

# ARTICLE

## RECONSIDERING PATENT LICENSING IN THE AFTERMATH OF *MEDIMMUNE*

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## I. INTRODUCTION

Courts and commentators continue to debate whether strong patent protection promotes or impedes innovation. In a recent series of cases, the U.S. Supreme Court has restricted the scope of patent rights, reflecting a concern about the overexpansion of patent protection, the cost and potential abuse of patent litigation, and the quality of the patents being asserted.<sup>1</sup> Last term, in *MedImmune, Inc. v. Genentech, Inc.*, the Court continued this trend by enhancing the ability of licensees to challenge the scope and validity of patents.<sup>2</sup> Prior to the *MedImmune* decision, potential infringers had to choose between maintaining a license agreement with the patent holder and challenging the patent. The law forced the licensee to terminate the license and continue operating without a license in order to challenge the patent.<sup>3</sup> In

1. Examples include the *eBay*, *Labcorp*, and *KSR* decisions. The *eBay* decision limited the opportunity to obtain preliminary and permanent injunctive relief by patent holders who are not also producing products and services covered by their patents. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392–94 (2006). The *Labcorp* case raised the issue of scope of patentable subject matter. *See Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124, 134–38 (2006) (Breyer, J., dissenting). The *KSR* case focused on the applicable standard for obviousness, highlighting uncertainty over what is patentable and what is not. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740–41 (2007).

2. *See MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764, 777 (2007).

3. By operating without a license, a potential infringer runs the risk that a patent owner will sue for infringement and seek and obtain an injunction prohibiting the infringer from engaging in the infringing activity—a preliminary injunction while an infringement case is ongoing and a permanent injunction if the patent owner wins an infringement suit. If the court finds that the infringer has deliberately disregarded the patent and had no reasonable basis for believing that it was not infringing, the infringer

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*MedImmune*, the Court changed this rule, holding that licensees can challenge licensed patents while retaining the protection of the license. The *MedImmune* decision and cases following in its aftermath have opened the door further to include potential challenges from third parties who are only prospective licensees.

This rule change provides a focal point for the critical debate over the scope and appropriate limits of patent protection.<sup>4</sup> Some scholars argue that the ability to challenge licensed patents will promote the competitiveness of the market for ideas by removing “bad patents.”<sup>5</sup> Other scholars fear that the result will be to reduce the volume and increase the price of licensing, and to dampen the incentives to patent and innovate.<sup>6</sup> Missing from the debate is a systematic analysis of the ways in which the rule change will impact social welfare. Through an examination of the implications of patent challenges by licensees, this Article provides a law and economics framework for translating the effects of legal rule changes into changes in patent market activity. It explores how the rule change will influence the decisionmaking of licensors and licensees and ultimately impact social welfare through upstream effects on patenting and innovation, cumulative impact on the cost and volume of licensing and litigation, and downstream effects on the prevalence of “bad patents.” Based on this analysis, I argue that the *MedImmune* decision will increase litigation without improving patent quality, and will decrease the volume and increase the cost of licensing. Furthermore, I suggest that these harms are likely to outweigh any potential benefit of removing

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can be subject to treble damages and attorney’s fees, as well as prejudgment interest. *See* Bryson Act, 35 U.S.C. §§ 284–285 (1999).

4. Proposed patent reforms have included expanded opposition proceedings pursuant to which third parties could introduce information relevant to pending patent applications or seek reexamination of issued patents. *See, e.g.*, ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 181–83 (2004); Jonathan Levin & Richard Levin, *Benefits and Costs of an Opposition Process*, in PATENTS IN THE KNOWLEDGE-BASED ECONOMY 120, 132–36, (Wesley Cohen & Stephen Merrill eds., 2003); Stuart J.H. Graham & Dietmar Harhoff, *Can Post-Grant Reviews Improve Patent System Design? A Twin Study of US and European Patents* 16–17 (Ctr. for Econ. Policy Research, Discussion Paper No. 5680, 2006), available at <http://www.ssrn.com/abstract=921826>.

5. *See* Jay P. Kesan & Andres A. Gallo, *Why “Bad” Patents Survive in the Market and How Should We Change?—The Private and Social Costs of Patents*, 55 EMORY L.J. 61, 77–86 (2006) (describing the survival of “bad” patents and the expensive process that competitors must use to challenge them).

6. *See, e.g.*, Brief of American Intellectual Property Law Ass’n as Amicus Curiae Supporting Respondents at 11–16, *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2006) (No. 05-608) (arguing that allowing declaratory judgment actions will undermine licensing and increase litigation).

“bad patents.” More generally, the framework I develop demonstrates that any change in patent laws that seriously undermines the strength of patent rights will have a negative effect on patent markets, which outweighs any positive effects on patent quality. This finding has important implications for any proposed change to patent law. It suggests that efforts to enhance innovation through limitations on patent rights are misguided and in need of critical reexamination in light of potential harm to patent markets.

The Article begins with a legal analysis of the Federal Circuit and Supreme Court decisions in the *MedImmune* case and subsequent decisions expanding the scope and nature of the rule change. The analysis provides an understanding of the implications of the rule change and explores the underlying public policy concerns of the Federal Circuit and Supreme Court. Using this rule change as a focal point, I provide a law and economics framework for analyzing licensing decisions by market participants and assessing the cumulative impact on social welfare in response to rule change. Changes in license decisionmaking are evaluated in terms of their likely effects on licensing and litigation activity, upstream impact on patenting and innovation, and downstream impact on resource allocation and the prevalence of “bad patents.” The framework is then applied to examine the broader implications of reducing patent strength. I argue that the *MedImmune* decision and the resulting changes in licensing activity foreshadow important changes in patent scope and licensing activity that could result from proposed patent reform legislation,<sup>7</sup> and that many of the issues raised in this Article feed into the larger debate over patent reform. My analysis suggests that current congressional and judicial efforts to enhance innovation by limiting patent rights are misguided and should be reexamined in light of the potential negative impact of such efforts on patent markets.

## II. LEGAL ANALYSIS OF THE *MEDIMMUNE* DECISION

The *MedImmune* case provides both an opportunity to examine how a change in legal rules might impact the decisionmaking of licensors and licensees and an insight into the

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7. For a discussion of the measures proposed as part of patent reform legislation, see JOHN R. THOMAS & WENDY H. SCHACHT, CONG. RESEARCH SERV., PATENT REFORM: INNOVATION ISSUES 14–42 (2007), available at [http://ipmall.info/hosted\\_resources/crs/RL32996-0701223.pdf](http://ipmall.info/hosted_resources/crs/RL32996-0701223.pdf). The measures include broader opportunities for third party participation in patent challenges and caps on damages that would reduce the risk of terminating a license and bringing a patent challenge. *Id.* at 25–26, 34–36.

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different social welfare policies motivating Federal Circuit and Supreme Court decisionmaking in recent patent cases. The Federal Circuit and Supreme Court decisions focus on the procedural question of a licensee's standing to bring a declaratory judgment action challenging the scope and validity of a licensed patent. A declaratory judgment action is a civil case brought by a plaintiff who seeks resolution of uncertainty about the respective rights and obligations of the parties in order to avoid future legal challenges to their proposed actions.<sup>8</sup> The court adjudicates the rights and responsibilities of the parties without awarding damages or ordering the parties to take any actions. In order to bring a declaratory judgment action, the plaintiff must satisfy the jurisdictional requirements for standing to bring such a suit. Although framed in narrower procedural terms, the underlying concerns implicit in the Federal Circuit and Supreme Court opinions in the *MedImmune* case reflect their divergent views on how to promote competition in the market for ideas, the role of private property rights in supporting efficient markets for ideas, and the deference to be given to private party contracts. Part II provides the context for the evaluation of social welfare impact in Part III, which introduces a framework for examining the practical implications of the Federal Circuit and Supreme Court policy positions.

A. *The Specifics of the Case*

MedImmune Inc. (MedImmune) manufactures Synagis, a humanized monoclonal antibody used to prevent respiratory tract disease in children. Synagis has accounted for more than eighty percent of MedImmune's revenue from sales since 1999.<sup>9</sup> MedImmune entered into a nonexclusive license with Genentech in 1997 for an existing patent with an expiration date in 2006 covering technology developed in the early 1980s for making recombinant antibodies ("Cabilly" or "Cabilly I"). Pursuant to the license agreement, MedImmune was also licensed under a pending Genentech patent application that issued in 2001 and became known as "Cabilly II." When, after eleven years of interference proceedings and legal wrangling, the Cabilly II patent issued, Genentech notified MedImmune of its belief that making and selling Synagis would infringe the Cabilly II patent in the absence of a license. MedImmune disputed this demand

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8. See 28 U.S.C. § 2201 (2006) (establishing the declaratory judgment remedy).

9. In 2005, worldwide sales of Synagis exceeded \$1 billion, accounting for nearly all of MedImmune's \$1.22 billion in revenue for the year. Ben White, *High Court to Hear Case on Royalties for Synagis*, WASH. POST, Feb. 22, 2006, at D04.

based on its belief that the Cabilly II patent was invalid and did not cover Synagis.<sup>10</sup>

Despite widespread questions in the industry about the validity of the Cabilly II patent,<sup>11</sup> licensees such as MedImmune continued to make their royalty payments rather than risk a potential injunction, treble damages, and attorney's fees if sued for infringement. Instead of terminating or breaching the license, MedImmune asserted that it was making royalty payments to Genentech under protest and sought a declaratory judgment that the patent was invalid.

It is reasonable to assume that MedImmune's ability to bring a declaratory judgment action in this particular case had an industry-wide positive economic effect. The patent covered core technology first developed in the 1980s, with broad applicability to a fast-growing segment of the biotech industry. The Cabilly II patent was widely believed to be invalid. In addition, in combination with Cabilly I, it had an effective term spanning more than thirty years, and it continued to attract huge license revenues and create transaction costs despite its questionable validity. Furthermore, under the old rule there was no effective way of challenging the patent except through U.S. Patent and Trademark Office reexamination proceedings—a mechanism that is widely acknowledged to have significant

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10. See *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764, 767–68 (2007); *MedImmune, Inc. v. Genentech, Inc.*, 427 F.3d 958, 961–62 (Fed. Cir. 2005); Brief for Petitioner at 4, *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2007) (No. 05-608).

11. Both Celltech Inc. and Genentech filed separate U.S. patent applications in 1983 (referred to as the “Boss” patent and the “Cabilly” patent, respectively) covering methods used to produce monoclonal antibodies by recombinant DNA technology. After Celltech's patent issued, Genentech copied claims of the Boss patent into a previously filed Cabilly patent continuation application, triggering an interference. After many years of interference proceedings and related disputes and negotiations, the parties settled, and their court-approved settlement resulted in accepting the priority of the Cabilly II patent application. Genentech was left with the Cabilly patent, which was set to expire in 2006, and the continuation application (the Cabilly II, which contained the same claims as the original Boss patent), which issued in 2001 with an expiration date of 2018. MedImmune challenged its license with Genentech upon issuance of the Cabilly II patent, claiming that, among other things, Genentech and Celltech were guilty of collusion in their settlement to gain a monopoly of the artificial synthesis of antibody molecules and that the Cabilly II patent was invalid and unenforceable. Robin L. Teskin, *It Lives for 29 Years? MedImmune/Genentech Case Was Sparked by Unpredicted Patent Term*, LEGAL TIMES, Nov. 3, 2003, available at <http://www.crowell.com/pdf/Teskin11-03.pdf>; see also *MedImmune*, 427 F.3d at 961–62 (describing the history between MedImmune, Inc. and Genentech, Inc. with regards to the Cabilly patent). The U.S. Patent and Trademark Office issued a final office action rejecting the claims of the Cabilly II patent in February 2007, and Genentech is pursuing the available appeal process. Andrew Pollack, *A 2001 Genentech Biotechnology Patent Is Revoked*, INT'L HERALD TRIB., Feb. 22, 2007, available at <http://www.iht.com/articles/2007/02/22/business/patent.php>.

limitations and drawbacks.<sup>12</sup> A successful challenge offered broad freedom to operate benefits and cost savings to multiple industry participants utilizing this platform technology, thus removing deadweight loss and reducing transaction costs.<sup>13</sup> It is unlikely that MedImmune would have brought the challenge if doing so had subjected it to the possibility of an injunction.

*B. The Federal Circuit's "Reasonable Apprehension of Suit" Test*

The lower courts focused on the jurisdictional question of whether MedImmune had raised a justiciable claim and held that it had not. The district court concluded that MedImmune's declaratory judgment claim did not satisfy the "actual case or controversy" requirement under the Declaratory Judgment Act.<sup>14</sup> The court relied on the Federal Circuit decision in *Gen-Probe Inc. v. Vysis, Inc.* that a patent licensee in good standing cannot establish an Article III case or controversy with regard to validity, enforceability, or scope of the patent because the license agreement "obliterate[s] any reasonable apprehension" that the licensee will be sued for infringement.<sup>15</sup> The Federal Circuit affirmed, reiterating the "reasonable apprehension of suit" test requiring "both (1) a reasonable apprehension on the part of the declaratory judgment plaintiff that it will face an infringement suit; and (2) present activity by the declaratory judgment plaintiff which could constitute infringement."<sup>16</sup> This formulaic, test-based approach illustrates the Federal Circuit's inclination to seek bright-line formulas for evaluating patent questions. The

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12. See, e.g., Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 943, 964-67 (2004) (discussing limitations of the current patent reexamination procedures).

