



Implementing the FRAND Commitment

Janusz Ordover and **Allan Shampine** examine the economic goals of FRAND terms for licensing standard essential patents and how FRAND commitments should be enforced to achieve those goals and avoid anticompetitive effects.

Enjoining Injunctions: The Case Against Antitrust Liability for Standard Essential Patent Holders Who Seek Injunctions

Douglas Ginsburg, **Taylor Owings**, and **Joshua Wright** challenge the use of antitrust law to prohibit standard essential patent holders from pursuing injunctions against potential infringers. They argue that antitrust enforcement is unnecessary to protect consumer welfare in these matters and may discourage participation by patent holders in procompetitive standard setting.

Abuse of Dominance by Patentees: A Pro-Innovation Perspective

Alden Abbott surveys the evolution of U.S. antitrust law's approach to the interface with patent rights, discusses academic research on the economic benefits of a strong patent system, and argues against expanded antitrust enforcement based on novel theories, such as limiting returns on intellectual property rights.

Actavis and Error Costs: A Reply to Critics

Aaron Edlin, **Scott Hemphill**, **Herbert Hovenkamp**, and **Carl Shapiro** defend their previously published analysis of the *Actavis* decision and argue that their proposed framework is supported by both the Supreme Court's decision and economic theory.

Nancy Rose, New Deputy Assistant Attorney General for Economics

Elizabeth Bailey and **Tracy Orcholski** review the published work of the Antitrust Division's new chief economist. They report that Rose's research, which is principally in the airline and electricity industries, focuses on data-driven analysis of how firms adjust their behavior, including with respect to non-price strategic variables, in response to government regulation.

Paper Trail: Working Papers and Recent Scholarship

Bill Page reviews a paper by **Michael Carrier** proposing, in light of the *Actavis* decision, an approach for assessing whether a reverse payment to settle pharmaceutical patent litigation is large enough to indicate an anticompetitive effect of the settlement. Carrier focuses on whether the payment benefits the generic manufacturer challenging a patent more than if the plaintiff had won its lawsuit.

Implementing the FRAND Commitment

Janusz Ordover and Allan Shampine

For many years, standard-setting organizations (SSOs) have required members to commit to license standard-essential patents (SEPs) on Fair, Reasonable and Non-discriminatory (FRAND) terms.¹ How FRAND terms can and should be interpreted has been the subject of extensive debate (as well as litigation in many jurisdictions). While we acknowledge other objectives behind these commitments, we focus here on their role as constraints on the ability of the holders of the SEPs to hold up implementers of such FRAND-encumbered patents, with potential anticompetitive effects.

In this article, we explain why, from a practitioner's perspective and given the economic goals of FRAND terms, a mere commitment to license on FRAND terms does not ensure that the *ex-post* negotiations will invariably satisfy the FRAND principles. We then describe when and how we believe FRAND commitments should be enforced to achieve the economic goals of FRAND terms and avoid anticompetitive effects.²

Goals for FRAND terms

Although standards can have benefits, collaborative standard setting by an SSO can raise competitive concerns. Failure to restrain or mitigate the possibility of anticompetitive conduct by SSO participants can reduce or eliminate the benefits of standards.

FRAND commitments have the following economic goals in order to address potential anticompetitive problems. First, a royalty for a FRAND-encumbered SEP should reflect *ex ante* competitive conditions rather than the *ex post* market conditions. This is because once the relevant IP is included in the standard and an implementer has included it in its product, competitive alternatives within the standard are extinguished. This may give the owner of the SEP *ex post* market power and the ability (albeit not necessarily the incentive) to engage in "hold-up." Second, a non-discriminatory royalty should offer the same terms to all similarly situated licensees, thus ensur-

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¹ See FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 192 (2011) [hereinafter FED. TRADE COMM'N, EVOLVING MARKETPLACE], available at <http://www.ftc.gov/reports/evolving-ip-marketplace-aligning-patent-notice-remedies-competition>. ("Many SSOs attempt to address this [hold-up] problem through disclosure and licensing rules. Disclosure rules typically require participants to disclose patents or patent applications during the standard setting process before a standard is chosen. Licensing rules typically require that participants agree to license disclosed patents on RAND (Reasonable and Non-Discriminatory) or FRAND (Fair, Reasonable and Non-Discriminatory) terms." Internal citations omitted.). We are not aware of any substantive difference between RAND and FRAND requirements. To avoid confusion, we will use the term FRAND throughout this paper.

² For more detailed discussions on the economic goals of FRAND terms and of the problems of hold-up and royalty stacking, see, e.g., FED. TRADE COMM'N, EVOLVING MARKETPLACE, *supra* note 1, at 191–94; Dennis Carlton & Allan Shampine, *An Economic Interpretation of FRAND*, 9 J. COMPETITION L. & ECON. 531, 536–45 (2013) [hereinafter Carlton & Shampine, *Economic Interpretation*]; Daniel Swanson & William Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market*, 73 ANTITRUST L.J. 1 (2005); Mark Lemley & Carl Shapiro, *Patent Hold-Up and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); and Joseph Farrell, John Hayes, Carl Shapiro, & Theresa Sullivan, *Standard Setting, Patents and Hold-up*, 74 ANTITRUST L.J. 603 (2007).

ing a level playing field for competition in products implementing the standard.³ Third, a fair and reasonable royalty should not subvert the SSO's goal of promoting wide adoption of a standard. That is, it would be helpful if it addressed the potential problem of royalty stacking or "Cournot complements."⁴ And, finally, the royalties should ensure there are adequate incentives for innovation by all firms, including those using the standard, and for bringing intellectual property into a standard.⁵

Why Can't Negotiations Alone Avoid Anticompetitive Problems?

The power of a FRAND commitment to influence behavior is determined in large part by its enforceability. To the extent the terms are well understood and parties can enforce them through the courts, one would certainly expect that the potential for recourse to the courts would impact negotiations. Indeed, it is generally the case that negotiations will be affected by the expected outcome of a possible litigation between the parties (e.g., if proposed terms are too different from what either party could expect to obtain through the courts, then parties have an incentive to go to court rather than accept the terms).⁶ However, it is sometimes asserted that there is no need for the courts to intervene because a patent holder that has made a FRAND commitment will not offer terms that are inconsistent with FRAND. Or, alternatively, that FRAND commitments require only "good faith" negotiation, and are simple commercial negotiations in which the courts should not intervene barring some egregious show of "bad faith." We believe otherwise.

Just because a commitment is made does not mean that the commitment will necessarily be honored, any more than the existence of a contract means that contracting parties will never breach it. Unless there is a way to make a FRAND commitment concrete, there is no guarantee of it being honored. That is, a FRAND commitment must be defined so that courts can determine whether the commitment is being honored or not. Furthermore, a FRAND commitment should be defined to address the potential anticompetitive problems raised by the standard-setting process. For example, if FRAND were interpreted to require only "good faith" negotiations, then, almost by definition, virtually any outcome of a bilateral negotiation could be deemed to meet the FRAND criteria. Such an interpretation would be economically vacuous. The patent holder would have the incentive to exploit whatever ability it may have to exercise hold-up, and a nebulous "good faith" requirement would provide no practical barrier to the ability to do so. One might argue that, if hold-up is not a significant problem, then the goal of providing incentives for innovation should take

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³ More specifically, non-discrimination should keep SEP holders from using their acquired market power to impede rivals in downstream markets or expropriate returns from product-differentiating innovations by rivals (or non-rivals). One of the authors has previously written about the importance of non-discrimination and how it can be used to address many of these concerns, particularly where comparable, FRAND-compliant benchmarks are available. Carlton & Shampine, *Economic Interpretation*, *supra* note 2, at 546–49; see also Richard Gilbert, *Deal or No Deal? Licensing Negotiations in Standard-Setting Organizations*, 77 ANTITRUST L.J. 855, 858–59 (2011); Dennis Carlton & Allan Shampine, *Identifying Benchmarks for Applying Non-Discrimination in FRAND*, CPI ANTITRUST CHRON., Aug. 2014 (1), at 2 [hereinafter Carlton & Shampine, *Identifying Benchmarks*].

⁴ Preserving *ex ante* competition and ensuring non-discrimination can be addressed even if it proves impractical to address royalty stacking. See Carlton & Shampine, *Economic Interpretation*, *supra* note 2.

⁵ We recognize there is debate about whether rates set on an *ex ante* basis provide appropriate incentives. We believe that they do. For opposing viewpoints, see, e.g., Richard Epstein, Scott Kieff & Daniel Spulber, *The FTC, IP, and SSOs: Government Hold-Up Replacing Private Coordination*, 8 J. COMPETITION L. & ECON. 1 (2012); John Golden, *'Patent Trolls' and Patent Remedies*, 85 TEX. L. REV. 2111 (2007); Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?* 4 J. COMPETITION L. & ECON. 535 (2008).

