmire) discusses political economy elements that make the process of patent reform problematic and includes a discussion of the attempt to change the patent priority system (from the first-to-invent criterion still in use in the United States to the first-to-file system used virtually everywhere else in the world).

Chapter 7 (Innovation and Its Discontents) outlines what should be done to reform the U.S. patent system. Basically, the authors suggest a new multilevel review process that includes the possibility of a pre-grant opposition and a post-grant re-examination, as well as a tilting of the judicial standards (away from the perceived advantage currently enjoyed by patent holders) used by courts in patent infringement/validity cases. The rationale for a pre-grant opposition system is based on an information argument. The USPTO has shown repeatedly that it has trouble in correctly assessing "prior art." By allowing

parties that may know more about the putative new invention (e.g., firms already active in the same technology area), and who also have a clear incentive to disclose prior art (more so than patent applicants, arguably), the new system would increase the amount of information available to patent examiners before they make a patent grant determination. The proposed post-grant re-examination process would serve as a lower-cost alternative to costly litigation by allowing interested third parties to make their case as to the validity of a granted patent. Because not all patents are born equal, the option of such an additional administrative review of patents that really matter should improve patent quality for discoveries that have a higher-impact potential. Together, these changes would translate into fewer “bad patents,” so that the presumption of validity that law confers to patents in court challenges would in fact be credible. To further level the judicial playing field, the authors also suggest doing away with jury trials in patent cases (the perception is that jury trials favor patent holders).

This is a well-written book—by two accomplished economists—that addresses important elements of the patent system, an institution rightly considered central to innovation. The book is not written primarily for economists, as the authors shy away from familiar jargon (e.g., market failures, second best, mechanism design, etc.) and technicalities that would make a crisper point to a practitioner but would get in the way of reaching a broader audience. One of the authors’ mantras is that “patent policy is too important to leave to patent lawyers” (p. 23), and they try hard to convey an economic perspective on the problem at hand in a language that everybody can understand.

The economics of intellectual property rights (IPRs) has not been a mainstream interest of readers of this *Journal*. But the large and increasing role in agricultural innovation played by private firms that rely heavily on IPR protection (e.g., the introduction of genetically modified traits in traditional germplasm) and the recent (questionable) emphasis at research universities on patenting publicly funded discoveries make it imperative that anyone interested in agricultural innovations understands patents. This book is particularly useful for that purpose, as it provides a primer on the actual workings of the U.S. patent system, with numerous examples and anecdotes that buttress the point being developed while keeping the reader’s attention engaged. The thesis of this

book is plausible, and the remedies suggested by the authors appear well thought out and sensible. Some readers, however, might find the tone of this book too draconian and might harbor *post hoc ergo propter hoc* reservations on the causality assessments it espouses. The CAFC was not the only major patent-relevant event of the early 1980s. The expansion of patentable subject matter, for example, was shepherded by landmark U.S. Supreme Court decisions. And the 1980s also saw the beginning of dramatically new technology fields and industries, including the biotechnology and information technology revolutions, momentous changes that would have challenged any well-designed IPR system.

Readers of this book may also enjoy its timely nature. At the present time, Congress is considering a sweeping patent initiative that tackles many of the problems documented in this book. That this initiative is backed by technology companies in the computer industry and by the financial services industry, while pharmaceutical and biotech companies (as well as research universities and the AFL-CIO) have raised concerns, is quite interesting and reflects one of the attractive yet limiting features of the patent system: its one-size-fits-all nature. Whereas strong patent protection is clearly critical to pharmaceutical innovations, it is highly questionable when applied to business methods in financial services. Balancing such conflicting needs is not an easy task, and, as this book recognizes, “. . . in the best of possible worlds, a patent system is a compromise among competing objectives” (p. 51). Indeed, one of the book’s many persuasive points also raises doubts about the very course of action that it advocates: “Far too often, fixes to patent policy have created as many problems as they have solved. Patent policy is truly the kingdom of unintended consequences” (p. 95).

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Bresciani, Fabrizio and Alberto Valdés, Editors. *Beyond Food Production. The Role of Agriculture in Poverty Reduction.* Northampton, MA: Edward Elgar Publishing, Inc., 2007, 232 pp., \$110.00.

Economic growth in agricultural commodity and labor markets are major sources of income growth for low-income households. These, together with the positive income effect of lower food prices due to domestic food