13. According to Genentech, in 2006 it earned \$105 million in pretax income from the patent, and it expected to earn hundreds of millions more in royalties during the remaining life of Cabilly II. Pollack, *supra* note 11. While the biggest royalties came from blockbuster drugs such as Humira (an Abbott drug), Remicade (a Johnson & Johnson drug), Synagis, and Erbitux (an ImClone drug), many other companies and research institutions have and continue to make use of technology potentially covered by Cabilly II. *See id.* Others have spent time and money finding ways to avoid use of the technology.

14. The Declaratory Judgment Act states that

[i]n a case of actual controversy within its jurisdiction . . . any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be sought. Any such declaration shall have the force and effect of a final judgment or decree and shall be reviewable as such.

28 U.S.C. § 2201(a) (2006).

15. *Gen-Probe Inc. v. Vysis, Inc.*, 359 F.3d 1376, 1379-82 (Fed. Cir. 2004).

16. *MedImmune, Inc. v. Centocor, Inc.*, 409 F.3d 1376, 1379, 1381 (Fed. Cir. 2005).

Federal Circuit's propensity for applying bright-line rules in patent cases is further illustrated by the "teaching-suggestion-motivation test" for obviousness introduced in the recent Federal Circuit decision in *Teleflex, Inc. v. KSR International Co.*,<sup>17</sup> and by the patent-specific version of the general equitable test for injunctions (a presumption of injunction upon a finding of infringement) applied by the Federal Circuit in *MercExchange, LLC v. eBay, Inc.*<sup>18</sup>

The Federal Circuit's decision to exclude the right of licensees to challenge licensed patents was based in part on a concern about the equities in private party contracts. In its decision in *Gen-Probe*, the Federal Circuit expressed the view that allowing the licensee to both maintain the license and seek to invalidate the licensed patent was inequitable because it required the licensor to "bear all of the risk" of the license while allowing the licensee to benefit from the effective cap on damages and royalties in the event of a failure of its patent challenge.<sup>19</sup> As well as being inequitable, the Federal Circuit expressed the related concern that such a rule would negatively impact the willingness of patent owners to license rather than litigate.<sup>20</sup> By proposing a bright-line test that favors the restriction of a licensee's ability to retain the agreed upon license while challenging the licensed patent, the approach adopted by the Federal Circuit in *MedImmune* (and in the cases leading up to it) demonstrates the Federal Circuit's interest in providing decisions that support the predictability and enforceability of private party rights under intellectual property rules. The Federal Circuit approach also favors stronger property right protection for patents by limiting the ability to challenge patents that are the subject of private party bargains.

### C. *The Approach Adopted by the Supreme Court in MedImmune*

The Supreme Court reversed the Federal Circuit decision and allowed *MedImmune* to bring its declaratory judgment action without terminating its license. The Supreme Court focused its ruling on the jurisdictional issue of

whether Article III's limitation of federal courts' jurisdiction to "Cases" and "Controversies" reflected in the "actual

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17. *Teleflex, Inc. v. KSR Int'l Co.*, 119 F. App'x 282, 288-90 (Fed. Cir. 2005), *rev'd*, 127 S. Ct. 1727 (2007) (explaining how the district court incorrectly applied the test).

18. *See MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005), *vacated*, 126 S. Ct. 1837 (2006).

19. *Gen-Probe*, 359 F.3d at 1382.

20. *See id.*

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controversy” requirement of the Declaratory Judgment Act . . . requires a patent licensee to terminate or be in breach of its license agreement before it can seek a declaratory judgment that the underlying patent is invalid, unenforceable, or not infringed.<sup>21</sup>

The Supreme Court focused on the question of whether, but for making what it characterizes as effectively coerced royalty payments, the licensee would face an imminent threat of liability from the licensor and would suffer hardship without court consideration.<sup>22</sup> The Supreme Court extended the rationale used in a line of cases involving challenges to government statutes to the context of coerced action in a private party arrangement. Extending the rationale that “[t]he declaratory judgment procedure is an alternative to the pursuit of the arguably illegal activity” to a situation in which a private party continues to pay royalties to avoid infringement, the Supreme Court held that if but for the licensee’s own coerced action (the payment of royalties) such licensee would face the threat of imminent harm (an injunction and/or damages), performing this coerced action should not take the case outside of the scope of federal jurisdiction.<sup>23</sup> “The dilemma posed by that coercion—putting the challenger to the choice between abandoning his rights or risking prosecution—is ‘a dilemma that it was the very purpose of the Declaratory Judgment Act to ameliorate.’”<sup>24</sup> Applying this principle, the Supreme Court determined “that the requirements of [a] case or controversy are met where payment of a claim is demanded as of right and where payment is made, but where the involuntary or coercive nature of the exaction preserves the right to recover the sums paid or to challenge the legality of the claim.”<sup>25</sup> This rationale would seem to encompass any situation in

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21. *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764, 767 (2007). For further discussion on the tension between focusing on the procedural nature of the rule and allowing greater access to would-be litigants with justiciable disputes, see Lorelei Ritchie de Larena, *Re-evaluating Declaratory Judgment Actions in Intellectual Property Disputes*, 83 IND. L.J. 957, 962–63 (2008).

22. *MedImmune*, 127 S. Ct. at 772 n.8 (“The justiciability problem that arises, when the party seeking declaratory relief is himself preventing the complained-of injury from occurring, can be described in terms of standing . . . or in terms of ripeness . . . . As respondents acknowledge, standing and ripeness boil down to the same question in this case.” (internal citations omitted)).

23. *Id.* at 772–73, 777 (quoting *Steffel v. Thompson*, 415 U.S. 480 (1974) (Rehnquist, J., concurring)). The closest case on point is *Altwater v. Freeman*, which held that a licensee’s failure to cease its payment of royalties did not render nonjusticiable a dispute over the validity of the patent. *Altwater v. Freeman*, 319 U.S. 359, 365–66 (1943).

24. *MedImmune*, 127 S. Ct. at 773 (quoting *Abbot Labs. v. Gardner*, 387 U.S. 136, 152 (1967)).

25. *Id.* (internal quotation marks omitted).

which a private party takes some action (e.g. makes royalty payments, or modifies the design of a product to take it outside of the scope of the patent) solely in order to avoid infringing the rights of the other party while questioning the validity, scope, or enforceability of those rights. The Supreme Court noted that MedImmune's contract claim, concerning whether it had an obligation to pay royalties for an invalid patent, had been preserved, and left the contractual implications of the licensee's actions and the ability to contract around this right to challenge for future clarification.<sup>26</sup>

Perhaps indicative of a difference in views about the extent to which there should be limits on private party contracts governing intellectual property, the lower courts present the issue in terms of the licensee enjoying the "benefits of the bargain," with the royalties reflecting the agreed upon payment for the benefit (the covenant not to sue), while the Supreme Court frames the discussion in terms of "coerced" royalty payments exacted through monopoly power. Applying reasoning from cases involving challenges to government-imposed laws to one involving a contract negotiated by private parties is consistent with a Supreme Court view of patents as government-awarded monopolies that need to be regulated. This can be contrasted with the Federal Circuit's emphasis on the nature of patent licenses as bargained-for contracts between private parties and patents as property rights facilitating these private party contracts. The Supreme Court has consistently supported the position that the right to challenge the validity of patents (a weakening of the property right) is an important part of protecting competitiveness. Its decisions have emphasized "the strong federal policy favoring free competition in ideas which do not merit patent protection."<sup>27</sup> By protecting the licensee's ability to challenge potentially invalid patents, the reasoning goes, "bad patents" are more likely to be eliminated, resulting in an improvement in the functioning of the patent system and a resulting correction in the allocation of resources. Moreover, the licensee's efforts in challenging a potentially invalid patent have public benefits that extend beyond the licensee, impacting the obligations of other potential and actual users of the patented

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26. Justice Scalia states that if, on remand, the licensing agreement between Genentech and MedImmune was found to preclude suit, then "the consequence would be that respondents win this case on the merits." *Id.* at 776 (emphasis omitted).

27. *Lear, Inc. v. Adkins*, 395 U.S. 653, 656 (1969) (citing *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 230-32 (1964)).

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technology.<sup>28</sup> Differences between the Federal Circuit's and the Supreme Court's decisions in this and other recent patent related decisions may reflect the Federal Circuit's greater willingness to rely on freedom of contract and the operation of markets to achieve efficient outcomes, and the Supreme Court's greater willingness to see intervention (both through court participation and through expanded third party rights to challenge patents) in allocating and enforcing property rights as a solution. Different perspectives on how to promote competitive markets, although not articulated as such, could underlie the divergence of the Federal Circuit and Supreme Court in recent intellectual property decisions.

The Federal Circuit's preference for introducing relatively bright-line rules has also been criticized by the Supreme Court. The Supreme Court rejects the Federal Circuit's formulaic approach to the jurisdictional question in the *MedImmune* case, explaining that there can be no bright-line rule separating those cases that satisfy the baseline jurisdictional requirement and those that do not and that the decision is fact based.<sup>29</sup> The Supreme Court states, quoting one of its earlier decisions, that "the question in each case is whether the facts alleged, under all the circumstances, show that there is a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant the issuance of a declaratory judgment."<sup>30</sup> The rejection of bright-line rules in intellectual property contexts could be supported as necessary to

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28. This public policy reason for protecting a licensee's right to challenge patents that the licensee believes are invalid was raised by *MedImmune* in its briefing, and although not adopted by the Court (which focused on the jurisdictional issue), the Court's decision and its commentary are consistent with this overall view. *MedImmune* argued that the *Gen-Probe* decision improperly resurrected the licensee estoppel that was abolished in *Lear, Inc. v. Adkins*. See *id.* at 671. The Federal Circuit distinguished between *Lear*, on the grounds that whereas *Lear* concerned the issue of whether a defaulting licensee could not be estopped from asserting patent invalidity as a defense to a suit brought by the licensor, the *MedImmune* case focused instead on the procedural question of whether there was a justiciable case or controversy for the court to adjudicate. Although the fact scenarios and specific questions addressed by the cases are distinct, they both involve similar issues, and the linkage merits further attention.

29. *MedImmune*, 127 S. Ct. at 771.

*Aetna* and the cases following it do not draw the brightest of lines between those declaratory-judgment actions that satisfy the case-or-controversy requirement and those that do not. Our decisions have required that the dispute be "definite and concrete, touching the legal relations of parties having adverse legal interests"; and that it be "real and substantial" and "admi[t] of specific relief through a decree of a conclusive character, as distinguished from an opinion advising what the law would be upon a hypothetical state of facts."

*Id.* (quoting *Aetna Life Ins. Co. v. Haworth*, 300 U.S. 227, 240-41 (1937)).

30. *Id.* (citing *Maryland Cas. Co. v. Pac. Coal & Oil Co.*, 312 U.S. 270, 273 (1941)).

accommodate the changing considerations that shape the balance of appropriate intellectual property owner and user rights. Using Justice Breyer's analogy of navigating between the shores of overprotection and underprotection, the rules must be flexible so as to move with and adapt to the constantly changing technology shoreline.<sup>31</sup> Private parties must also be able to map out and navigate routes for commercializing technologies in advance, however, and must be able to reach agreement on the right to use inventions core to such technologies. Reliability and predictability of patent rights are critical to facilitating private party contracts and bright-line rules can be useful in enhancing predictability and strengthening property rights where managed appropriately to allow for changes in technological needs and possibilities.

The divergence in approaches may also lie in differing views about the benefits of having stronger patent rights. The Federal Circuit has been seen as providing decisions that tilt in favor of patent owners and strengthen patent rights. The Supreme Court's recent decisions, such as its decisions in the *KSR* and *eBay* cases,<sup>32</sup> which can be viewed as supporting greater freedom for those engaging in activities covered by patents and as weakening the strength of patent rights, are consistent with the "user-friendly" (as opposed to "owner-friendly") changes to patent laws that are being proposed as part of the current proposals for patent reform.<sup>33</sup>

#### D. Extension to Licensing Negotiations: The SanDisk Decision

In an important footnote, the Supreme Court rejects the Federal Circuit's "reasonable apprehension of suit" test as inconsistent with prior Supreme Court precedent.<sup>34</sup> This footnote,

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31. As described by Justice Breyer,

Patent law seeks to avoid the dangers of overprotection just as surely as it seeks to avoid the diminished incentive to invent that underprotection can threaten. One way in which patent law seeks to sail between these opposing and risky shoals is through rules that bring certain types of invention and discovery within the scope of patentability while excluding others.

Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc., 548 U.S. 124, 127 (2006).

32. See *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007); *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).

33. For a good discussion of the current proposals included in the patent reform debate, see THOMAS & SCHACHT, *supra* note 7, at 14–42.

34. "Even if *Altwater* could be distinguished as an 'injunction' case, it would still contradict the Federal Circuit's 'reasonable apprehension of suit' test (or, in its evolved form, the 'reasonable apprehension of imminent suit' test." *MedImmune*, 127 S. Ct. at 777 n.11. As indicated by the dissent to the Federal Circuit's order denying rehearing en banc of the decision in *Teva Pharmaceuticals USA, Inc. v. Pfizer Inc.*, 405 F.3d 990, 996 (Fed.