⁶ See, e.g., Carlton & Shampine, *Identifying Benchmarks*, *supra* note 3, at 3–6.

precedence and patent holders' negotiating ability should not be restricted. However, there is evidence to the contrary—that hold-up is a serious concern.⁷

Similar claims that licensing firms always have a self-interest to negotiate to a FRAND rate because of concerns about participation in future standards settings or repeated interactions with other SSO members are also belied by findings that rates demanded by licensors are at times multiple orders of magnitude above what is ultimately determined to be a FRAND rate.⁸ Such claims also fail to consider the importance of other strategic incentives to offer non-FRAND terms. For example, other SEP owners might approve of excessive demands for licenses to FRAND-encumbered patents rather than retaliate against the SEP holder at some future time. This is especially so if the firm being asked to pay the excessive rate is a strong competitor of the other firms. Indeed, one concern with collective action amongst competitors is that a group of competitors may work together to disadvantage another group of competitors, e.g., later entrants or firms with no SEPs.⁹ For example, if an entrant has been particularly successful competing against many SSO members, those firms might be more likely to reward the patent holder for seeking excessively high rates in future rounds of standard setting than to punish it. Similarly, different SSO members may have different incentives. Some may prefer to see precedents of high rates to be deemed as FRAND, so that they might themselves demand such rates in the future.

While any rate that parties agree on strikes some sort of “balance” between the licensor and licensee, we do not agree that the mere fact that a rate comes from a negotiation is enough to satisfy the strictures of FRAND. In particular, any agreement between a buyer and a monopolist exercising market power strikes a balance, but that balance reflects the exercise of market power. Hence, this *laissez-faire* interpretation of FRAND provides no meaningful restriction on the licensors' ability to exercise market power stemming from an inclusion in the standard. Nor does it offer a clear mechanism by which a potential licensee could challenge a rate as not being “reasonable” under FRAND. Neither party should be allowed to declare a rate to be FRAND without the other party having some mechanism to challenge that claim.

Who Can Obtain a License?

We now provide suggestions on how FRAND should be implemented from a practical perspective to address the antitrust concerns created through the collective action of SSOs. First, any firm should be able to obtain a license to SEPs covered by a FRAND commitment. In particular, the patent holder should not be able to restrict licensing based on a firm's location in the supply chain. We note that, if a patent holder offers licenses to only downstream firms and refuses to license upstream firms, it presumably expects this strategy to be more profitable than licensing upstream or not offering a license. This scenario gives rise to a serious concern that the patent holder may be attempting, by exercising hold-up, to extract part of the downstream firms' profits from functionality unrelated to the patent holder's patented technology. As a practical matter, it is likely to

⁷ See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 at *10–11 (W.D. Wash. Apr. 25, 2013) (Robarts, J.); *In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11-9308, 2013 WL 5593609, at *8–9 (N.D. Ill. Oct. 3, 2013) (Holderman, J.); Lemley & Shapiro, *supra* note 2, at 2025–35; Fiona Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463, 482 (2014).

⁸ See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013) (Robarts, J.); *In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11-9308, 2013 WL 5593609 (N.D. Ill. Oct. 3, 2013) (Holderman, J.).

⁹ See, e.g., Carl Shapiro, *Setting Compatibility Standards: Cooperation or Collusion?*, in EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY 91, 91–92 (Rochelle Cooper Dreyfuss, Diane Leenheer Zimmerman & Harry First eds., 2001) (discussing examples of participants in a standard-setting process abusing that process to exclude competitors from the market).

be easier for the patent holder to exercise hold-up and strategic discrimination against end product manufacturers than against component manufacturers.¹⁰ There are several reasons for this.

It would likely be more difficult for a judge or an arbitrator to determine whether the royalty claims of a SEP holder are reasonable when the end products are highly complex and contain multiple components, many of which may contain numerous SEPs. That is, attempting to determine the incremental value of patents for each end product manufacturer will likely be more costly and uncertain than determining that value to an upstream component manufacturer. Similarly, it may be more difficult for an end product manufacturer to use comparable licenses to avoid hold-up or discriminatory licensing terms because there is likely greater heterogeneity among end products than among components. Finally, the risks of litigating to obtain a FRAND rate may be greater for end product manufacturers than for component manufacturers because a trier of fact might be more willing to give a small royalty on a large base (the value of the end product) than a large royalty on a small base (the value of the component), even when the former results in a higher total payment. Hence licensing upstream potentially lowers the likelihood that the patent holder will try to exercise hold-up.¹¹

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In any event, we believe that the FRAND commitment requires the SEP holder to license any firm using the standard and seeking a license, regardless of the level of production.¹² This is particularly important as upstream firms may be impacted by the SEP holders' actions downstream. For example, if a downstream manufacturer is sued for infringement by a SEP holder, the downstream manufacturer may seek indemnity from an upstream supplier. Even if it does not seek an indemnity, the upstream supplier will be impacted by the changes in demand for its products should a SEP holder exercise hold-up against downstream firms. If an upstream firm is denied a license of its own, it may thus be itself impacted by a hold-up and violation of FRAND, but have no recourse.

When Should Firms Be Allowed to Stop Negotiating and Go to Court?

Either party should be able to go to court at any point to challenge a rate that is "on the table." If, alternatively, parties could not challenge rates during "ongoing" negotiations, then enforcing a FRAND commitment would be difficult.

To set up the issue, consider whether an opening offer (or even a couple of rounds of offers) made in "good faith" should be subjected to judicial scrutiny at a whim of either party.¹³ Should not the parties be required, at a minimum, to wait until negotiations have completely broken down and only then have the final offers evaluated by the courts? However, an approach that immunizes any particular offer by a SEP holder undermines the utility of FRAND because it provides no guidance for identifying the point in time during the negotiations at which either party could seek a judi-

¹⁰ We do not mean to suggest that end product manufacturers should not be licensed. Rather, we are concerned about situations where component manufacturers wish to take licenses and are not allowed to do so. In our view, a refusal to license a firm is inconsistent with FRAND.

¹¹ We recognize that there may be a trade-off between reducing the risk of hold-up and reducing the ability of the patent holder to engage in possibly economically efficient price discrimination (which may also be allowable under FRAND to the extent the end product manufacturers are not similarly situated). For further discussion of these trade-offs, see Carlton & Shampine, *Economic Interpretation*, *supra* note 2.

¹² Although it may be the case that there are efficiencies to negotiating licenses at a particular level of production, and, in the absence of any abuses, upstream firms may well not seek to obtain separate licenses.

¹³ For further discussion of some of the economics of bargaining in such situations, see Janusz Ordovery & Ariel Rubinstein, *A Sequential Concession Game with Asymmetric Information*, Q.J. ECON. 879 (1986); and Ariel Rubinstein, *Choice of Conjectures in a Bargaining Game with Incomplete Information*, in *GAME-THEORETIC MODELS OF BARGAINING* 99 (Alvin E. Roth ed., 1985).

cial determination of the appropriate rate.¹⁴ For example, if offers were not subject to evaluation, a SEP holder could make an initial offer reflecting substantial hold-up and then gradually reduce it over time but never to a level compliant with a FRAND commitment. Under this approach, the potential licensee would effectively be barred from challenging such a rate as being non-FRAND. The SEP holder could simply say that any particular challenged rate was part of an ongoing negotiation and so need not be constrained by FRAND. Similarly, a licensor must have an ability to eventually call off negotiations and seek enforcement of its patent rights.

In our view, interpreting FRAND as requiring only “good faith” negotiations is not an economically sound approach, nor one that can be readily evaluated from an economic perspective. The difficulty with an approach that relies on unrestricted negotiations can be illustrated by a licensee faced with an excessive royalty demand. If a licensee cannot go to the court while the patent holder is still “negotiating,” and there is no clear way to tell if negotiations have finally broken down, then the patent holder could derail a pending law suit at any time by making a new offer or claiming that it is still negotiating in good faith. Furthermore, once one party has gone to court for a ruling, allowing the other party to unilaterally derail the process by making a new offer that would require any challenge to be restarted would make it impractical to obtain relief through the court. It could also be very costly to society if such litigation were continuously started, stopped, and restarted.¹⁵ This untethered negotiations approach offers no relevant constraint on the market power created by the standard-setting process.

In the same vein, a potential licensee should not be able to indefinitely defer payments through stonewalling in negotiations. A patent holder should be able to discontinue negotiations with a potential licensee and sue for damages resulting from infringement based on a FRAND-compliant royalty (i.e., seek a judicial determination of a FRAND rate that the licensee should pay). And once a rate has been determined, the patent holder should be able to have payment of that rate enforced by the court, as we describe below.