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although not part of the *MedImmune* ruling, calls into question the Federal Circuit case law on declaratory judgments beyond the specific facts of *MedImmune*, paving the way to make declaratory judgment more readily available to parties even prior to entering into a license.

The Federal Circuit incorporated the Supreme Court's rejection of the "reasonable apprehension" test and applied the revised *MedImmune* standard in *SanDisk Corp. v. STMicroelectronics, Inc.*, expanding the opportunity to bring a declaratory judgment suit to include affirmative acts of a patent owner.<sup>35</sup> SanDisk, a company in the flash memory storage market, was approached by STMicroelectronics, a semiconductor company with a patent portfolio relating to the flash memory market, with a proposal to discuss a cross-license agreement that would include patents that STMicroelectronics thought would be of "interest" to SanDisk. After six months of discussions, during which STMicroelectronics provided detailed infringement analysis but verbally indicated that it did not intend to sue SanDisk for infringement, SanDisk filed a lawsuit seeking a declaratory judgment of noninfringement and invalidity of the fourteen STMicroelectronics patents that had been discussed during the negotiations.<sup>36</sup> The district court ruled that the infringement analysis presented by STMicroelectronics did not constitute the express charges of infringement that would support a finding of an actual controversy, and indicated that even if it did have jurisdiction it would use its discretion to decline the case.<sup>37</sup> The Federal Circuit vacated and remanded this decision, holding that the case satisfied the baseline jurisdictional requirement, and that the district court had failed to provide the required support for its exercise of discretion in declining jurisdiction.<sup>38</sup>

The *SanDisk* holding broadens the opportunity to seek a declaratory judgment action to include situations in which a patentee "asserts rights under a patent based on certain

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Cir. 2005), "[t]here are relatively few Supreme Court cases dealing with Article III and declaratory judgments, [particularly in a private party controversy, and] the few cases that do exist provide no support for a reasonable apprehension of imminent suit requirement." For an example, see *Aetna*, 300 U.S. at 242, which notes, "Such a dispute is manifestly susceptible of judicial determination. It calls, not for an advisory opinion upon a hypothetical basis, but for an adjudication of present right upon established facts."

35. *SanDisk Corp. v. STMicroelectronics, Inc.*, 480 F.3d 1372, 1380–81 (Fed. Cir. 2007).

36. *Id.* at 1374–76.

37. *SanDisk Corp. v. STMicroelectronics, Inc.*, No. C 04-04379 JF, 2005 WL 5801276, at \*7–8 & n.30 (N.D. Cal. Jan. 20, 2005).

38. *SanDisk*, 480 F.3d at 1382–83.

identified ongoing or planned activity of another party, and where that party contends that it has the right to engage in the accused activity without a license,” providing that in these circumstances “an Article III case or controversy will arise and the party need not risk a suit for infringement by engaging in the identified activity before seeking a declaration of its legal rights.”<sup>39</sup> Rather than requiring a specific threat of a lawsuit, the Federal Circuit now seems to require only a difference of opinion as to whether a license is needed.

*SanDisk* has been followed by district court and Federal Circuit decisions that continue to leave the door open for preemptive challenges by potential licensees. In *Sony Electronics, Inc. v. Guardian Media Technologies, Ltd.*, for example, Guardian, the owner of patents relating to a system in which users can selectively block the viewing or playing of television programs, sought to license its patents to four electronics companies: Sony, Matsushita and its subsidiary JVC, and Mitsubishi.<sup>40</sup> The negotiations between the parties included letters from Guardian detailing the products for which it claimed a license was needed and the royalties allegedly owed for past activities covered by the patents. All four companies approached by Guardian filed declaratory judgment actions challenging the validity of the patents, as well as initiating a reexamination of the patents with the U.S. Patent and Trademark Office. The district court applied the reasonable apprehension of suit test to find that there was no subject matter jurisdiction because there had been no express threat of litigation or implicit threat of immediate litigation. The decision was appealed, and during the interim the Supreme Court’s *MedImmune* ruling was announced. The Federal Circuit subsequently applied the same reasoning as used in *SanDisk* to find that an actual controversy had arisen in all four cases. Guardian and each of the four plaintiffs had taken adverse positions to each other regarding the sale of the plaintiffs’ respective products, Guardian had in each case asserted that it was owed royalties based on specific past and ongoing activities by the plaintiffs, and the plaintiffs each

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39. *Id.* at 1381.

40. *Sony Elecs., Inc. v. Guardian Media Techs., Ltd.*, 497 F.3d 1271, 1273 (Fed. Cir. 2007). The plaintiffs in *Sony* had all been approached four years earlier by the former owner of some of the same patents now asserted by Guardian, and had chosen to ignore the license demands with no further repercussions. In determining the impact of the new right to bring a declaratory judgment action, it is important to remember that the owner of a questionable patent will sometimes be unable to secure licenses or to pursue other enforcement actions, minimizing the impact of the “bad patent” without the need for declaratory judgment actions.

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contended that they had a right to engage in those activities without a license. Whether the parties were in the midst of licensing negotiations when the declaratory judgment actions were filed was held to be irrelevant in the absence of evidence that the potential licensees were using declaratory judgment actions solely as a tactical measure filed to improve their leverage in license negotiations.<sup>41</sup>

Cases following the *MedImmune* decision suggest that where a potential licensor asserts that it is owed royalties based on past and current activities, and the potential licensee disagrees, an “actual controversy” will be found.<sup>42</sup> The big question left open by court decisions to date is the level of activity by the potential licensor necessary to open the door to a declaratory judgment action. An actual controversy may be found to exist regardless of whether licensing negotiations are ongoing, and threat of suit can be found from actions taken by a licensor in connection with third party licensees.<sup>43</sup> The Federal Circuit comments in a footnote in *SanDisk* that STMicroelectronics could have avoided the risk that its license proposal would trigger a declaratory judgment action through use of a confidentiality agreement.<sup>44</sup> This suggests that the potential licensor will retain some ability to reduce the risk of a declaratory judgment through a careful negotiation strategy, but there is no clear guidance on how to avoid the risk altogether. While Federal Circuit and district court decisions following the *MedImmune* decision have ruled out situations in which the proposed activity being questioned is future activity rather than ongoing activity and situations in which the patent holder provides a covenant not to sue or has other assurances that the activity is not infringing, the outer boundaries of declaratory judgment jurisdiction remain undefined.<sup>45</sup>

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41. *Id.* at 1286, 1289.

42. *See, e.g.,* Teva Pharms. USA, Inc. v. Novartis Pharms. Corp., 482 F.3d 1330, 1346 (Fed. Cir. 2007); Honeywell Int’l Inc. v. Universal Avionics Sys. Corp., 488 F.3d 982, 995–96 (Fed. Cir. 2007).

43. *See* Echostar Satellite LLC v. Finisar Corp., 515 F. Supp. 2d 447, 451–52 (D. Del. 2007) (finding that infringement verdict against third party who failed to take a license and attempts to enter into licensing negotiations with plaintiff were sufficient to establish actual controversy).

44. *SanDisk*, 480 F.3d at 1375 n.1.

45. *See, e.g.,* Benitec Austl., Ltd. v. Nucleonics, Inc., 495 F.3d 1340, 1349 (Fed. Cir. 2007) (future activity); Merck & Co. v. Apotex, Inc., 488 F. Supp. 2d 418, 424 (D. Del. 2007) (covenant not to sue); Judkins v. HT Window Fashions Corp., 514 F. Supp. 2d 753, 764 (W.D. Pa. 2007) (finding declaratory judgment jurisdiction when injury is “actual and imminent”).

Uncertainty remains about whether contract provisions restricting or penalizing declaratory judgment actions will be enforceable.<sup>46</sup> In addition, even if parties may be able to mitigate the effect of the rule on their contractual relationships through contract provisions, they may not be able to address the risks in the pre-contract negotiation period. A potential licensor will have greater risk in approaching potential licensees, making the alternative option of filing a lawsuit first more attractive than it otherwise might have been. As further discussed below, the effect of *MedImmune* on pre-contract negotiations and uncertainty over the enforceability of contract provisions limiting the licensee right to bring a declaratory judgment action may be sources of significant impact on licensing activity.

### III. IMPACT OF RULE CHANGE ON SOCIAL WELFARE: A LAW & ECONOMICS APPROACH

Little is understood about the specific determinants of innovation or the ways in which incremental changes in patent laws affect such activity, as evidenced by the divergence in opinions regarding the likely effects of proposed patent reforms. The debate over whether patent rule changes such as that brought about by the *MedImmune* decision will improve social welfare are premised on general assumptions about incentives to innovate, patent, and license. Proponents of the *MedImmune* decision look to the potential benefits of removing poor quality patents as a major advantage of the rule. Critics suggest that innovation and technology transfer will be negatively impacted through increases in the cost of licensing, a reduction in the volume of licensing activity, and reduced incentive to seek patent protection and to innovate.<sup>47</sup> Missing from the debate is a

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46. See Donald S. Chisum, *Chisum on MedImmune, Inc. v. Genentech, Inc.*, 2008 LEXISNEXIS EMERGING ISSUES 872 (noting that, prior to *MedImmune*, patent owners would assume that a “no contest” clause would be unenforceable or could constitute patent misuse, but that now those assumptions should be revisited); Stephanie Chu, *Operation Restoration: How Can Patent Holders Protect Themselves from MedImmune?*, 2007 DUKE L. & TECH. REV. 0008, ¶ 6, available at <http://www.law.duke.edu/journals/dltr/articles/pdf/2007DLTR0008> (“*MedImmune* leaves patent owners wondering whether or not they can contract around their potential vulnerability to patent challenges.”).

47. If the right to challenge leads to an increase in expected licensing costs for licensors which makes infringement suits more attractive than licensing, for example, or if the licensee’s right to challenge is expanded to include as a trigger any communication from the licensor that relates to its patent, then the negative impact on licensing activity could more than offset any associated benefits from removing invalid patents. If the rule simply results in a renegotiation of license terms and price in a way that reflects the expanded rights of the licensee, then the net result may be positive. The impact may or may not be avoidable by contract, and the uncertainty around which contract provisions

framework for systematically examining the economic factors that will change for individual decisionmakers impacted by the rule change. While there is a lack of consensus on the mechanisms by which patent and licensing laws influence invention, innovation, and technology transfer,<sup>48</sup> agreement can generally be reached on factors that are likely to be material to individual licensing decisions and, by extrapolation, to licensing markets. Changes in licensing behavior will be reflected in changes in patent markets as a whole, influencing both upstream innovation and inventive activity and downstream allocation of resources, cost, and availability of patented technologies. An examination of the individual patent licensing decisions of licensors and licensees and how these decisions might be influenced by the expanded opportunity to challenge licensed patents thus provides a starting point for analyzing rule impact on social welfare. This Section therefore focuses on the effects of the rule change on a model of licensor and licensee decisionmaking, mapping the potential effects of the rule change on licensing to a broader potential change in social welfare. Starting with a basic model of an individual licensing decision, the framework is then expanded to consider additional factors relevant to certain subgroups of licenses.

#### A. *Social Welfare*

The debate over the social welfare consequences of expanding the right of licensees to challenge licensed patents has been framed largely in terms of a comparison of the positive effects on reducing the number of “bad patents” through increased private sector opportunity to challenge them and the negative impact on licensing and inventive activity.

In this discussion the term “bad patents” can be understood as referring to patents that are overbroad, obvious in light of prior art, or otherwise fail to reasonably satisfy the requirements of the patent statute—patents that the U.S. Patent and Trademark Office should reject if reviewing the patent in light of the statutory requirements with full information about the prior art. Because the U.S. Patent and Trademark Office may make mistakes in its patent decisions—due for example to incomplete or imperfect information, a lack of resources, or lack of familiarity with the technology—in some cases patents are issued

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will be enforceable and what efficiency impact these provisions will have are costs that need to be factored into the evaluation.

48. See Paul J. Heald, *A Transaction Costs Theory of Patent Law*, 66 OHIO ST. L.J. 473, 474 (2005).

when they should not be.<sup>49</sup> There has been a growing concern among many policymakers and representatives of the business community about patent quality and the ability of the U.S. Patent and Trademark Office to improve upon patent quality and reduce the number of “bad patents,” concerns that have motivated proposed patent reforms currently under consideration in Congress.<sup>50</sup> Increased opportunities for third party challenges to patent scope and validity are included in the proposed reforms and provided by the *MedImmune* decision. Increasing the private sector role in testing patent validity may help to weed out “bad patents.” This positive social welfare effect is what the Supreme Court in its decision in *Lear, Inc. v. Adkins* refers to as the “important public interest in permitting full and free competition in the use of ideas which are in reality a part of the public domain.”<sup>51</sup> If a licensee successfully challenges and invalidates a “bad patent,” then, in addition to the private cost savings to the licensee, there will be a public benefit arising from the reduction in deadweight loss from the removal of patent protection and lower future transaction costs associated with use of the patented invention. Because the public benefits of removing a “bad patent” will, it is argued, exceed the private benefits, private challenges will be undersupplied and should be encouraged. The ability to challenge patents will affect “good” patents as well, however. Moreover, the right to challenge patents will also have potentially negative effects on licensing activity and future incentives to innovate and to disclose the innovations through the patent process.

The assumption made by most commentators is that allowing a licensee to challenge the validity, enforceability, and scope of the licensed patent in court, with the potential to invalidate or limit the scope of the patent, will have a positive effect on reducing “bad patents,” a negative effect on the cost of licensing (both transaction costs and the price and availability of a license), and a potentially negative impact on future patenting activity. These three types of social welfare impact—the cost and

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49. Lemley provides an argument for why it may be rational for the U.S. Patent Office to “make mistakes” in the patent application review process, leaving private parties to select which patents to enforce and litigate. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1497 (2001).

50. See THOMAS & SCHACHT, *supra* note 7, at 6–7; see also FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 7–17 (2003) (making recommendations to improve patent quality); NAT’L RESEARCH COUNCIL OF THE NAT’L ACAD., A PATENT SYSTEM FOR THE 21ST CENTURY 46–50 (2004) (describing methods of measuring patent quality).

51. *Lear, Inc. v. Adkins*, 395 U.S. 653, 670 (1969).

volume of licensing activity (and litigation), removing “bad patents,” and dynamic incentives to invent and patent—form the basis of the social welfare evaluation in this Article. While much of the literature on the affects of changes in patent rules on social welfare has focused on the latter two types of impact, this Article focuses primarily on licensing activity. Whether these are the most appropriate measures of social welfare and the relative importance of changes in licensing markets on net social welfare are areas for further study.

### *B. Change in Licensing Activity*

Individual licensors and licensees base their decisions about patent and licensing activity on their expected costs and benefits from alternative actions. These decisions must be made under varying degrees of uncertainty about the rewards obtainable from licensing, the strength of the intellectual property in question, and the likely outcome of litigation should it be pursued. While license transactions vary widely in nature and purpose and are based on deal-specific factors such as the industry, stage of technology development, resources and budget constraints faced by the parties, the need for and availability of exclusivity, and whether the license involves cross-licensing or related transfer of technology, there are some basic factors common to most license decisions. I begin with a basic decision framework for a licensor and licensee deciding on whether to enter into a nonexclusive patent license, and then explore additional factors that will shape the licensing decision, such as exclusivity and budget constraints, and how these categories of license decisions may vary from the basic scenario. The changes in individual decisionmaking are used to inform predictions about the broader impact of the rule change on patent markets, litigation, and patenting activity. This approach provides a simple and systematic way of working through the effects of legal rule change on licensing decisions and, more generally, on social welfare.

1. *For the Licensor.* The *MedImmune* rule change increases the risk of a declaratory judgment action during pre-negotiation communications and creates a new risk to the licensor of a declaratory judgment challenge once the licensor has entered into a license. This includes both the risk of having to incur the cost of defending a declaratory judgment action, disruption of the licensing relationship, and a risk that the patent may be invalidated with a future loss of royalties from this and all other licenses. The increased risk of declaratory judgment challenges

will lower the expected value of a license to the licensor because: (a) the license provides the licensee with an opportunity to challenge the licensed patent (a risk that did not exist prior to the licensor/licensee negotiations); (b) the licensor loses control over where, when, and if to bring an infringement suit and the licensee now has sole control over that decision (greater uncertainty and, potentially, a change in odds of success in the patent dispute); (c) the licensor loses the ability to recover treble damages and attorney's fees and seek an injunction if there is a dispute over the patent; (d) future royalty streams must be discounted because the risk of challenge may be higher as the expected future royalty payments increase; and (e) if the licensor is budget constrained, the licensor may not be able to defend the challenge and risks losing the patent or an unfavorable renegotiation of license terms. Any declaratory judgment action will have an impact not only on the existing license, but on all of the licensor's other actual and potential licenses for and other benefits derived from the same patent.

2. *For the Licensee.* The rule change provides the licensee with a right that it did not have before. The expected value of a license to the licensee is generally higher (for any given royalty rate and license terms) with the right to bring a declaratory judgment action because: (a) the licensee has an opportunity to challenge the licensed patent that the licensee did not have prior to the license; (b) the licensee has to invest less in evaluating the patent prior to licensing because future challenge is not foreclosed and the licensee may be better off by obtaining a license early and, should it become beneficial, challenging the patent later (once it appears likely that there will be substantial royalties due); (c) the licensee can control where, when, and if to bring a declaratory judgment action; (d) the licensee does not risk treble damages, attorney's fees, and an injunction to challenge the patent (the risk of challenge is lower); and (e) the licensee may be able to negotiate concessions from the licensor through the threat of challenging the patent.

The availability of a declaratory judgment is similar to an option right—the right to take an action (bringing a declaratory judgment action) in the future if it becomes profitable to do so. The expected benefit of this option to the licensee may vary significantly depending on the nature of the license (with less benefit if it is exclusive) and the expectation of a successful challenge of the patent (with less benefit if the licensee has little expectation of winning a declaratory judgment action and has no reason to expect any strategic benefits from threatening the

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action). The value of the option will also depend on the expected cost of infringement behavior, with less relative benefit from licensing (and the option to challenge) if damages for infringement are lower. The benefit available to the licensee must also be weighed against the cost to the licensee of bringing a declaratory judgment action, which is not insignificant. In some cases, the licensee will not benefit at all from the option to bring a challenge and may actually be worse off if the licensor increases the license price (the royalty rate) to reflect its increased risk of licensing. After exploring a basic scenario, some of these additional factors are considered.

3. *The Basic Scenario.* We take as the basic scenario a nonexclusive patent licensing opportunity. The licensor can choose between bringing a lawsuit and licensing the patent.<sup>52</sup> The licensee chooses between taking a license and operating without a license (which in this model means facing an infringement suit from the licensor). If the licensor brings a lawsuit and loses, the patent is invalidated. But if the licensor wins, then the licensor receives damages. If the licensee brings a declaratory judgment action and the licensor loses, the patent is invalidated, but if the licensor wins, there are no damages because the licensee has been paying royalties and not infringing. It is assumed that each party has private information about the expected returns from the patented invention and the private cost of litigation, which means that the licensor cannot predict in advance whether a licensee will bring a declaratory judgment action or not.<sup>53</sup> The expected value of licensing is compared to the expected value of litigation for both parties under two scenarios—first, without the licensee right to bring a declaratory judgment action, and second, with the right. If the expected value of the license to the licensee increases more than the expected value of the license to the licensor falls, then the price (the royalty rate) for the license should adjust to provide for mutually agreeable license terms,

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52. In some cases, depending on the probability of losing patent rights in a declaratory judgment action and the damages and losses involved, it will not be beneficial for the licensor to offer a license (particularly because the loss to the licensor involves royalties from multiple licensees, and the licensee is only willing to pay for its own benefit) or to litigate. The prospective licensee is then left with the decision of whether to forgo use of the patented invention or to continue use and run the risk of a future infringement suit. Adding this third option (the “do nothing” option) to the licensor’s and licensee’s decision does not substantially alter the general results discussed, although it might change the magnitude of the effects.

53. When modeling litigation and settlement negotiations, assumptions of asymmetric or otherwise imperfect information is generally required to explain the failure of parties to settle in advance of a trial.

although as the royalty amount rises, the incentive for the licensee to bring a challenge (with the associated risk to the licensor of losing royalties) also rises.<sup>54</sup>

**Definitions:**

- EVa is the expected payoff to the licensor
- EVb is the expected payoff to the licensee
- p is the probability that the licensor loses and the patent is found invalid in litigation (either an infringement suit or a declaratory judgment action)<sup>55</sup>
- D is the damages that licensee pays if licensor wins an infringement suit<sup>56</sup>
- Ca, Cb is the cost of litigation (where Ca = cost for licensor; Cb = cost for licensee)
- L is the loss to the licensor if the licensor loses the patent suit (losing the patent)<sup>57</sup>
- q is the probability assigned by the licensor that the licensee will bring a declaratory judgment suit if the licensor enters into a license with this licensee<sup>58</sup>
- B is the benefit to the licensee from using the patented invention.
- Ra, Rb is the present discounted value of future royalty payments under the license (Ra for licensor; Rb for licensee)<sup>59</sup>
- R is the market clearing royalty for the license

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54. The economics literature stemming from Coase's work on the efficiency of contracts and the role of initial property right allocation in impacting the efficiency of the outcome may have applicability here. See generally R.H. COASE, *THE FIRM THE MARKET AND THE LAW* (1988).

55. Ideally, p should be a function of the quality of the patent, with a higher probability (higher p) of invalidation for lower quality patents.

56. D (the damages recoverable by the licensor) will be based on reasonable royalties, lost profits, and treble damages if willful infringement is found. It should be a multiple of R.

57. L reflects the aggregate future royalties obtained from all licensees and any other benefits that the licensor derives from owning the patent.

58. We have assumed that the licensee has private information about its expected costs under a license (royalties) and litigation (litigation cost), so the licensor does not know a priori whether the licensee will sue. Because both parties are likely to have some uncertainty about these variables, this assumption is not unreasonable. Because the royalty burden and the information learned about the patent may not be predictable at the start of the license, it will be difficult to determine in advance whether and when a licensee will have an incentive to bring a declaratory judgment action down the road.

59. R reflects the expected present discounted value of a stream of future royalty payments based on a particular royalty rate. We assume that there are no up-front fees (or at least that the future flow of royalties are a substantial part of the license consideration).

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We compare the expected return to the licensor ( $EV_a$ ) and the expected return to the licensee ( $EV_b$ ) under the following two scenarios.

**Case 1: Pre-MedImmune** (Licensee cannot bring a declaratory judgment action)

Licensor's Decision: License if  $EV_a(\textit{litigate}) < EV_a(\textit{license})$  (i.e. the expected benefit of litigating is lower than the expected benefit of licensing), otherwise litigate.<sup>60</sup>

$$EV_a(\textit{litigation}) = (1-p)D - pL - Ca$$

$$EV_a(\textit{license}) = Ra$$

If royalties were less than returns from litigation, the licensor would litigate.

So the licensor will only be willing to license if  $Ra > (1-p)D - pL - Ca$

Licensee's Decision: Accept license if  $EV_b(\textit{license}) > EV_b(\textit{litigate})$ , otherwise operate without a license and face litigation.

$$EV_b(\textit{litigation}) = pB - (1-p)D - Cb$$

$$EV_b(\textit{license}) = B - Rb$$

So the licensee will only accept a license if  $Rb < (1-p)(B+D) + Cb$

Note that as damages decrease, the royalty at which a licensee finds licensing an attractive alternative to infringing behavior goes down.

**Result:** There is a range of royalties for which licensing will be preferred for both parties because the royalty  $R$  can fall in the range:  $(1-p)D - pL - Ca$ ,  $(1-p)(B+D) + Cb$ . As the cost of litigation, the value of the patent to the licensor (as reflected by  $L$ ), and the value of using the patented technology for the licensee (as reflected by  $B$ ) go up, the range of royalties for which licensing will be preferred to litigation for both parties increases. A decrease in damages shifts the range of royalties down but does not broaden the royalty range.

**Case 2: Post-MedImmune** (Licensee can bring a declaratory judgment action)

Licensor's Decision: License if  $EV_a(\textit{litigate}) < EV_a(\textit{license})$ , otherwise litigate.

$$EV_a(\textit{litigate}) = (1-p)D - pL - Ca$$

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60. Clearly the licensor also has the option of doing nothing, but we assume that it will always be beneficial for the licensor to enforce its patent rights.

$$EVa (\text{license}) = (1-q)Ra + q[(1-p)Ra - pL - Ca]$$

$$\text{Licensor will only license if } Ra > (1-p)D - p(1-q)L - (1-q)Ca / (1-pq)$$

Now  $EVa$  (license) and the relative merits of licensing versus litigating have gone down, in comparison to Case 1. For the same royalty, the returns from litigation are unchanged from Case 1, but the returns from licensing are lower (i.e.  $(1-pq)Ra - pqL - qCa < Ra$ ), which means that the royalty range for which litigation is preferred to licensing is larger than in Case 1.

**Result:** The expected value of the license for the licensor goes down for any given royalty rate. The royalty that the licensor will require to license will be higher as  $q$  and  $p$  increase and will be higher as the potential damages from infringement litigation increase. The variable  $q$  reflects the risk of a declaratory judgment challenge. If licensors perceive the likelihood of challenge to be higher, they will be less willing to license without a royalty premium.

**Licensee's Decision:** If a license is offered, the licensee chooses between accepting a license or operating without a license and facing litigation, and if accepting a license, the licensee chooses between bringing a declaratory judgment action (DJA) or not.

$$EVb (\text{litigate}) = pB - (1-p)D - Cb$$

$$EVb (\text{license, licensee does not bring a DJA}) = B - Rb$$

$$EVb (\text{license, licensee brings a DJA}) = B - (1-p)Rb - Cb = (B - Rb) + (pRb - Cb)$$

Licensee will not accept a license if  $Rb > B+D$

Licensee will accept a license when  $Rb < B+D$

Licensee will accept the license and bring a DJA if:  $Cb/p < Rb < B+D$

Licensee will accept a license and will not bring a DJA if:  $Rb < Cb/p$

**Result:** The licensee has a broader range of royalties over which it will accept a license rather than litigating because now licensing is preferred if  $Rb < B+D$  and if  $Rb < (1-p)(B+D) + Cb$ . The value of the license to the licensee under Case 1 and Case 2 for the same royalty is the same if  $Rb < Cb/p$ , but the value of the license to the licensee under Case 2 is higher than in Case 1 for the same royalty if  $Cb/p < Rb < B+D$ .