It follows from this discussion that rates offered by patent holders should be bounded by a FRAND commitment. That is, all offers should be consistent with FRAND principles. This does not mean that there is always a unique rate that is consistent with FRAND principles, or that the parties will necessarily agree as to the boundaries of FRAND compliant rates. A range of rates may be “reasonable” under FRAND principles.¹⁶ Thus, it is entirely consistent with FRAND principles for an initial licensee to be given an offer that is FRAND-compliant and to bargain from there, potentially resulting in a final license at a lower, but still a FRAND-compliant, rate. (Similarly, the licensee may propose a lower rate and bargain from that to a higher rate.)

¹⁴ To be clear, in our view, the patent holder is obligated to offer a FRAND rate, and a licensee should be able to challenge a rate on the table. However, the patent holder should similarly be able to state that it believes the offer on the table is FRAND, and that a licensee should pay or be taken to court and forced to pay. Indeed, if there is a record of existing FRAND licenses, then a patent holder may not negotiate at all, but present non-discriminatory terms and inform the licensee that failure to accept those terms will result in litigation to enforce the patent holder's rights. Such litigation should, however, begin with an adjudication of the FRAND-compliant terms (i.e., we are not suggesting that a patent holder should be able to begin enforcement efforts with an injunction).

¹⁵ If the parties can jointly reach an agreement to settle the litigation, then that is efficient from an economic perspective; but neither party should be able to unilaterally force the other party to abandon an effort to have the court settle the disagreement.

¹⁶ There is a distinction between “reasonable” and “non-discriminatory.” An initial negotiation as to rates can occur over a range of “reasonable” numbers, but once a deal has been struck, that deal sets a benchmark for future deals through the “non-discriminatory” part of FRAND. However, as we discuss later, difficulties in comparing licenses, perhaps because of complicating factors such as cross-licenses, may require a court to engage in a hypothetical negotiation even when there are existing licenses.

However, explicitly allowing non-FRAND offers is problematic in several respects. As described above, doing so complicates, and potentially removes, the effectiveness of litigation as an enforcement mechanism. Also, a non-FRAND offer could be accepted, especially if non-acceptance can result in an injunction. That is, if a patent holder knowingly makes a non-FRAND offer, and a licensee accepts it (perhaps because its litigation costs are too high to make challenging the offer worthwhile, or perhaps because it lacks information to effectively assess the offer), it is implausible that the patent holder would subsequently inform the licensee that it was paying “too much,” and lower the royalty rate. Explicitly allowing a patent holder to ask for a non-FRAND rate would encourage patent holders to do so in the hope that a licensee will agree to that rate.

Should Defensive Suspension of Existing FRAND Licenses Be Allowed?

Patent holders should not generally be allowed to obtain injunctions in the presence of a FRAND commitment.

Defensive suspension of FRAND licenses by patent holders can raise concerns about hold-up. An example of defensive suspension would be where a component manufacturer has a general license from a patent holder, but a customer of the component manufacturer sues the patent holder for infringement, at which point the patent holder suspends the license granted to the manufacturer with respect to the customer suing the patent holder. Such conduct can be, in effect, tantamount to a sabotage of the third party’s business which is denied access to the components that are essential to the pursuit of its business.

In our view, defensive suspension, by its nature, means that the patent holder anticipates obtaining more from the licensee than it was getting under the existing license. That fact alone is problematic under FRAND, both with respect to hold-up and to non-discrimination. In particular, in our view, two firms are not differently situated with respect to FRAND just because one of the two licensees is suing the patent holder. Some commenters have suggested that an exception should be made if one SEP holder that has already granted a FRAND license is being sued by another SEP holder for a non-FRAND rate.¹⁷ Allowing defensive suspension in such a situation would be a form of fighting fire with fire—saying that if one party is not acting subject to FRAND, then the other party need not as well. More specifically, FRAND commitments sometimes contain reciprocity provisions where the commitment to provide a FRAND license is conditioned on obtaining a FRAND license from the firm seeking a license. While this may be an unobjectionable quid pro quo if neither party has an existing license from the other, complications may arise when one firm already has granted a FRAND-compliant license to the other firm’s SEPs, but has concluded that the other firm is asking for a non-FRAND rate. In such a situation, should the firm that has granted the prior license be able to suspend that license? To the extent that reciprocity is assumed under FRAND, such a suspension may be justifiable.

How Should Injunctions Be Treated in the Presence of a FRAND Commitment?

Patent holders should not generally be allowed to obtain injunctions in the presence of a FRAND commitment. As a matter of economics, injunctions are inimical to some of the fundamental objectives of FRAND, such as fostering broad licensing of SEPs and adoption of the standard. The inclusion of a firm’s technology in the standard, based on a collective decision of the members of the SSO, bestows potentially very large economic benefits on the SEP holder, such as the ability to collect royalties on all standard-compliant products and the enlargement of the volume of the products subject to the license. At the same time, the assurance that the IP owner will not be able to revoke

¹⁷ See, e.g., Mark Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1156 (2013).

the license to its SEPs reduces the risks associated with developing products covered by the standard. Because the implementers of products under a standard are locked into the technology, the impacts of granting or denying an injunction in this context are extraordinarily asymmetric.

An injunction provides a means for a patent holder to exercise the additional market power gained by inclusion of a patent in a standard, and the threat of an injunction places at risk the investment and ongoing profits of firms using the standard. This allows the patent holder to engage in hold-up and ask for payment in excess of the *ex ante* value of the patent.

Granting an injunction could inflict serious harm to a potential licensee's business and could lead to irreversible harm to the potential licensee's brand that cannot be compensated monetarily. On the other hand, denying injunctive relief to the SEP owner results only in compensable monetary damages, bearing in mind that SEP holders have agreed to accept royalties from any party in exchange for use of the patented technologies implemented in the standard.

One might suggest that always or generally denying injunctions in the presence of a FRAND commitment denies IP owners the ability to enforce their IP rights. In our view, the proper starting point in the presence of a FRAND commitment is the imposition of damages—i.e., forcing the infringer to pay a reasonable and FRAND compliant royalty. Courts impose infringement damages all the time and enforce those rulings. Generally, injunctions or exclusion orders should be granted only if an infringer has refused to pay an adjudicated FRAND rate, and enforcement through an injunction is more practical than enforcement of a damages order. That is, granting an injunction would be sensible if a court could not enforce a damages verdict but could enforce an injunction. However, such circumstances seem relatively unlikely to arise. Given the large potential harms from granting injunctions and the unlikely nature of the exceptions, a general policy of not granting injunctions for SEPs in the presence of a FRAND commitment might be safest.

How Should a “Reasonable” Rate Be Determined Under a FRAND Commitment?

Reasonable royalties under a FRAND commitment should be determined using the *ex ante* framework. Although standardization confers or enhances market power, this does not mean that the owner of FRAND-encumbered SEPs will actually convert this *de facto* monopoly into actual monopoly and engage in “excessive” licensing demands or other anticompetitive conduct. This decision is driven by the private incentives of the SEP owner. Inclusion in a standard lessens the competitive constraints facing the SEP holder and potentially gives it the ability to exercise market power and harm competition in a way that would not be possible if (as in the *ex ante* world) constraints from alternative technologies remained unaffected. The *ex ante* framework, although theoretical, provides a benchmark for the royalties and other terms that a SEP holder would be able to obtain if it had continued to face competition from alternative technologies, i.e., if it lacked the market power, in the relevant IP marketplace, that flows from its inclusion in the standard.

The *ex ante* framework for determining royalties under FRAND principles is widely, albeit not universally, accepted amongst economists. It has also been endorsed by the U.S. Federal Trade Commission.¹⁸ We are not aware of any SSOs that have explicitly endorsed the *ex ante* approach;

¹⁸ See, e.g., FED. TRADE COMM'N, EVOLVING MARKETPLACE, *supra* note 1, at 22–23 (“A definition of RAND based on the *ex ante* value of the patented technology at the time the standard is chosen is necessary for consumers to benefit from competition among technologies to be incorporated into the standard.”); see also Carlton & Shampine, *Economic Interpretation*, *supra* note 2, at 545; Microsoft Corp. v. Motorola, Inc., No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013); Daniel Swanson & William Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market*, 73 ANTITRUST L.J. 1 (2005); Fiona Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463 (2014).

neither have they generally endorsed any other approach.¹⁹ As we noted at the beginning, SSOs have generally left the interpretation of FRAND to lawyers, economists, and the courts.²⁰ When interpreting FRAND commitments, it is important to look at the underlying economics of the standard-setting process and the economic concerns, including competition policy concerns, which may arise as a result of the standard-setting process.