Under this basic scenario, if the probability that a patent will be invalidated is 100% if a lawsuit is brought (i.e.  $p=1$ ), then

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the licensee will bring a declaratory judgment action when the licensee's costs of bringing such an action are lower than the expected royalty payments. If the probability that a patent will be invalidated is 0%, then no declaratory judgment actions will be brought.

The range of market clearing royalties for Case 2 is:

$$(1-p)D - p(1-q)L - (1-q)Ca / (1-pq) < R < \max [(B + D) , (1-p)(B+D) + Cb]$$

This can be compared to the range for Case 1:  $(1-p)D - pL - Ca , (1-p)(B+D) + Cb$

Because the licensor requires a higher royalty rate in order to license regardless of whether the licensee is benefiting from the right to challenge the patent, the range of market clearing royalties may not be larger than in Case 1. If it is not profitable for the licensee to bring a declaratory judgment action, the licensor will nonetheless require a higher royalty, and the range of market clearing royalties will be smaller, suggesting lower licensing activity. Litigation activity increases under this Case 2, both because in some situations the licensee will find it profitable to bring a declaratory judgment action and because the licensor will now prefer litigating to licensing in a larger number of situations.

As damages are decreased, the range of market clearing royalties increases (the decrease in the royalty that licensor requires is slightly higher than the decrease in royalty that the licensee is willing to pay) and shifts down, which suggests that lowering damages could decrease litigation because the licensor will be less willing to bring an infringement suit and the licensee will, at a lower royalty rate, be less inclined to bring a declaratory judgment action.<sup>61</sup>

The basic scenario excludes a number of variables specific to different categories of licensing decisions that will impact the expected benefit of the license to the licensor and licensee (and to third parties via externalities and transaction costs). The effect of the rule change on the expected value of the license for each party will depend on license-specific variables such as the strength of the patent and likelihood of successful challenge, the nature of the patented invention (essential versus useful, early stage versus proven), the type of license (exclusive versus

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61. If expected damages were to drop below the royalty that the licensor is seeking, however, litigation could increase because the licensee would prefer to risk litigation and operate without a license.

nonexclusive), the licensor's other licensing plans, and the resources and information available to both parties. Where the license is nonexclusive and the market is competitive, there may also be free-rider problems associated with the licensee decision to bring a declaratory judgment action.<sup>62</sup> Some key additional licensing variables, and the ways in which these variables may alter the results of the basic scenario, are explored below.

4. *Ability to Precommit Not to Bring Declaratory Judgment Action.* If the licensor and licensee can precommit not to bring suit, then the benefits of greater certainty will be available to bargain for and the parties should be able to agree on license terms.<sup>63</sup> In the basic scenario, the ability of the licensee to precommit not to bring a declaratory judgment action would have the effect of making  $q = 0$ , in which case the *MedImmune* rule would have no impact on the licensing decisions of either party once the licensee has precommitted to  $q = 0$ . As discussed below, the ability to precommit will not remove the impact of the rule on licensing decisions, however, although it may mitigate some of the effects. Courts are unlikely to enforce contract provisions that have the result of completely removing this licensee right to bring a declaratory judgment, and even if such provisions were to be enforced, the change in the initial allocation of rights will continue to influence the license negotiations and ultimate licensing outcome.

It is likely that an outright agreement not to bring a declaratory judgment action will not be enforceable because such a decision would be in potential conflict with the rationale underlying the *Lear* case (the importance of preserving the freedom of parties to challenge patents that they believe to be invalid by preventing license estoppel).<sup>64</sup> Terms that increase the

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62. In a perfectly competitive market for the goods produced by the licensee, and where all licensees need to obtain the nonexclusive license, it may not be in any individual licensee's interest to incur the expense of invalidating the patent because incurring such a cost will raise the licensee's production costs above the costs for all of the other licensees. While this is an extreme example, it illustrates that licensees may face a free-rider problem, with no licensee wanting to be the first to challenge the patent.

63. The Coase Theorem tells us that, given well-defined property rights, low bargaining costs, perfect competition, perfect information, and the absence of wealth and income effects, resources will be used efficiently regardless of initial ownership of the resources. Coase makes the point that where two parties can enter into contracts that will control the use of property (in this case intellectual property and the right to sue), then initial endowments (in this case the initial right to bring suit) will influence only the payments received by each party, not the resulting property use. COASE, *supra* note 54, at 104–06. This result changes once limitations are placed on the ability of the parties to contract, such as budget constraints or information asymmetries.

64. *Lear, Inc. v. Adkins*, 395 U.S. 653, 669–70 (1969).

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cost or reduce the attractiveness of declaratory judgment actions may, to the extent the parties expect them to be enforceable, effectively reduce or remove the option of bringing a declaratory judgment action. Examples of such provisions include: (a) the licensor's ability to terminate the license if a declaratory judgment is filed (a provision which may not be enforceable); (b) differential royalty rates, with higher royalties if there is a challenge or post-challenge; and (c) a liquidated damages provision based on the expenses and opportunity costs incurred by the licensor in the negotiation process. But it is unclear whether provisions such as these, which have the direct or indirect effect of penalizing a declaratory judgment action, will be enforceable, leaving licensors and licensees with residual uncertainty about the availability of the declaratory judgment challenge. Parties may be able to mitigate the effect of the rule change, but under the current state of the law, they cannot remove it. Differences in expectations of the enforceability of such terms could make license negotiations more challenging, as different parties assign different probabilities to the enforceability of their bargained-for agreements.<sup>65</sup>

To the extent that parties can include contract terms that prohibit the ability to bring a declaratory judgment challenge, the rule change is likely to increase the transaction costs of negotiating the license because the licensee now has an additional benefit to trade for other license terms, and the licensor's leverage to negotiate for the restriction may be limited—particularly where litigation is not a feasible alternative for the licensor. Moreover, the ability to agree in a contract not to bring a declaratory judgment suit does not solve the pre-negotiation risk that the parties face. The effect of the rule will still be felt in pre-contract negotiation, where the ability of the parties to precommit not to take certain actions will be limited. Use of confidentiality agreements and break-up fees for failed negotiations may provide some form of precommitment, but to get even to that stage of negotiation will require risk on the part of the licensor. The inability to obtain a precommitment not to file a declaratory judgment action before entering into a license will increase the cost and risk of licensing for the licensor.

5. *Exclusivity.* Where a licensee has an exclusive license, the licensee benefits from the right to exclude third parties from

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65. Coase emphasized the importance of clear property rights in ensuring that private party bargains will result in an efficient allocation of resources. Where property rights are not clear, initial endowment effects may reappear. COASE, *supra* note 54.

practicing the patented invention. This exclusivity would be lost if the licensee were to challenge the patent and win the suit. Where a license is exclusive, the licensee benefits from the ability to exclude others from using the licensed invention and the licensee incurs some loss if the patent is invalidated.<sup>66</sup> The exclusive licensee will have less reason to bring a declaratory judgment action than it would with a nonexclusive license, although this could change over the life of the exclusive license if the licensee develops its own proprietary technology position and no longer needs the exclusivity conferred by the licensed patent.<sup>67</sup>

Comparing the same two cases (pre- and post-*MedImmune*), but with an exclusive licensing arrangement, the benefit from using the patented technology is now:

$B$  = benefit to licensee from using the patented invention under an exclusive license

$b$  = benefit to licensee from using the patented invention without a license, where  $b < B$

If the licensor has only one exclusive license, then  $L$  will be close to  $Ra$  (and will equal  $Ra$  if there are no other potential licensees and no other benefits to the licensor from the patent). For this example we set  $L = Ra$  (in the basic scenario, it will generally be the case that  $L > Ra$ ).

#### Case 1: Pre-*MedImmune*

Licensor's Decision: License if  $EVa$  (*litigate*) <  $EVa$  (*license*), otherwise litigate.

$$EVa$$
 (*litigate*) =  $(1 - p)D - pRa - Ca$

$$EVa$$
 (*license*) =  $Ra$

$Ra > (1 - p)D - Ca / (1 + p)$  for licensor to prefer licensing to litigation.

Licensee's decision: Accept license if  $EVb$  (*license*) >  $EVb$  (*litigate*), otherwise operate without a license and face litigation.

$$EVb$$
 (*litigate*) =  $pb - (1 - p)D - Cb$

$$EVb$$
 (*license*) =  $B - Rb$

$Rb < B - pb + Cb + (1 - p)D$  for licensee to want to license.

66. The magnitude of the loss will depend in part on the elasticity of demand and supply for the patented product and the extent to which the patent is protecting the licensee from competition.

67. Although an exclusive licensee may feel less of an impact from the rule change because its benefits from the license are based at least in part on having a valid patent to enforce, where the licensee has the right to sublicense, it may face the ramifications of the rule change in its own activities if sublicensees have the right to challenge the patent.

**Case 2: Post-MedImmune**

Licensor's decision: License if  $EVa(\textit{litigate}) < EVa(\textit{license})$ , otherwise litigate.

$$EVa(\textit{litigate}) = (1 - p)D - pRa - Ca$$

$$EVa(\textit{license}) = (1 - q)Ra + q[(1 - p)Ra - pRa - Ca]$$

Licensor will be willing to license when  $Ra > (1 - p)D - (1 - q)Ca / (1 - 2pq + p)$

Licensee's decision: If a license is offered, the licensee chooses between accepting a license or operating without and litigating, and, if accepting a license, chooses between bringing a declaratory judgment action (DJA) or not.

$$EVb(\textit{litigate}) = pb - (1 - p)D - Cb$$

$$EVb(\textit{license is taken, licensee does not bring a DJA}) = B - Rb$$

$$EVb(\textit{license is taken, licensee brings a DJA}) = (1 - p)b + pB - (1 - p)Rb - Cb$$

Licensee will be willing to take a license when  $Rb < B - pb + (1 - p)D + Cb$  or  $Rb < pB + b(1 - 2p) + (1 - p)D / (1 - p)$  (this is a broader range than for nonexclusive licensing).

Licensee will take a license but will not bring a DJA when  $Rb < (1 - p)(B - b) + Cb / p$  (as compared to  $Rb < Cb / p$  for a nonexclusive license).

**Result:** With an exclusive license, the licensee gains less if the patent is invalidated because the licensee's benefit from using the patented technology depends in part on the ability to exclude third parties (i.e.  $B > b$ ), so the returns from bringing a declaratory judgment action to the licensee go down as compared to a nonexclusive license with the same royalty rate.

The licensee may still choose to bring a declaratory judgment action in some cases, particularly where the royalties are very high, the elasticity of demand for its product is very high, and the licensee has other sources of competitive advantage in the marketplace beyond the patent it has exclusively licensed (factors that would be reflected in a lower value for B).

6. *Budget Constraints.* The impact of the rule on early stage technology licensing, particularly licensing by universities and other nonprofit research institutions, has been raised as a concern in the wake of the *MedImmune* decision.<sup>68</sup> The concern is that certain licensors may not be able to finance the defense of their patent in a declaratory judgment action or, alternatively, will find the cost of obtaining financing very high.<sup>69</sup>

While all parties face a budget constraint, the budget constraint for some parties may be binding and may limit their ability to defend their patent in a lawsuit. In the most extreme case, the licensor will be unable to bring an infringement suit or defend a declaratory judgment action. Litigating for infringement at least offers the potential for damages and allows the licensor to determine when it may be profitable to bring an infringement suit (opening up the possibility for contingency fee financing), whereas declaratory judgment actions are a net cost to the licensor, so budget constraints may impede defense of declaratory judgment actions more than they do infringement actions. We can reflect on the impact of a limited ability to defend a declaratory judgment action with a higher probability of losing the lawsuit when it is a declaratory judgment action ( $P > p$ ) and/or a higher cost of defending the declaratory judgment action reflecting the higher financing cost ( $C_d > C_l$ ). Alternatively, the option of litigating could be replaced with the licensor option of doing nothing, with the assumption that the potential licensee still faces some cost of not obtaining a license from the increased uncertainty of using the patented invention without a license or from deciding not to use the patented invention.

Licensor's Decision (where licensee can bring a declaratory judgment action): If the probability of losing in a declaratory judgment action is higher than for litigation ( $P > p$ ):

$$EV_a(\text{litigate}) = (1 - p)D - pL - C_d$$

$$EV_a(\text{license}) = (1 - q)Ra + q[(1 - P)Ra - PL - C_d]$$

$EV_a(\text{license})$  is now lower than it was without the budget constraint because  $(1 - q)Ra + q[(1 - P)Ra - PL - C_d] < (1 - q)Ra + q[(1 - p)Ra - pL - C_d]$ , and the relative benefits of licensing to litigating are lower.

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68. See Brief of Amici Curiae the Trustees of Columbia University in the City of New York et al. Supporting Respondents at 20, *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2006) (No. 05-608) (arguing that a decision allowing licensees to challenge licensed patents while retaining the protection of the license would be "particularly damaging to educational institutions that support scientific innovation").

69. *Id.* at 21.

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**Result:** In comparison to the basic scenario there will be more cases in which the licensor prefers to litigate (or to forgo licensing and reserve the option to litigate) when the licensee can bring a declaratory judgment action.

Where the budget constraint impacts both the ability to finance an infringement action and the ability to defend a declaratory judgment action, the licensor may be better off doing nothing rather than licensing, in which case the licensor's decision becomes:

$$EVa(\text{do nothing}) = 0$$

$$EVa(\text{license}) = (1 - q)Ra + q[(1 - P)Ra - PL - Ca]$$

The licensor will be interested in licensing when  $Ra > q[PL + Ca] / (1 - qP)$ .

As  $P$  and/or  $Ca$  increase, the royalty that the licensor requires to consider licensing increases. As  $P$  and  $q$  become close to 1, there will be no royalty that will make licensing worthwhile. Parties wanting to use the technology will do so under the risk of an infringement suit.

Licensee's Decision (where licensee can bring a declaratory judgment action): The licensee chooses between accepting a license or operating without and litigating, and if accepting a license, chooses whether to bring a declaratory judgment action (DJA).

$$EVb(\text{litigate}) = PB - (1 - p)D - Cb$$

$$EVb(\text{license is taken, licensee does not bring a DJA}) = B - Rb$$

$$EVb(\text{license is taken, licensee brings a DJA}) = B - PRb - Cb$$

Where the licensee is required to pay for the license up front, there will be no savings from bringing a declaratory judgment action, because:

$$EVb(\text{license taken, licensee does not bring a DJA}) = B - Rb$$

$$EVb(\text{license is taken, licensee brings a DJA}) = B - Rb - Cb$$

Where the licensee cannot make such payments up front, the licensee's decision parallels that in the basic scenario except that the licensee is better off with  $P > p$  and will be more likely to bring a declaratory judgment action.

Where the licensee can't finance a declaratory judgment action, but the licensor still retains the expectation that the licensee will bring an action with probability  $q$ , the royalty that the licensor requires may go up without a corresponding benefit to the licensee.

The risk of a declaratory judgment action could well be the greatest for licenses to early stage technology and, even more, where the licenses are provided to resource-constrained emerging companies with limited up-front funds and an inability to pay high up-front license fees. The true value of the technology will be difficult to assess at early stages of the license, the license (particularly an exclusive license) will confer valuable first-mover advantages in developing the technology, and the royalty obligations (to the extent based on realized revenue) will accrue much later in the license term. The licensee will have an interest in obtaining a license early and waiting on its decision to challenge the patent—delaying the cost of evaluating the strength of the patent and the cost of litigating, and waiting until it knows what the anticipated need and royalty stream will be, as well as gaining a first-mover advantage when royalties are low or nonexistent and challenging the patent when the benefits have been reaped and the royalty obligations kick in. The right to challenge the patent at any time also provides the licensee with leverage in renegotiating license terms. As a result, a licensor of early stage technology will be more reluctant to license and will want to increase the up-front payments required for the license, while the potential licensees will be less able to finance any up-front license fees due to the uncertainty over the ultimate value of the licensed invention and, for start-ups, challenges more generally in obtaining financing for unproven technologies. Where opportunities to precommit not to challenge the patent are limited, the result may be a decision by the licensor not to license or a license opportunity that is too expensive for the licensee. There will also be a selection effect away from emerging companies with limited funds to those who are able to pay more up front for a license, regardless of ultimate expected value from use of the technology. Where the initial patent is licensed from a university or nonprofit research institution, the problem is compounded by licensor resource constraints, because the licensor may be unable or unwilling to enter into a license that would subject the licensor to litigation, particularly without the corresponding promise of recovering damages to defray the litigation costs.

Alternative pricing and compensation schemes may be able to mitigate some of the concerns about the risk of a declaratory judgment action by allowing the licensee to transfer something of value to the licensor up front. In the basic scenario, for example, when the licensee pays an up-front fee instead of a royalty, the licensee will have no gain from bringing a declaratory judgment action. While requiring the licensee to pay for the license in an

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up-front fee rather than as a royalty based on future earnings may reduce the incentive to bring a declaratory judgment, however, the licensees may also be budget constrained and unable to make any up-front payments for the license. O'Connor suggests that licensors can elect to take some combination of stock and stock options in the licensee entity to mimic royalties, providing some guaranteed stake in the upside of the licensing arrangement regardless of a licensee challenge that might disrupt royalties.<sup>70</sup> Licensors could also require up-front fees that take the form of secured debt, allowing deferred payment. Whether these compensation schemes will be as attractive to the parties, and will yield the same efficiency outcomes as licenses based on royalty payments, requires further analysis. One of the useful aspects of royalties, for example, is that this payment structure provides incentives for the licensor to protect and maintain the licensed patent and to minimize licensing activity that would harm the potential commercial value of the licensee's products, a partial alignment of licensor and licensee interests, which is particularly important where the licensor retains exclusive control over protection and defense of the licensed patent or retains the right to license others.

7. *Uncertainty.* Use of declaratory judgment actions by alleged patent infringers has been characterized by proponents as allowing licensees to remove the cloud of uncertainty hanging over their business decisions and equalizing the playing field for licensors and licensees by taking away the licensor's ability to unilaterally decide when, where, and whether to bring a lawsuit.<sup>71</sup> "Overall, the remedy of declaratory relief is designed to allow—and indeed encourage—courts to determine uncertain legal rights in cases such as patent disputes where uncertainty can cloud business decisions."<sup>72</sup> The effect of allowing declaratory judgment actions by the patent licensees does not remove uncertainty from the business decisions of patent owners and intended or actual users of the patented technology, however, but rather shifts the uncertainty involved in using patented technology from the potential or actual licensee to the licensor.

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70. Sean M. O'Connor, *Using Stock and Stock Options to Minimize Patent Royalty Payment Risks After MedImmune v. Genentech*, 3 N.Y.U. J. L. & BUS. 381, 453–54 (2007).

71. "The option of a mirror-image lawsuit removes the patentee's ability to decide unilaterally when, where—and, effectively whether—to file suit. For this reason, patent litigation is exemplary of the normative values that led to the passage of the Declaratory Judgment Act, including the delicate balance of ripeness, standing, and judicial access." de Larena, *supra* note 21, at 957.

72. *Id.* at 962 (citing *Aetna Life Ins. Co. v. Haworth*, 300 U.S. 227, 240 (1937)).

Prior to the license, the licensor has the ability to sue the potential licensee for infringement. During the license negotiations, the potential licensee may gain the opportunity to challenge the patent, and once the license is in place, the licensor relinquishes its ability to sue the licensee for infringement, but the licensee now has the right to seek a declaratory judgment action. The control over the proceedings, and the uncertainty over outcome, shifts. The declaratory judgment action allows the licensee a new way of addressing the uncertainty over patent value by licensing early and deciding whether to challenge the patent later, at the cost of the licensor. The patent licensor runs the risk of being tied up in patent litigation with one licensee that impacts multiple other licenses and runs the risk of multiple challenges from its licensees (because only a finding of invalidity will foreclose other suits)—a potentially large exposure for the licensor.

While the change in rule generates uncertainty for existing licensors as to whether their licensees will now bring a challenge, these licensors are largely stuck with their existing license terms.<sup>73</sup> Licensors entering into new licenses will have the opportunity to alter their license price to reflect the increased uncertainty about royalty flows and potential patent challenges. The change could be analyzed as a change in the initial allocation of risk that will become part of the contract negotiation and priced into the license, reflecting the gain to the licensee and the cost to the licensor. Strong patent rights will tend to reduce uncertainty in business transactions, and weaker patent rights (just like weaker property rights) will tend to increase uncertainty. Where patent rights are strong, parties will have clear expectations about the benefits of obtaining a license and the risks of not doing so and reliable expectations as to the outcomes of their alternative actions. Where patent rights are more difficult to enforce, contracts relating to the use of these rights will be harder to sustain. Greater uncertainty about patent enforceability leads to greater uncertainty about the returns available to the licensor and the benefits and costs of alternative actions to the prospective or actual licensee. To the extent that greater opportunity to challenge patents leads to greater litigation, which has unpredictable outcomes, the

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73. Arguments have been advanced to support the view that licensees should be held to the terms they agreed upon as part of the “benefit of the bargain” because all of the uncertainties have been factored into the deal already. Given the limitations on tools for patent valuation and pricing, however, it seems unlikely that the pricing was refined to reflect the initial allocation of risk in most cases.

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transaction costs of doing business using patented technology will increase. The increase in litigation may come not only from declaratory judgment actions, but also from defensive litigation by licensors. A licensor may seek to avoid the shift in control of litigation by litigating early, for example, filing a complaint as a defensive tactic before even initiating license negotiations. Uncertainty is itself a real and, in many cases, quantifiable cost that can be factored into the decisions made by the respective parties.<sup>74</sup> The impact of a change in uncertainty on license “price” may be difficult to predict, however, at least until markets emerge to price this risk (e.g. through insurance pricing to cover the risk of declaratory judgment actions).

Even if the uncertainty faced by the licensor can be factored into the license price, the current rule leaves some additional areas of uncertainty that will make licensing activity more costly. The application of the rule is discretionary, which leaves some variability in the process. The Declaratory Judgment Act provides courts with the discretion to determine whether and when to consider an action under the Declaratory Judgment Act, even when the suit satisfies the subject matter jurisdiction.<sup>75</sup> A question remains as to whether this will lead to more arbitrary decisionmaking—allowing courts to insert their views as to patent licensing and patents more generally. In addition, the rule has left licensors and licensees with uncertainty about the enforceability of provisions that are designed to limit or remove the opportunity of the licensee to challenge the license without terminating. The *Lear* decision provides that a complete prohibition on challenge, even after terminating or breaching the license, is not enforceable, but the extent to which this prohibition will be extended to include limitations on the right to bring declaratory judgment actions remains an open question. Licensors and licensees will have more provisions to negotiate and less certainty about the enforceability of those provisions. The amicus brief submitted by the Licensing Executives Society in the *MedImmune* case focused primarily on a request for greater certainty as to the boundaries and application of the rule, rather than on support for the respondent or petitioner, holding

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74. See Daniel A. Farber, *Uncertainty as a Basis for Standing*, 33 HOFSTRA L. REV. 1123, 1125–26 (2005) (discussing the Court’s tendency to distinguish between present harms and future risks, and why both should be treated as quantifiable injury for purpose of standing).

75. The Declaratory Judgment Act is “an enabling Act, which confers a discretion on the courts rather than an absolute right upon the litigant.” *Wilton v. Seven Falls Co.*, 515 U.S. 277, 287 (1995) (quoting *Pub. Serv. Comm’n of Utah v. Wycoff Co.*, 344 U.S. 237, 241 (1952)).

that this increase in uncertainty would increase the cost and difficulty of engaging in licensing.<sup>76</sup>

8. *Adverse Selection.* The potential disparate impact of the rule on different licensing decisions needs to be considered.<sup>77</sup> If benefits of using the technology are correlated with higher royalties, the licensee most likely to benefit from the license may be the one most likely to challenge the patent because the cost savings available from invalidating the patent will be higher. The ability to make up-front payments will be given a premium, at the expense of potential future returns generated from the technology—resulting in some cases in licensing technology for less efficient uses. The risk of a declaratory judgment action may also be larger for a licensor of platform technology that is useful to a large number of users than for a licensor of very specific technology with only a few interested licensees, meaning that broadly applicable technologies may become relatively harder to obtain a license to than those will fewer applications. Parties with poor quality patents may be the most willing to license because they are risking a less valuable asset, particularly where the accuracy of court proceedings is uncertain. Licensees may spend too little time in evaluating the strength of the patents they license, resulting in more licensing activity for sub-optimal patents. In all of these cases, adverse selection may result, with fewer licenses to those who benefit most from them as a result of the rule change.

Where there is a disparate impact of the rule on licensing of different types of technology (such as early stage versus more mature technology), there could be a change in the relative attractiveness of investing resources in such technologies, resulting in a change in resource allocation. Early stage technologies with potentially large future commercial benefits may be the hardest to license even though licensing is a critical part of ensuring that the technologies are deployed.

9. *Reputation Effects and Repeat Interactions.* It is important to recognize that licenses are not static events, but in many cases are dynamic long-term relationships. Mitigating factors that will offset the increased risk to the licensor and

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76. Brief of Amicus Curiae Licensing Executives Society (U.S.A. & Canada), Inc. in Support of Neither Party at 16, *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2006) (No. 05-608).

77. See Matthew Sag & Kurt Rohde, *Patent Reform and Differential Impact*, 8 MINN. J. L. SCI. & TECH. 1, 15–16 (2007) (noting that the solution is to reform the system so that bad patents are weeded out without undue prejudice to good ones).

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reduce the benefit to the licensee of declaratory judgment actions include repeated interactions and reputation effects. Where there is some likelihood that the licensee will need the licensor's cooperation on future matters, such as an amendment of the license to permit a broader field of activity or a renegotiation of other constraints or obligations, the licensee may lose its opportunity for renegotiation by bringing a declaratory judgment action. Companies who license from each other on a repeated basis will have less incentive to bring a declaratory judgment suit because this will impact their future license opportunities. As well as repeat dealings, reputation effects may also come into play. Where licensees need to license technology from multiple parties over time, they may benefit from maintaining a reputation for not challenging the patents they license, facilitating their ability to reach deals with future licensors and to obtain deals on better terms (the "no challenge" discount). Licensors may similarly be able to establish reputations for only licensing strong patents, for never renegotiating terms, and for aggressive and expensive defenses in a declaratory judgment suit setting. Even though contract provisions that limit the ability to bring declaratory judgment actions may not be legally enforceable, they may be sustainable through incentives created by repeated interaction and benefits of cooperation (or costs of failure to cooperate).