The goal [of the ex ante framework] is to preserve the benefits of any competition that was actually or potentially present prior to the standard being set.

To be clear, the *ex ante* framework asks what is the incremental value of the patented technology relative to the alternatives available prior to the standard being set. The goal is to preserve the benefits of any competition that was actually or potentially present prior to the standard being set.²¹ This framework can be implemented through a hypothetical negotiation in accord with factors enumerated in *Georgia-Pacific*,²² with appropriate modifications to reflect the FRAND commitment itself and, potentially, the possibility of royalty stacking. In this respect, we are dealing with a counterfactual exercise, and the relevant distinction is as to the timing of this counterfactual exercise: Is the hypothetical exercise done at the time when the IP embodied in the SEP is not in the standard (*ex ante*) or after it is in the standard (*ex post*)? The *ex ante* framework is not (or need not be) based on an actual negotiation that took place before the standard was set. If such a negotiation did take place, it would certainly be helpful to consider the results of that negotiation,²³ but such negotiations may not have occurred.²⁴ The *ex ante* framework simply asks what rate (or range of rates) would firms have agreed to, had the competitive alternatives to the SEP not been eliminated (and market power not been conferred or enhanced), by the standard-setting process?

As an illustration, consider that there is a standard for what a Martini cocktail consists of. Assume that the standard allows for any brand of gin, and that various brands of gin compete against each other for inclusion in the cocktail. Now assume that the official standard-compliant Martini requires brand X gin. This increases the market power of brand X (beyond the market power it may have had as a result of procompetitive product differentiation). In this setting, it may be relatively easy to ascertain the incremental value of the Martini standard if brand Y is swapped for brand X. Note that in this hypothetical exercise all other elements of the Martini standard remain unchanged. This allows us to isolate the incremental value of brand X gin within the standard. While there are certainly practical difficulties to conducting any counterfactual analysis, the widespread use of counterfactuals and the hypothetical negotiation construct indicates that these difficulties are not insurmountable.

¹⁹ Some SSOs implement other approaches that are clearly defined, such as royalty-free licenses. We refer here to particular interpretations of FRAND commitments.

²⁰ One solution that has been advocated is for SSOs to precisely define FRAND. However, that has not yet occurred to our knowledge, and may be rendered moot to the extent that courts define FRAND in a way sufficient to avoid antitrust liability.

²¹ Many standards do not become successful. By implementing an *ex ante* framework, SSOs can save themselves from the cost of having to conduct auctions or otherwise extensively investigate the relative prices and benefits of all possible alternatives. With the *ex ante* framework, that analysis can be done later only if the standard becomes successful, preserving the benefits of competition while conserving resources.

²² See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013) (referring to *Georgia-Pacific Corp. v. US Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970)).

²³ If it exists, such a negotiation can provide a reference point for the non-discriminatory aspect of FRAND. See, e.g., Gilbert, *supra* note 3, Carlton & Shampine, *Identifying Benchmarks*, *supra* note 4.

²⁴ In principle, non-discrimination can moot much of this process if benchmark licenses exist. Once a rate has been set, all other parties can take advantage of it, and, to the extent possible, we strongly endorse the application of the non-discrimination portion of FRAND. In practice, we recognize that the existence of cross-licenses and other idiosyncratic terms may complicate the process of comparing licenses, necessitating some individual analyses.

The hypothetical negotiation/*ex ante* framework also allows for use of the non-discrimination provision and evaluation of total implied royalties (royalty stacking) as guiding principles that may be particularly important if it is difficult to determine the incremental value of the relevant patented technologies. It is very difficult to completely address the Cournot complements problem underlying royalty stacking (i.e., the cumulative royalty burden associated with a standard) without setting all rates at the same time and in a coordinated way.²⁵ However, courts should nonetheless recognize the existence of the royalty stacking problem and that it can exacerbate the problems of hold-up and strategic action.²⁶ In particular, royalty stacking revolves around having multiple patent holders each of which is trying to extract the entire available surplus. Courts should be wary of granting the entirety of the surplus, or even a majority of it, to a patent holder simply because that patent holder is the first to go to trial. We recognize, however, that this is perhaps the most difficult element to implement.

What Royalty Base Should Be Used?

Most devices using standards have far greater functionality than just implementation of a particular standard. If profits from complementary innovations could have been achieved if some technology had been put into the standard other than an asserted SEP, then one should be concerned about the implementer being held up over those profits. In an *ex ante* negotiation, a patent holder's demand to share in the fruits of a manufacturer's innovative activities unrelated to the patent holder's contributions to the standard would not have succeeded. Thus, any such *ex post* demands are not "fair and reasonable." These concerns can be addressed in part by the choice of royalty base.

In considering the combined effect of the royalty base and rate, we do not want to imply that the mathematical trade-off between them creates indifference between the two elements of the formula. Rather, when both the base and rate vary significantly between heterogeneous products, it may become increasingly difficult to determine and apply FRAND-compliant royalty rates. One method we favor for dealing with product heterogeneity takes advantage of the fact that standards are sometimes embedded within particular components of downstream products such as, for cellular standards, baseband chipsets. Imposing royalties at the component level is attractive both for its relative simplicity and because it still rewards the innovator with increased revenues in the event of growth of the volume of sales or if the price of the component increases.²⁷ Another virtue is that charging a fee based on a component price ensures that the license terms can potentially be independent of the end use to which the chipset is put. Thus, unless the price of the component varies with the price of the mobile device, all devices will be burdened with the same license cost. This outcome is consistent with the non-discrimination provisions of FRAND.

Whether the base used is the price of a component or the price of a downstream product, the patent holder benefits from downstream innovation because such innovation increases sales of devices and, therefore, of components. Thus, although a component royalty base limits the patent holder's ability to obtain part of the profits flowing to the downstream manufacturers resulting from

²⁵ For a discussion on some possible ways to address this problem, see Jorge Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 ANTITRUST L.J. 47 (2013).

²⁶ See, e.g., Lemley & Shapiro, *supra* note 2.

²⁷ We assume here that the relevant standard is fully implemented within the component. Negotiations at a patent portfolio level, particularly ones including non-SEPs, may well be more complicated, particularly when patented technologies appear in multiple components, or in the interaction between components.

their investments in innovation, it does allow the patent holder to benefit from the expansion in sales driven by those downstream innovations. In particular, using a royalty base of the component can help prevent hold-up when it is difficult to determine and apply FRAND-compliant rates across a highly differentiated range of devices. Often, devices that incorporate significant differentiating IP are highly heterogeneous, while components which implement standardized technology are less so. With respect to the value of the technology, the standard is implemented in the component. Our concern about using the price of the downstream device is that its market price can reflect a great deal of value to consumers derived from other sources—value that a SEP holder can try to expropriate through holdup.

That is, although some components of a device may work better in conjunction with a standard, many others are simply unrelated. It makes economic sense to collect the license fees from components that implement and directly benefit from the standard. To the extent that an end product is more valuable to consumers if it complies with a standard, this differential value is unlikely to be fully attributable to the SEPs. The portion of the incremental benefit that could be attributed specifically to a patent holder's intellectual property is the amount above the base level that could be obtained by using unpatented technology in the standard.²⁸ In any event, the appropriate compensation for SEPs that contribute an incremental improvement to a standard cannot be the entire amount that a customer would pay for the functionality of the entire standard.

As a practical matter, it may be easier to evaluate the contribution of a given piece of IP to the economic value of a component that embodies it rather than to the economic value of the final product. As a result, it could be easier to gauge the FRAND rate using the component, rather than the final product, as a base. In addition, scores of standards comprising thousands of declared SEPs are often incorporated in different devices. Because of the concern with royalty stacking (the Cournot complements problem) described earlier, the greater the number of SEP owners that attempt to collect royalties on their SEPs (no matter how small their contribution to one standard implemented in one component of the end product), the higher the total royalty burden is likely to be. This problem can be at least partially addressed by limiting the royalty base to the component. This approach is consistent with the FRAND principle that a SEP holder should earn reasonable compensation while still protecting against the exploitation of market power by the SEP holder attributed to standardization.

What Are the Practical Challenges to Doing All This?

Often, it is not necessary to determine the precise boundaries of FRAND to decide whether a patent holder has stepped outside those boundaries, as the proposed rate is so far above the various benchmarks as to make the violation clear. For example, the courts in *Motorola v. Microsoft* and *Innovatio* found that the FRAND rates were orders of magnitude below the rates demanded by Motorola and Innovatio, respectively. It is commonly the case that qualitative statements are easier to make than quantitative (i.e., it is easy to look at something and say that it is bigger than a breadbox, while it would be more difficult to say by precisely how many inches is it bigger).

In any event, courts (and economists) deal successfully with such issues in patent litigation all the time. If they were entirely straightforward, the parties would likely not be in court. But the issues are resolvable, and courts do so regularly. To the extent that the FRAND analysis is different from

[I]t may be easier to evaluate the contribution of a given piece of IP to the economic value of a component that embodies it rather than to the economic value of the final product.

²⁸ The analysis is more complicated in the presence of patented alternatives. However, the key point that it should reflect the competition from the alternatives remains unchanged.

a typical royalty analysis, it is in some ways simpler. For example, the non-discrimination aspect of FRAND may render irrelevant many of the factors that come up in non-FRAND patent litigation.

Conclusion

In our view, the goals of FRAND commitments should be to avoid hold-up, to address royalty stacking, to provide a level playing field between competing users of the standard, and to ensure adequate incentives for innovation and participation in the standard. In order for FRAND commitments to provide any discipline on SEP holders, it is necessary that the option of litigation be clearly available and has some teeth to it. We have explained how we believe these goals are best achieved. ●

Enjoining Injunctions: The Case Against Antitrust Liability for Standard Essential Patent Holders Who Seek Injunctions

Douglas H. Ginsburg, Taylor M. Owings, and Joshua D. Wright

A standard essential patent (SEP) may give the patent holder market power in the market for an input that technology manufacturers need in order to make their products compatible with each other. Several commentators have argued that, when a patent becomes part of a standard pursuant to an agreement among competitors given in exchange for the patent holder's promise to license the technology under fair, reasonable, and non-discriminatory (FRAND) terms, antitrust law should limit the holder's right to seek an injunction to stop an infringing manufacturer from selling its standardized product. We disagree for two reasons: First, antitrust sanctions are not necessary, given the law of contracts and of injunctions, to avoid harm to consumers and, second, the application of antitrust law in this situation could, by undermining the ability of courts to tailor appropriate remedies, diminish the incentives for companies to innovate and for industries to adopt standards.

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Background

Because the bargaining that takes place between standard-setting organizations (SSOs) and patent holders yields competitive benefits,¹ consumer welfare is undoubtedly at stake when a SEP holder refuses to license under FRAND terms, whatever those may be. If a SEP holder that has agreed to license on FRAND terms is able to breach its commitment without consequence, then it will be able to extract more of the value from standardization than its contracted-for share. That the legal regime encourages entering into and adhering to FRAND terms is important, therefore, not only to preserve the benefit of private ordering but also to ensure the public does not pay a monopoly price for standardization in addition to the monopoly price that is the reward for invention.²

Because it is not always clear, however, what the FRAND price may be—either ex ante or ex post—disputes inevitably arise. Courts can and do resolve those disputes as a matter of contract

¹ See Renata B. Hesse, Dep. Ass't Att'y Gen., Antitrust Div., U.S. Dep't of Justice, Six "Small" Proposals for SSOs Before Lunch, Remarks as Prepared for the ITU-T Patent Roundtable (Oct. 10, 2012), available at <http://www.justice.gov/atr/public/speeches/287855.pdf> ("The [U.S. antitrust] agencies recognize[] that standards serve the public interest in many ways and collaboratively-set industry standards may substantially reduce transaction costs by helping firms avoid wars between competing standards").

² Cf. *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 500–01 (1988) ("There is no doubt that the members of [SSOs] often have economic incentives to restrain competition and that the product standards set by such associations have a serious potential for anti-competitive harm. Agreement on a product standard is, after all, implicitly an agreement not to manufacture, distribute, or purchase certain types of products. Accordingly, private standard-setting associations have traditionally been objects of antitrust scrutiny. When, however, private associations promulgate . . . standards based on the merits . . . and through procedures that prevent the standard-setting process from being biased by members with economic interests in stifling product competition, those private standards can have significant pro-competitive advantages." (citations omitted)).

The in terrorem effect of filing for an injunction depends upon the likelihood of it being granted.

interpretation.³ Nonetheless, some commentators have questioned whether the law of contracts is sufficient to achieve the FRAND price if the SEP holder can threaten the SEP user by filing for an injunction (or for an exclusion order from the International Trade Commission).⁴ On that view, seeking an injunction violates Section 2 of the Sherman Act because it reduces the number of competitors practicing the standard contrary to the SEP holder's agreement to license all comers, and it allows the SEP holder to monopolize the market for the product incorporating the standardized technology.⁵

An Antitrust Sanction for Seeking an Injunction Is Unnecessary

The in terrorem effect of filing for an injunction depends upon the likelihood of it being granted. In *eBay Inc. v. MercExchange, LLC*,⁶ the Supreme Court established the test for granting an injunction when a manufacturer infringes a patent, which applies equally when a SEP user does not pay the FRAND terms for a license. The SEP holder must demonstrate that:

1. it has suffered an irreparable injury;
2. remedies available at law, such as monetary damages, are inadequate to compensate for that injury;

³ See, e.g., *Microsoft Corp. v. Motorola, Inc.*, No. 10-1823, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013) (Judge Robart using a modified version of the *Georgia-Pacific* factors for determining "reasonable royalty" damages to set a FRAND range for fees to license a SEP); see also *Realtek Semiconductor Corp. v. LSI Corp.*, No. C12-3451, ECF No. 298, at 15–17 (N.D. Cal. Feb. 23, 2014) (instructing the jury specifically on the FRAND agreement "not [to] consider LSI's advantage resulting from the standard's adoption, if any, [but to] consider any advantage resulting from the technology's superiority"); *In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11-9308, 2013 WL 5593609, at *4–*8 (N.D. Ill. Oct. 3, 2013) (adopting and modifying Judge Robart's FRAND analysis).

⁴ See, e.g., Greg Sivinski, *Patently Obvious: Why Seeking Injunctions on Standard-Essential Patents Subject to a FRAND Commitment Can Violate Section 2 of the Sherman Act*, COMPETITION POL'Y INT'L, Oct. 2013; Am. Antitrust Inst., Request for Joint Enforcement Guidelines on the Patent Policies of Standard Setting Organizations 5–9, 14–15 (May 23, 2013), <http://www.antitrustinstitute.org/sites/default/files/Request%20for%20Joint%20Enforcement%20Guidelines%20on%20the%20Patent%20Policies%20of%20Standard%20Setting%20Organizations.pdf> (arguing an SSO agreement violates antitrust law if it does not prohibit the SEP holder from seeking an injunction); Wendy Fu, *Do SEP Holders Seeking Injunctions Violate Section 2?*, LAW360, Mar. 21, 2013, <http://www.law360.com/articles/425011/do-sep-holders-seeking-injunctions-violate-section-2> (warning SEP holders about potential Section 2 liability for seeking injunctions); Renata B. Hesse, Dep. Ass't Att'y Gen., Antitrust Div., U.S. Dep't of Justice, IP, Antitrust and Looking Back on the Last Four Years, Remarks as Prepared for the Global Competition Review 2nd Annual Antitrust Law Leaders Forum 15–19 (Feb. 8, 2013), available at <http://www.justice.gov/atr/public/speeches/292573.pdf> (suggesting Section 2 might create liability for SEP holders seeking injunctions: "This is an issue that we continue to look at and encourage members of the bar and academia to do so as well"). Although Hesse has never stated unequivocally that Section 2 liability should attach to seeking an injunction, commentators have attributed that view to her, see, e.g., Paul H. Saint-Antoine, *IP, Antitrust, and the Limits of First Amendment Immunity: Shouting "Injunction" in a Crowded Courthouse*, ANTITRUST, Summer 2013, at 41, 43 ("While Ms. Hesse's discussion of the FRAND issue was balanced, she left little doubt that her view was that, in some circumstances, antitrust enforcement might be warranted"), and she has not repudiated it, see Renata B. Hesse, *The Art of Persuasion: Competition Advocacy at the Intersection of Antitrust and Intellectual Property* 9 (Nov. 8, 2013), <http://www.justice.gov/atr/public/speeches/301596.pdf> ("We also continue to explore where there is room for liability under Section 2 of the Sherman Act in cases where holders of F/RAND-encumbered SEPs seek injunctive relief after a standard is in place. Even in cases where the patent holder did not intentionally deceive the SSO during the standards-setting process, competition and consumers can be harmed by the abrogation of the patent holder's F/RAND commitment, assuming there were alternative technologies or options available to the SSO.").