Many licensing arrangements include cross-licensing opportunities, in which each party is both a licensor and licensee of patents. An interesting question arises as to whether the *MedImmune* rule will have an adverse impact on cross-licensing, joint ventures, and collaborations. On the one hand, the parties may have the opportunity to sustain agreements not to challenge regardless of the enforceability of such provisions, because they can credibly threaten retaliatory suits if their patents are challenged. On the other hand, the increased risk (even if only a perceived risk change) may dampen interest in cross-licensing activities. Uncertainty over the implications of the rule change will most likely have some dampening effect on such arrangements, at least in the short run while parties search for new ways of sustaining cooperative arrangements. The impact of *MedImmune* on sublicensing also raises interesting questions about whether sublicensees will have the right to bring declaratory judgment challenges and about potential changes in sublicensing practices.

10. *Change in Likelihood of Success at Invalidating Patents.*  
The licensee's ability to control the place, timing, and decision to

challenge patent validity may alter the likelihood of a successful challenge to patent validity. This is potentially welfare increasing to the extent that it results in overturning patents that are invalid. There is some empirical support to suggest that a licensee may have more success in invalidating patents using declaratory judgment actions.<sup>78</sup>

*11. Transaction Costs.* The rule change introduced by *MedImmune* is likely to increase transaction costs associated with licensing. The addition of new and more complex contract terms designed to circumvent or mitigate the effects of the licensee's right to challenge could result in longer negotiation periods and increase the frequency of renegotiation. While in many cases renegotiation of license terms may be efficient to ensure continued efficient use of the licensed technology, using the risk of suit as a lever may lead to too much renegotiation. If additional terms are added to contracts, particularly if the enforceability of the terms is in question, the result could be more contract disputes. Where the rule change alters the relative attractiveness of licensing and patent infringement by increasing the cost of licensing or the attractiveness of defensive litigation, the licensor may engage in more patent infringement suits, including the filing of defensive suits as a prelude to license negotiations. The licensee will now also have a new opportunity and incentive to litigate, and the rule change could thus increase litigation through an increase in the number of declaratory judgment suits. While this may increase the opportunities for evaluating patent validity and removing "bad patents," use of the court system is expensive and has a cost not only for the litigants but also for the taxpayers who support the court system. The increased transaction costs associated with licensing post-*MedImmune*, such as increased length and complexity of negotiations, the more frequent use of courts, and the uncertainty associated with the agreed upon terms, will increase the cost of licensing for both parties and will add a new layer of transactions costs to the market for intellectual property.

The *MedImmune* decision and the Federal Circuit's subsequent decision in *SanDisk* create impediments for licensing by introducing a new risk for licensors who approach potential

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78. Even the odds of winning a case may turn on who initiated action. An empirical study by Professor Kimberly Moore found that who files suit is "a statistically significant predictor of who wins patent claims in jury trials." Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 405 (2000) (internal footnote omitted). According to Professor Moore's study, the advantage extends to findings of validity, enforceability, and infringement. *Id.*

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licensees who might need a license. While the *MedImmune* decision was focused on a licensee's ability to challenge a licensed patent without ceasing royalty payments, the decision leaves open the scope and boundaries of what affirmative acts will suffice for baseline jurisdiction. Depending on how the licensor's offer to license is made, it could be a sufficient basis to allow the potential licensee to bring a challenge. This is a cost and limit on the ability to communicate. The ability to communicate information about patents available for licensing and the ability to market new technologies will depend in large part on the line drawn by future cases dealing with pre-license communications. If this line is unclear, or if this line is drawn too close to simple information exchange, there will be a dampening of the willingness to share information about patented technology, and licensors may favor a decision to litigate rather than to enter into licensing negotiations.

*C. Benefit from Increased Court Challenges of "Bad Patents"*

The previous Section focused on the impact of the *MedImmune* decision on licensing. Determining whether increasing the ability of a licensee to challenge patents will reduce the number of "bad patents," at what cost, and for what benefit, is a second part of the social welfare calculation. Focusing again on the individual decisionmaking model, the licensee's incentive to challenge the validity of a licensed patent forms the starting point for this calculation.

1. *The Benefit.* The rationale in support of facilitating third party challenges is that licensees will be better informed about the patented technology than the U.S. Patent and Trademark Office and will be motivated to attack patents that they believe will be found invalid.<sup>79</sup> Licensees will have the incentive to explore potential weaknesses in the patent position as long as their benefit from royalty savings is larger than any benefit derived from relying on the patent to provide exclusivity. When a licensee successfully challenges and invalidates a patent, all parties will be able to use the subject matter of the invention without restriction. If the patent was protecting subject matter that should have been freely available, then the invalidation of the patent reduces deadweight loss, improving resource allocation and lowering future transaction costs involving the use

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79. See *Lear, Inc. v. Adkins*, 395 U.S. 653, 670–71 (1969) ("Licensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery.")

of this technology. When the cost of the declaratory judgment action, including the social cost of using the court system and the potential invalidation of valid patents, is lower than the deadweight loss created by licensing of an invalid patent and the license transaction costs, a declaratory judgment action may result in a social welfare improvement (and vice versa if the cost is higher).

2. *Divergence of Private and Public Interests.* These potential gains from expanding licensee opportunities to challenge patents are based on assumptions about licensee behavior that are called into question when examining the licensee's decision to bring suit. The licensee faces the decision at each point in time of whether to bring a declaratory judgment action or to continue with the license and associated royalty obligations in place. A licensee could have different reasons for bringing or threatening to bring a declaratory judgment action, including: (a) a reasonable belief that the patent is invalid or unenforceable; (b) a reasonable belief that licensee's own private activities are noninfringing; (c) renegotiation of license terms; (d) exploitation of a budget-constrained licensor who cannot defend a challenge to overturn the patent; and (e) strategic objectives such as retaliation for actions taken by the licensor or signaling of a general willingness to litigate when threatened. The licensee's incentives to bring a declaratory judgment action, and the timing for bringing such an action, will in many cases be misaligned with the public benefit from bringing such an action. The clearest opportunity for social welfare gain arises when the licensee challenges an invalid patent and wins the challenge. But the licensee's primary interest will be in avoiding royalties or license restrictions, factors that do not necessarily depend on patent quality and that may not come into play for the licensee until later stages of the license. The public interest is best served by early challenges to the validity or enforceability of poor quality patents for technology that is widely used, whereas the licensee's interests may instead lie in delayed challenges to patents and challenges without regard to patent quality. For example, an exclusive licensee of a patent critical to industry growth may have no incentive to challenge the patent, which blocks potential competitors, until the industry has found a way to circumvent the patent. Once alternative technologies have been developed, the licensee will want to remove its own royalty burden, but with little benefit to third parties. Where there are multiple licensees of a questionable patent, there will be free rider problems that will limit each licensee's incentive to bring a

declaratory judgment action, because costs would be borne by the individual licensee bringing the challenge but benefits will spread to all of its competitors. The potential benefit of allowing licensees to bring declaratory judgment actions will thus depend on whether the licensee's decision to challenge patents is limited to "bad patents," the extent to which the challenge focuses on noninfringement that is specific to the licensee's own products, the strategic factors driving the licensee's decision to bring suit, and the timing of the licensee's decision to challenge the patent.

An additional source of divergence of public and private benefit arises from the public costs of maintaining the court system. The licensee does not take into account the social cost of bringing a lawsuit. There are public costs relating to the adjudication of cases that are not absorbed by the private party litigants. The court system is subsidized and expensive to maintain, and court resources are limited, with backlogs of cases waiting for adjudication. Where lawsuits are settled prior to final adjudication, the court costs are incurred without any resulting benefit from removal of invalid patents. These enforcement costs must be taken into account when evaluating the effects of increased opportunity to challenge patents.

3. *Accuracy and Finality of Court Adjudications.* The social welfare effect of declaratory judgment actions on patent quality will also depend on the extent to which the challenges are directed towards challenging and result in overturning "bad patents" rather than valid patents. The empirical literature suggests that, as a generalization, just over half of litigated patents are held valid.<sup>80</sup> While this does not tell us the success rate or accuracy of the rulings in the declaratory judgment context, it does suggest that litigation will place a burden on a certain number of valid patents. The extent to which declaratory judgment actions remove "bad patents" but leave in place valid patents, and the extent to which licensees focus their actions on patents which are of questionable validity is a matter for empirical study.

The social welfare effect will also depend on whether the declaratory judgment actions proceed to a final decision and are not settled privately by the litigants. Private parties will have an incentive to reach a private settlement where the licensor stands to lose revenues from multiple licensees and can provide

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80. See John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205-06 (1998) (reporting that 54% of final patent validity decisions analyzed were valid).

sufficient payment to the single plaintiff–licensee. If the action is settled prior to a court ruling on patent validity, the patent will not be removed. Given the licensee’s interest in preventing competitors from benefiting from its own actions and the licensor’s interest in protecting other license revenues, both parties will have a strong incentive to settle cases and share the private gains from leaving the patent in place.

Finally, the magnitude of the impact on removing “bad patents” is likely to be small once the large costs to bringing a lawsuit are taken into account. Only a very small number of patent cases make it to trial, and out of those cases, the vast majority settle.<sup>81</sup> The costs of bringing a declaratory judgment action are similar to the cost of bringing an infringement action, imposing a high hurdle for licensees contemplating ways of avoiding a license or potential license. While few licensees may bring suit, the inability of licensors to predict in advance who these licensees are will mean that the option to bring suit impacts a broader range of license decisions.

#### *D. Impact on Future Patent Activity*

Whether patents fuel innovation and the impact of patent rights on the incentive to innovate continue to be subjects of active and important policy debate.<sup>82</sup> The traditional arguments in favor of the patent system are to provide incentives to invent, innovate, and disclose innovation, benefits which are weighed against the limitations on public access to and cost of using the resulting inventions. Detractors question whether patents promote rather than impede innovation and the diffusion of information.

The proponents of an increased right to challenge patents point to the public interest in promoting competition in the

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81. See Lemley, *supra* note 49, at 1501–03, for statistics on the number of patents litigated and the cost involved.

82. See, e.g., JAFFE & LERNER, *supra* note 4, at 43–44, 50 (arguing that though patents in general provide incentives to innovate, the current system generates waste and uncertainty that hinders innovation); Giovanni Dosi, Luigi Marengo & Corrado Pasquali, *Knowledge, Competition and Innovation: Is Strong IPR Protection Really Needed for More and Better Innovations?*, 13 MICH. TELECOMM. TECH. L. REV. 471, 477, 480 (2007) (suggesting patents can hinder research, and examining the emergence of the technology industry during a weak patent regime); Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 698–99 (1998) (arguing that patents for isolated gene fragments held by different owners will produce an “anticommons” in which the cost of research requiring multiple fragments inhibits innovation in the biomedical field); see also Roberto Mazzoleni & Richard R. Nelson, *Economic Theories About the Benefits and Costs of Patents*, 32 J. ECON. ISSUES 1031, 1033 (1998) (identifying four separate theories for the purposes of patents).

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market for ideas. Dreyfuss presents a strong critique of this public policy argument in support of promoting public access, arguing that “[w]hile allowing licensees to challenge patent validity may have the superficial appeal of protecting the public-access interest, that protection is obtained at costs the *Lear* Court failed to acknowledge.”<sup>83</sup> Potential costs include: (a) discouraging inventors from investing in innovation (through removing the value of estoppel to inventors); (b) shifting from patent protection to trade secret protection (undermining the public access benefit); (c) increasing the price of licenses to reflect the increased risk, with costs passed on to consumers, but without an alignment of licensee and public interest in the timing of the patent challenge (resulting from the divergence in public and licensee interests); and (d) shifting the licensee’s efforts to evaluate the validity of the patent and the need for a license to a later period, at which point the impact of the patent on the market may have waned through third party innovation or activity in infringement of the patent (again stemming from the divergence of licensee and public interests).<sup>84</sup> Dreyfuss argues that the arguments in support of public access through patent challenges do not appreciate the extent to which the licensee’s interests diverge from those of the public and the value of estoppel to inventors.<sup>85</sup> She suggests that the social welfare objective should be viewed more broadly as one of appropriately balancing the relationship between public access interest (i.e. removal of “bad patents”) and the goal of stimulating innovation with property rights (the dynamic effect of strong property rights).<sup>86</sup> Focusing on the individual decisionmaking models exposes the divergence of public and private interests, illustrating the problem of relying on third party actions to

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83. Rochelle Cooper Dreyfuss, *Dethroning Lear: Licensee Estoppel and the Incentive to Innovate*, 72 VA. L. REV. 677, 740 (1986).

84. *See id.* at 740–41.

85.

At the time that the inventor is deciding how and whether to finance further research and development, he must discount the rewards that the patent system offers . . . by the probability that his patent application will be rejected or the patent issued but subsequently declared invalid. . . . Because *Lear* prohibits him from shifting certain business risks vertically, he must discount his expected income stream by the probability that the licensee will avoid royalty payments by successfully challenging the patent.

*Id.* at 743 (internal footnote omitted).