⁵ The same reasoning has been applied to argue that seeking an injunction (or exclusion order) is an unfair method of competition, in violation of Section 5 of the FTC Act. Complaint ¶¶ 20–21, *Robert Bosch GmbH*, FTC Docket No. C-4377 (Nov. 21, 2012), available at <http://www.ftc.gov/sites/default/files/documents/cases/2012/11/121126boschcmpt.pdf>; Complaint ¶¶ 25–26, 31, *Motorola Mobility LLC*, FTC Docket No. C-4410 (July 23, 2013), available at <http://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724googlemotorolacmpt.pdf>. Some commentators believe Section 5 is a better option for imposing antitrust liability upon SEP holders for seeking an injunction. See, e.g., Saint-Antoine, *supra* note 4, at 47; Robert A. Skitol & Kenneth M. Vorrasi, *Patent Holdup in Standards Development: Life After Rambus v. FTC*, ANTITRUST, Summer 2009, at 26, 31.

⁶ 547 U.S. 388 (2006).

3. considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and
4. the public interest would not be disserved by a permanent injunction.⁷

Courts often deny SEP holders' requests for injunctions based upon the *eBay* factors.⁸ The fourth factor—public interest—allows judges to consider harm to consumers. If the SEP holder could enjoin the sale of the end product that includes the SEP, then it could potentially exercise power in the market for the product incorporating the standardized technology by raising either the price of the product or the licensing fee it charges other sellers. It could in this way extract the entire benefit not only from standardization but also from any other cost savings or innovation that competing manufacturers contributed to the end product. Justice Kennedy, concurring in *eBay*, explained this situation, often referred to as a “patent hold-up,” as follows:

The antitrust

enforcement agencies

themselves agree

the ITC can protect

consumer welfare

under these standards.

When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.⁹

Moreover, the SEP holder's promise, as part of the FRAND agreement, to license the patent for a fee is evidence under the first and second *eBay* factors that an injunction is not warranted because monetary damages are available and adequate to compensate the SEP holder. In most cases, therefore, an injunction will be inappropriate. Indeed, the Federal Circuit recently observed that “Motorola's FRAND commitments, which have yielded many license agreements encompassing the [SEP], strongly suggest that money damages are adequate to fully compensate Motorola for any infringement,” but the court prudently, we think, declined to adopt a per se rule against injunctions for SEPs subject to FRAND commitments.¹⁰

Although the ITC is not bound by the *eBay* factors in deciding whether to grant an exclusion order,¹¹ the factors it must consider under Section 337 of the Tariff Act perhaps go even more directly to protect the interests with which antitrust law is concerned. Those factors include:

1. the public health and welfare;
2. competitive conditions in the U.S. economy;
3. the production of like or directly competitive articles in the United States; and
4. U.S. consumers.¹²

The “welfare,” “competitive conditions,” and “consumer” considerations each point in the direction of denying an exclusion order that would allow a SEP holder to extract value from standardization or from other features of the end product not attributable to its IP if that value would normally be passed on to the consumer through competition. The antitrust enforcement agencies themselves agree the ITC can protect consumer welfare under these standards. The Federal Trade Commission, in testimony before the Congress in 2012, expressed the Commissioners' unanimous belief that “the ITC . . . has the authority under its public interest obligations to address

⁷ *Id.* at 391.

⁸ See *Saint-Antoine*, *supra* note 4, at 43 (collecting cases).

⁹ 547 U.S. at 396–97.

¹⁰ *Apple Inc. v. Motorola*, 757 F.3d 1286, 1331–32 (Fed. Cir. 2014).

¹¹ See *Spansion, Inc. v. ITC*, 629 F.3d 1331 (Fed. Cir. 2010).

¹² 19 U.S.C. § 1337(d).

this concern and limit the potential for hold-up.”¹³ Likewise, the Antitrust Division of the U.S. Department of Justice, along with the U.S. Patent & Trademark Office, just last year issued a policy statement urging the ITC, under its public interest mandate, to deny exclusion orders that would be anticompetitive.¹⁴ The U.S. Trade Representative has seemingly adopted that position and has instructed the ITC to make findings on competitive issues before issuing exclusion orders.¹⁵ The ITC has responded by asking parties for submissions on these issues.¹⁶

The end result is that, despite all the handwringing over the prospect of SEP holders using injunctions and exclusion orders to suppress competition and extract above-FRAND licensing fees, we have not found even one injunction or exclusion order that actually kept a product off the shelf because it infringed a SEP. Gupta and Snyder’s recent study of cases filed since 2000 in the “smart phone wars” found no injunction and only one exclusion order imposed for infringing a patent that was pled as a SEP, but even that exclusion order was vetoed by the U.S. Trade Representative as contrary to the public welfare.¹⁷ The one example commonly invoked by concerned commentators, *Commonwealth Scientific & Industrial Research Organisation v. Buffalo Technology Inc.*,¹⁸ involved a patent the holder did not plead as a SEP. In any event, the judge granted an injunction only after expressly considering the competitive conditions in the market and concluding the “public interest would not be disserved by a permanent injunction because [standardized end] products are obtainable from multiple sources other than [the infringer].”¹⁹

If a SEP holder cannot eliminate (or credibly threaten to eliminate) competition by getting an injunction, then it cannot distort licensing negotiations, contrary to what some commentators have suggested,²⁰ and contract law should provide SEP users with sufficient means for protecting their interests in a FRAND licensing rate. Antitrust enforcement is therefore an unnecessary response to a SEP holder seeking an injunction.

Some commentators have argued that manufacturers using SEPs will not bother to assert their contract rights, figuring they face no competitive disadvantage if the SEP holder extracts an above-FRAND price from every SEP user that manufactures the end product,²¹ which would result in a uniformly higher cost being passed on to the consumer.²² We depart for a moment from our

¹³ *Oversight of the Impact on Competition of Exclusion Orders to Enforce Standard-Essential Patents: Hearing Before the S. Comm. on the Judiciary*, 112th Cong. 1–2 (2012) (statement of the FTC), available at <http://www.ftc.gov/os/testimony/120711standardpatents.pdf>.

¹⁴ U.S. Dep’t of Justice & U.S. Patent & Trademark Office, Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary FRAND Commitments (Jan. 8, 2013), <http://www.justice.gov/atr/public/guidelines/290994.pdf>.

¹⁵ Letter from U.S. Trade Representative Michael B.G. Froman to U.S. ITC Chairman Irving A. Williamson Vetoing ITC-794 Exclusion Order (Aug. 3, 2013), http://www.ustr.gov/sites/default/files/08032013%20Letter_1.PDF (citing the policy statement and instructing the ITC to make findings regarding the potential for patent hold-up).

¹⁶ *See, e.g.*, Certain Audiovisual Components and Products Containing the Same, Inv. No. 337-TA-837 (Oct. 17, 2013) (review of final initial determination).

¹⁷ Kirti Gupta & Mark Snyder, *Smart Phone Litigation and Standard Essential Patents* 13 (IP2 Working Paper No. 14006, 2014), available at <http://www.hoover.org/sites/default/files/ip2-wp14006-paper.pdf>; Froman Letter, *supra* note 15, at 3.

¹⁸ 492 F. Supp. 2d 600 (E.D. Tex. 2007).

¹⁹ *Id.* at 607.

²⁰ *See, e.g.*, Saint-Antoine, *supra* note 4, at 45.

²¹ *See* Farrell et al., *Standard Setting, Patents, and Hold-Up*, 74 ANTITRUST L.J. 603, 645 (2007).

²² *See* George S. Cary et al., *The Case for Antitrust Law to Police the Patent Holdup Problem in Standard Setting*, 77 ANTITRUST L.J. 913, 941 (2011).

Overdetering SEP holders from seeking an injunction . . . enables a SEP user to negotiate in bad faith, knowing its exposure is capped at the FRAND licensing rate, and requires a SEP holder to take a below-FRAND price from an unscrupulous or judgment-proof SEP user.

focus upon injunctions to point out that both theory and evidence make this concern implausible. If a manufacturer can undercut all its rivals' prices by going to court to vindicate its contract right to a FRAND price, then the incentive to do so, i.e., the opportunity to increase its sales and to capture the market even for a time, will be great. That SEP users are in fact modifying SSO contracts over time in order better to protect their rights²³ certainly suggests they intend to assert those rights.

An Antitrust Sanction for Seeking an Injunction Would Be Harmful

An antitrust remedy is not only unnecessary to protect consumer welfare when the law of contracts and injunctions is sufficient, it would be harmful. First, a familiar point: antitrust liability comes with treble damages and so is most appropriate when anticompetitive conduct is difficult to detect or otherwise unlikely to be litigated. Because initiating litigation by filing for an injunction entails neither of these problems, treble damages will overdeter SEP holders that need an injunction to recoup the value added by their patents and have no other adequate remedy against an infringing user.²⁴ Indeed, excessive deterrence is particularly likely because the outcome of an antitrust case would be uncertain. Liability would attach based in significant part upon whether the SEP holder refused a FRAND offer, but what constitutes a FRAND price is far from clear. A SEP holder with a meritorious position reasonably may fear a contrary finding and abandon its right to an injunction in order to avoid the risk of being held liable for treble damages.

For instance, a SEP holder may require injunctive relief against a SEP user that is or appears or claims to be judgment proof or consistently and in bad faith rejected FRAND terms to gain leverage in negotiations by putting the SEP holder to the need for costly litigation. Bo Vesterdorf, the former president of the General Court of the European Union, makes the point with unmistakable clarity:

If such SEP owners, when they believe that the only way to get [a SEP user] to accept to take a license is to seek an injunction against the unauthorized and thus illegal use of the SEP, run the risk of being found to abuse a dominant position with the ensuing risk of potentially large fines, it puts them in a position of unwarranted legal uncertainty.²⁵

This uncertainty is not only bad for private parties, it is contrary to the public interest in dynamic competition. Overdetering SEP holders from seeking an injunction effectively diminishes the value of their patents and hence their incentive to innovate.²⁶ It enables a SEP user to negotiate

²³ See Joanna Tsai & Joshua D. Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L.J. (forthcoming 2015) (Working Paper available at <http://dx.doi.org/10.2139/ssrn.2467939>); Anne Layne-Farrar, Gerard Llobet & Jorge Padilla, *Preventing Patent Hold Up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting* 5–6 (Working Paper May 5, 2008), available at <http://dx.doi.org/10.2139/ssrn.1129551>.

²⁴ Cf. Bruce H. Kobayashi & Joshua D. Wright, *The Limits of Antitrust and Patent Holdup: A Reply to Cary et al.*, 78 ANTITRUST L.J. 505, 510–11 (2012) (“Because multiple damages are not required to generate optimal deterrence, remedies for breach of contract, or preventing the enforcement of the patent through estoppel, waiver, or other equitable doctrines, can serve to optimally deter undesirable patent holdup if they impose approximately single damages.”).

²⁵ Bo Vesterdorf, *Antitrust Enforcement and Civil Rights: SEPs and FRAND Commitments*, COMPETITION POL’Y INT’L, Aug. 2014, at 3.

²⁶ See *id.* (a prohibition on seeking an injunction “may discourage [SEP holders] from contributing their technology to standards and from accepting to commit to license on FRAND terms, or even discourage them from investing in R&D as much as they would otherwise have done”); Bernhard Ganglmair, Luke M. Froeb & Gregory J. Werden, *Patent Hold-Up and Antitrust: How a Well-Intentioned Rule Could Retard Innovation*, 60 J. INDUS. ECON. 249 (2012).

in bad faith, knowing its exposure is capped at the FRAND licensing rate, and requires a SEP holder to take a below-FRAND price from an unscrupulous or judgment-proof SEP user.²⁷

Moreover, a patent holder may not want to contribute its technology to an SSO under FRAND terms if doing so will require it to give up the option to protect its rights by seeking an injunction against infringing users.²⁸ These possibilities, far from protecting the public interest in competition and innovation, actually threaten the gains from innovation and standardization.

What About the Noerr-Pennington Doctrine?

We have shown above that, for two reasons, antitrust law should not be invoked against a SEP holder for seeking to enjoin infringement of its patent: antitrust law is not needed to protect consumers from injunctions that suppress competition, and overdeterrence of SEP holders seeking injunctions would be harmful to the public interest in competition and innovation. We turn now to the question whether antitrust law could constitutionally be put to that use. Does the *Noerr-Pennington* doctrine,²⁹ which precludes antitrust liability for the act of petitioning the government and conduct incidental to petitioning the government, protect a SEP holder that files for an injunction or an exclusion order?

In our view, the *Noerr-Pennington* doctrine most assuredly does protect a SEP holder that sues for an injunction or threatens to do so, for the fundamental reason that petitioning is protected by the First Amendment and the court (or the ITC) works as a gatekeeper against requests for injunctions that would harm the public, just as the legislature works as a gatekeeper balancing the interests affected by a petition for anticompetitive legislation.³⁰ Asking for the relief alone does not monopolize the market because courts independently assess the proper outcome.

Furthermore, inasmuch as the harm is said to be complete with the mere threat of an injunction,³¹ that threat is only as powerful as the standards for getting an injunction are weak. When the

²⁷ For a model of FRAND licensing negotiations, see James Ratliff & Daniel L. Rubinfeld, *The Use and Threat of Injunctions in the RAND Context*, 9 J. COMPETITION L. & ECON. 1, 9 (2013):

The crucial element of this model that substantially diminishes the likelihood that the injunctive threat will have real bite against an implementer willing to license on RAND terms is the assumption that an SEP owner maintains its obligation to offer a RAND license even if its initial offer is challenged by the implementer and, further, even if the court agrees with the SEP owner that its initial offer was indeed RAND. Thus any implementer that is willing to license on court-certified RAND terms can avoid an injunction by accepting those RAND terms without eschewing any of its challenges to the RANDness of the SEP owner's earlier offers.

²⁸ See Microsoft Corp., Comments on FTC Workshop on Patents and Standard Setting, Project No. P111204, at 3–5 (June 14, 2011), available at http://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00009%2%A0/00009-60523.pdf (noting that “[m]ost SSOs have an IPR (or patent) policy that seeks to balance the rights and interests of their stakeholders by seeking commitments from participating patent holders that they will offer patent licenses for their essential patent claims on reasonable and non-discriminatory (RAND) terms and conditions,” and that “[s]tandards will not fulfill their salutary purposes if standards policies deter innovators from contributing patented technologies or investing in further innovation related to standardized technology”); Josh Lerner & Jean Tirole, *A Model of Forum Shopping*, 96 AM. ECON. REV. 1091 (2006) (describing the SSO as a two-sided market balancing interests of implementers and innovators and competing to offer favorable terms to attract members).

²⁹ Eastern R.R. Presidents Conf. v. Noerr Motor Freight, Inc., 365 U.S. 127 (1961); United Mine Workers v. Pennington, 381 U.S. 657 (1965); see also Cal. Motor Transp. Co. v. Trucking Unlimited, 404 U.S. 508, 510 (1972) (“[T]he right to petition extends to all departments of the Government. The right of access to the courts is indeed but one aspect of the right of petition.”); A.D. Bedell Wholesale Co. v. Philip Morris Inc., 263 F.3d 239, 251 (3d Cir. 2001) (“if . . . conduct constitutes valid petitioning, the petitioner is immune from antitrust liability whether or not the injuries are caused by the act of petitioning or are caused by government action which results from the petitioning”).

³⁰ See *Noerr*, 365 U.S. at 137 (stating one rationale for immunizing petitioning from the Sherman Act is that the government is vested with the power to decide between competing interests and operates best when an interested party can make its position known).

³¹ See Saint-Antoine, *supra* note 4, at 45.

threat of litigation has the potential to harm the public interest, the Supreme Court, in cases such as *Twombly*³² and *Wal-Mart*,³³ has responded not by constricting the constitutionally protected right to sue, but by raising the bar for success.³⁴ This is precisely the effect of *eBay* as well. To introduce antitrust liability into the interplay of these forces would undermine the ability of the courts to determine the public interest case-by-case and to grant or deny injunctions as appropriate.

Conclusion

As the courts hear more cases in which a SEP holder subject to a FRAND commitment seeks an injunction against an unlicensed user, and as they apply to SEP holders the law governing the issuance of injunctions, it will become clear both to commentators and to the holders and the users of SEPs engaged in negotiations that an injunction is not ordinarily a credible threat. When it is a credible threat, the SEP holder should not be deterred by possible antitrust liability from exercising its right to relief. Otherwise, antitrust law will have the perverse effects of diminishing the incentive to innovate while simultaneously impugning the ability of the judicial system to balance the particular interests at stake in each case and to tailor remedies accordingly. ●

³² *Bell Atl. Corp. v. Twombly*, 550 U.S. 544 (2007).

³³ *Wal-Mart Stores, Inc. v. Dukes*, 131 S. Ct. 2541 (2011).

³⁴ As Paul Saint-Antoine points out, *Twombly* and the line of class certification cases originating with *Wal-Mart* turned at least in part upon the concern that litigation costs could lead defendants to settle non-meritorious claims. In those cases the Court addressed the welfare concern by making it more difficult for plaintiffs to advance beyond, respectively, the motion to dismiss and class certification stages. St. Antoine, *supra* note 4, at 45.

Abuse Of Dominance By Patentees: A Pro-Innovation Perspective

Alden F. Abbott

Antitrust issues (referred to interchangeably here as competition issues) are an increasingly important consideration for intellectual property (IP) owners. Such issues can arise in numerous transactions involving IP rights, including from refusals to license, exclusive licenses, royalty provisions, field of use restrictions, territorial and customer limitations, exclusive dealing, tying arrangements, restrictions affecting research and development, non-challenge provisions, cross-licenses, and patent pools, among other arrangements. Over the past three decades antitrust jurisprudence has evolved significantly in the United States, Europe, and the rest of the world. Central themes of this evolution are the application of economic analysis and greater reliance on case-by-case evaluations rather than inflexible per se rules of prohibition.