86. As a way of evaluating rule modification to achieve this objective, Dreyfuss provides a test for appropriate modification of the *Lear* rule that is based on the ratio between the reward a given property right confers on the inventor and the social loss suffered by conferring that right. *Id.* at 741.

achieve the appropriate balance of public access and private incentives to innovate.

Whether stronger property rights result in more innovation is also a subject of disagreement. Despite efforts to find empirical support for the link between stronger patent rights and higher levels of innovation, the results remain indeterminate.<sup>87</sup> Alternative explanations of the benefits of the patent system have been provided to supplement the arguments in support of strong patent rights, motivated in part by the lack of empirical support for the “incentive theory” rationale for patents. Rationales for the value of patents include use to effectively partition and share assets, use to clarify ownership and to facilitate exchange, use for signaling purposes (such as to attract funding), and use to facilitate and reduce the cost of monitoring team production.<sup>88</sup> Where these alternative benefits are independent of the returns from enforcing and licensing the patents, these alternative benefits may mitigate the impact of the greater ability to challenge patents on patenting activity. Where they are related to the enforceability of the patents, the cost of any decrease in patent activity will be higher. Looking at data on patent challenges, “[o]ne lesson from post-1982 empirical studies is that patenting behavior is very sensitive to the perceived enforceability of issued patents. If patent validity rates start to go down, then we should also see a drop in patent applications.”<sup>89</sup> This suggests a potentially higher cost from any rule change that increases patent challenges.

Returning to the individual decision framework, if licensing activity becomes more costly and less profitable, and the risk of having patents invalidated increases, the expected return on obtaining patent protection and on inventions that would have been commercialized via patent licensing will go down. The stability and predictability of property rights facilitate business dealings, and by increasing uncertainty about the strength of property rights, the right to challenge will have a negative impact on the financing, licensing, and sale of patented inventions and the companies built around them. There will be a

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87. See F.M. Scherer, *The Political Economy of Patent Policy Reform in the United States* 9 (Harvard Univ. KSG, Working Paper No. RWP07-042, 2007) (examining empirical evidence that patent protection plays little role in product innovation, with the exception of the pharmaceutical industry).

88. See Heald, *supra* note 48, at 507. Heald provides an alternative rationale for the value of the patent form, arguing that patent law serves to lower transaction costs by allowing parties to effectively partition information assets, signal important information markets, and reduce the cost of monitoring team production.

89. *Id.* at 508.

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particularly strong negative effect on the ability to finance inventive activity that requires strong patent protection (such as drug development), counterbalanced perhaps by improved opportunities for new technologies in areas characterized by crowded intellectual property rights (such as certain innovations in computer software/hardware). While many companies and inventors will still find it profitable, albeit less profitable, to seek patent protection, the result is likely to be a drop in patenting activity. To the extent that the drop in patenting activity reflects a drop in opportunistic patenting of inventions that are of low quality (e.g. inventions that are obvious changes to existing knowledge) due to the lower expected value of licensing revenues and the chance of being challenged in court, the decrease will not be welfare reducing. But to the extent that the drop reflects a decision to use trade secret protection instead of patents, a decision to invest less resources in research and development, or a drop in innovation, the decrease in patenting activity will be welfare reducing.

*E. Net Effect on Social Welfare*

In the model I have proposed, the net effect of the expanded right to challenge patents on social welfare depends on the magnitude and nature of three types of social welfare impact—the cost and volume of licensing activity (and litigation), removing “bad patents,” and dynamic incentives to invent and patent.

Licensing is generally a social welfare improving activity, creating a market for the transfer and use of inventions by their most efficient users and increasing the liquidity of intellectual property assets. The above analysis suggests that the ability of licensees to challenge licensed patents is likely to increase the cost and reduce the volume of licensing activity overall, although there will be disparate effects on exclusive versus nonexclusive licensing and on different types of licensing parties and technologies. Allowing parties to contract away the right to bring a declaratory judgment may reduce, but will not remove, these effects because the risk faced by the potential licensor in pre-contract negotiations will continue to deter some licensing activity and transaction costs associated with negotiating a license will continue to be higher. Moreover, licensors and licensees face uncertainty about the enforceability of provisions that limit the effect of the rule, and licensees are limited in their ability to signal their likelihood of bringing a challenge. The increased uncertainty is a transaction cost that makes licensing

more costly, and is also likely to increase litigation as parties with divergent views seek clarity in the courts. By creating an impediment to communication between licensors and potential licensees, the rule change also makes it more difficult for licensors to enforce their patent rights through licensing rather than litigation. Indeed, the impact on pre-contract negotiations and uncertainty over the enforceability of contract terms will perhaps be some of the most significant factors in dampening licensing activity. There is likely to be an increase in litigation as a result of the rule change, both by licensors offensively (as litigation becomes relatively more profitable than licensing in some cases) and defensively (as licensors find it too challenging to navigate pre-contract licensing negotiations) and by licensees exercising their right to challenge licensed patents. The overall impact of the rule change on licensing, the first prong of the welfare analysis, is thus likely to be welfare reducing.

The effect of the rule change on elimination of “bad patents” is less easy to predict. If suits are brought primarily when the licensees have a reasonable basis for believing that the patents are invalid and the potential royalty savings to the licensee (and other licensees of the same patent) are higher than the social cost of litigating, then the procompetitive effect of removing “bad patents” could be important. But I argue that the divergence of private and social interests and the high cost of litigation and opportunity for private settlement will limit the realization of benefits. It is likely that the cost in terms of increased litigation and higher risk and cost of licensing will dominate the potential benefit of removing “bad patents” in light of the continued divergence of private motivations and public interests in the timing and selection of patent challenges and the incentive to settle cases brought. This prong of the social welfare analysis remains a point for empirical study.

The effect of the rule change on private incentives to innovate is perhaps the most difficult to measure, due in part to the lack of understanding about the factors that drive innovation. Returning to the individual decision framework, if licensing activity becomes more costly and less profitable, and the risk of having patents invalidated increases, the expected return on obtaining patent protection and on inventions that would have been commercialized via patent licensing will go down. Notwithstanding any potential benefits to companies involved in developing technologies that are impeded by third party patent rights, it is unlikely that a rule that operates by reducing the clarity and strength of intellectual property rights will ultimately improve the efficiency and functioning of markets and promote

private incentives to create assets that derive their value at least in part from these markets. Thus, my analysis suggests that the impact of the rule change on innovation, and thus on social welfare, is unlikely to be positive.

#### IV. CONCLUSION AND BROADER IMPLICATIONS

The issues raised by the *MedImmune* decision illuminate the current debate over the appropriate scope of patent protection, focusing attention on the potentially negative consequences of rules that weaken patent rights. Through an examination of the effects of expanded opportunities to challenge patents on licensing decisions, this Article provides a law and economics framework for translating the effects of legal rule changes into changes in patent market activity. My analysis suggests that the rule change introduced by *MedImmune* will increase litigation without necessarily improving patent quality, while decreasing the volume and increasing the cost of licensing. It suggests, furthermore, that these harms are likely to dominate any potential benefit of removing “bad patents.” The rule change will have an uneven impact on certain categories of licensors and licensees, with a particularly negative impact on licensors of early stage technologies and budget-constrained innovators such as research institutions and individual inventors. Allowing parties to agree by contract to restrict the licensee’s ability to challenge patents may mitigate these effects, but will not remove them. Indeed, the impact of the *MedImmune* decision and its aftermath on increasing the risk of pre-contract negotiations and deepening uncertainty about the enforceability of contract provisions will further dampen licensing activity and promote litigation. Uncertainty surrounding the ability to commercialize patents will make patenting activity less attractive.

The effects of the rule change will expand beyond licensing to hamper other patent market activities. The *MedImmune* decision comes at a time of expansion of intellectual property markets. As the markets develop, new market-based institutions have emerged to improve risk allocation and valuation and expand the liquidity of intellectual assets. Companies specializing in patent licensing and infringement have helped to increase patent liquidity, although whether the emergence of these players, sometimes referred to as “patent trolls,” has improved the functioning of intellectual property markets is an open debate.<sup>90</sup> Insurance markets now provide many types of

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90. See James F. McDonough III, Comment, *The Myth of the Patent Troll: An*

patent insurance. Markets for monetizing intellectual property, including use of patents to secure loans and the pre-sale of future royalties, continue to expand. The analysis in this Article suggests that reducing patent strength could impede the growth of these market structures.

The law and economics framework developed here also provides a new starting point for an empirical examination of the illusive question of how changes in patent law translate into changes in innovation and social welfare.<sup>91</sup> The traditional view that the role of patents is to provide inventors with the incentive to invent, develop their inventions, and disclose them to the public has received mixed reviews and limited empirical backing.<sup>92</sup> While there is general consensus that patents play some role in supporting technological innovation and economic growth, the mechanisms by which they do this and the magnitude and direction of their impact are not clearly understood. Similarly, the decisionmaking of licensors and licensees is not transparent. By focusing primarily on the decisionmaking of individual licensors and licensees and unpacking the factors that drive these decisions, this Article flags variables that are potential determinants of innovation and social welfare for empirical study.

The effect of the *MedImmune* decision on licensing activity must ultimately be evaluated within the broader context of legislative and judicial activity that, depending on your view, promises or threatens to reshape the patent market landscape. On the judicial front, the Supreme Court is taking an active role in reevaluating Federal Circuit rules governing patents and patent licensing. Its decisions suggest a concern with limiting the scope of patent rights and a reluctance to rely on market forces to curtail perceived abuse in the assertion of patent rights. On the legislative front, there has been significant questioning of the effectiveness of the current patent system in promoting competitiveness and innovation. A proposed Patent Reform Act of 2007, modeled on proposals introduced in 2005 and 2006, narrowly missed being

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*Alternative View of the Function of Patent Dealers in an Idea Economy*, 56 EMORY L.J. 189, 192–93, 211 (2006) (discussing the emergence of “patent trolls” and both their almost universal denunciation as well as the benefits they provide to society).

91. In addition to empirical work, application of models of uncertain product quality, contracting under uncertainty, and rules governing equity investments in companies of uncertain value drawn from the economic literature may yield additional benefits in refining and adding to the framework presented in this Article.

92. See, e.g., Mazzoleni & Nelson, *supra* note 82, at 1037–38 (“All of these studies [on the effect of patents on innovation] come to basically the same conclusion . . . . In a nutshell, patents are an important inducement to invention in only a few industries.”).

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adopted, and a 2008 version of the Patent Reform Act was under consideration by the Senate at the time of this writing.<sup>93</sup> The 2007 bill included provisions aimed at addressing concerns about patent quality, streamlining the litigation process, and the elimination of interference proceedings.<sup>94</sup> Underlying the support for patent reform legislation are concerns expressed by industry and lawmakers that poor patent quality, patent proliferation, and patent infringement suits are undermining U.S. competitiveness.<sup>95</sup> The framework provided in this Article readily extends to an evaluation of these proposed reforms.<sup>96</sup> The analysis suggests that any change in patent laws that seriously undermines the strength of patent rights will have a negative effect on patent markets and social welfare.<sup>97</sup> It concludes that the proposed patent reform legislation is misguided and itself in need of reform.

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93. Alston & Bird LLP, Patent Reform Act, <http://www.alston.com/patentreform/> (last visited Jan. 30, 2009).

94. Erik Larson, *Patent Reform Bill Lands in House, Senate*, IPLAW 360, Apr. 18, 2007, <http://64.237.99.107/media/pnc/0/media.580.pdf>.

95. See PRNewswire, *Coalition for 21st Century Patent Reform Statement on Introduction of House and Senate Patent Legislation*, Apr. 18, 2007, <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/04-18-2007/0004568707&EDATE=>. A coalition of over forty companies, including GE and Procter & Gamble, support the proposed patent reform legislation, emphasizing the “need today to secure the future of innovation with reforms that will improve the examination of patent applications and address issues of cost and uncertainty in patent lawsuits.” *Id.* There are also many industry players lining up against the proposed patent reforms, voicing concerns that the changes will have a negative impact on the strength of patent rights and jeopardize the effective functioning of the patent system. See Business Wire, *BIO Expresses Concerns Regarding New Patent Reform Legislation*, Apr. 18, 2007, <http://www.businesswire.com/news/google/20070418006289/en>. BIO stresses that “the ‘Patent Reform Act of 2007,’ as introduced today, also contains provisions that will weaken the enforceability of validly issued patents, and fails to include necessary reforms to make the patent system more objective and efficient” with significant negative consequences for intellectual property intensive companies.

96. The proposed changes to opposition proceedings, with a greater role for third party patent challenges post-issuance, extend the opportunity to challenge beyond licensees and prospective licensees. Proposed reforms that would curtail damages and increase the standard for findings of willfulness will decrease the third party risk of challenging patents, increasing the willingness of parties interested in using patented technologies (including licensees) to challenge patents. All of these changes can be reflected in changes in the variables in the licensing model provided in this Article.

97. This approach rests on several assumptions about the link between licensing behavior and social welfare. It assumes that factors that hinder licensing activity will reduce social welfare, and that facilitating markets for intellectual property contributes positively to the innovation process and thus to social welfare. It assumes that changes in individual licensing decisions influence and reflect behavior in other parts of the innovation chain feeding back into decisions about patenting and investing in research and development and forward into behavior in the product markets. Finally, the approach reflects a belief that licensing decisions are less heterogeneous and more amenable to a rational decision maker model than other types of decisions in the innovation chain and thus provide a good focal point for analytical study.