Patent and other IP laws provide incentives for innovation and its dissemination and commercialization by establishing enforceable property rights for the creators of new and useful products, more efficient processes, and original works of expression. Antitrust laws promote innovation and consumer welfare by prohibiting certain actions that may harm competition with respect to either existing or new consumer goods and services.

It is well recognized today that patent licensing is an efficient way to disseminate technology and to provide greater incentives for innovation (often enabling follow-on patents and technological improvements), while also allowing for specialization in manufacture (mass production) and distribution. Accordingly, modern antitrust assessment of patent licensing restrictions generally takes into account these procompetitive efficiency-enhancing features when assessing particular restrictions, weighing them on a case-by-case basis against their anticompetitive potential. This was not always the case. Indeed, prior to the 1980s, United States antitrust enforcers viewed restrictions in licensing agreements as inherently suspect under the antitrust law. The Department of Justice's decision in the early 1980s to rescind the statement on the "Nine No-Nos" of licensing reflected the infusion of new economic thinking (particularly Chicago School and transaction cost economics) into U.S. antitrust enforcement.¹ Although other major jurisdictions did not follow suit at first, the rigid antitrust formalism that had restricted IP licensing eventually led to a change of view first in the United States, then around the world.

In this article I comment on the evolution of U.S. competition law and its treatment of alleged exclusionary conduct by patentees in light of contemporary law and economics. I conclude that an appropriate policy, directed toward promoting competition and consumer welfare, should not attack business arrangements by patent owners that merely seek to maximize returns within the

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¹ See generally Timothy J. Muris, Chairman, Fed. Trade Comm'n, Improving the Economic Foundations of Competition Policy, Remarks Before George Mason University Law Review's Winter Antitrust Symposium (Jan. 15, 2003), available at <http://www.ftc.gov/public-statements/2003/01/improving-economic-foundations-competition-policy>.

legitimate scope of the patent right. Rather, antitrust should challenge only actions that threaten to reduce competition among competing technologies or to artificially inflate the value of a particular technology. This approach comports with recent academic research that underscores the economic benefits of a strong patent system.

Antitrust-IP Principles In The United States

Antitrust Treatment of Intellectual Property: Early Historical Development. Since the enactment of the Sherman Antitrust Act² in 1890, the legal treatment of licensing practices based on patent rights has oscillated between absolute freedom in licensing and significant limitations.³ In the early 1900s the patent laws were considered to give “absolute freedom in the use or sale of rights.”⁴ However, in the ensuing decades, the courts recognized limitations on the extent of a patent owner’s rights in licensing. In *United States v. Line Material Co.*, the U.S. Supreme Court emphasized that inventors must stay within their statutory exclusive rights. The Court pointed out that “[a]s long as the inventors kept within their statutory exclusive rights, they were not engaging in unreasonable restraints of trade violating the Sherman Act.”⁵ The Court adopted a narrow interpretation of patent law rights in favor of the antitrust laws, noting in *Sears, Roebuck & Co. v. Stiffel Co.*, that “[o]nce the patent issues, it is strictly construed[.] [I]t cannot be used to secure any monopoly beyond that contained in the patent, the patentee’s control over the product when it leaves his hands is sharply limited, and the patent monopoly may not be used in disregard of the antitrust laws.”⁶

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The Court’s jurisprudence defined certain types of conduct to be per se violations of the antitrust laws. In *Mercoird Corp. v. Mid-Continent Investment Co.*, the Court held that tying arrangements involving patents always constituted antitrust violations. The Court stated:

When the patentee ties something else to his invention, he acts only by virtue of his right as the owner of property to make contracts concerning it and not otherwise. He then is subject to all the limitations upon that right which the general law imposes upon such contracts. The contract is not saved by anything in the patent laws because it relates to the invention.⁷

In *United States v. Arnold, Schwinn & Co.* the Court held that vertical territorial restrictions were per se unlawful.⁸

The Nine No-Nos. In the 1970s, the Antitrust Division of the Department of Justice went beyond existing case law and delineated nine sorts of patent licensing restrictions that it would challenge, without regard to their potential efficiencies: the “Nine No-Nos” of licensing. The “Nine No-Nos” were a list of licensing practices that the Antitrust Division of the Department of Justice stated it would treat as facially anticompetitive.⁹ They are:

² 15 U.S.C. §§ 1–7.

³ Herbert J. Hovenkamp, *Antitrust and the Patent System: A Reexamination* 1–4 (U Iowa Legal Stud. Res. Paper No. 14-27, Sept. 2014), available at <http://ssrn.com/abstract=2486633>.

⁴ *Bement v. Nat’l Harrow Co.*, 186 U.S. 70, 92 (1902).

⁵ *United States v. Line Material Co.*, 333 U.S. 287, 341 (1948).

⁶ 376 U.S. 225, 230 (1964) (internal citations omitted). As I note subsequently, the Supreme Court later rejected the view that a patent is necessarily associated with monopoly power in *Illinois Toolworks Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 46 (2007).

⁷ 320 U.S. 661, 666 (1944).

⁸ 388 U.S. 365, 379 (1967).

⁹ Abbott B. Lipsky, Jr., *Current Antitrust Division Views on Patent Licensing Practices*, 50 ANTITRUST L.J. 515, 517–24 (1982).

- (1) Royalties not reasonably related to sales of the patented products;
- (2) Restraints on licensees' commerce outside the scope of the patent (tie-outs);
- (3) Requiring the licensee to purchase unpatented materials from the licensor (tie ins);
- (4) Mandatory package licensing;
- (5) Requiring the licensee to assign to the patentee patents that may be issued to the licensee after the licensing arrangement is executed (exclusive grantbacks);
- (6) Licensee veto power over grants of further licenses;
- (7) Restraints on sales of unpatented products made with a patented process;
- (8) Post-sale restraints on resale; and
- (9) Setting minimum prices on resale of the patented products.

In actual practice, only a few of the IP-related cases filed by the Antitrust Division addressed any of these nine practices, and most of those cases were litigated under the rule of reason rather than a per se standard.¹⁰ Nevertheless, the existence of such a highly publicized list undoubtedly discouraged potentially efficient, welfare-increasing patent licensing transactions.

The 1980s—The Pendulum Swings Toward a Rule of Reason Approach. Beginning in 1981, under the Reagan Administration, U.S. antitrust authorities changed course and took the position that patents are fully legitimate property rights and that patent licensing restraints may enhance efficiency. In so doing, they rejected the Nine No-Nos¹¹ and broad presumptions of illegality concerning licensing. Specifically, the joint U.S. Department of Justice and Federal Trade Commission Antitrust Enforcement Guidelines for International Operations (issued in 1988 and slightly revised in 1995)¹² adopted a rule-of-reason approach to patent licensing that allowed for a balancing of the procompetitive effects of licensing against possible anticompetitive effects in related markets.

The Guidelines' rule-of-reason framework set out a three-part test: (1) What harm to competition results or may result from the collaborators' activities? (2) What is the objective they are trying to achieve and is it a legitimate and significant one? That is, what are the nature and magnitude of the "redeeming virtues" of the challenged collaboration? (3) Are there other and better ways by which the collaborators can achieve their legitimate objectives with less harm to competition? That is, are there "less restrictive alternatives" to the challenged restraint? This adoption of the rule-of-reason analysis in an IP context was followed by the landmark 1995 joint DOJ-FTC Guidelines (Antitrust-IP Guidelines, discussed immediately below) that set forth an economic-based framework for antitrust analysis of IP licensing.¹³

The 1995 Antitrust-IP Guidelines. The 1995 Antitrust-IP Guidelines recognized that intellectual property laws and antitrust laws share the common purpose of promoting innovation and enhancing consumer welfare.¹⁴ Under the 1995 Guidelines, licensing restrictions do not run afoul of the

¹⁰ Richard Gilbert & Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties*, in BROOKINGS PAPERS: MICROECONOMICS 283, 286 (1997).

¹¹ Lipsky, *supra* note 9.

¹² U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Enforcement Guidelines for International Operations (1995), available at <http://www.justice.gov/atr/public/guidelines/internat.htm>.

¹³ U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property (1995), available at <http://www.justice.gov/atr/public/guidelines/0558.htm>. Although these Guidelines are applicable to the full panoply of IP rights, the following discussion focuses exclusively on their relevance to patents.

¹⁴ *Id.*

antitrust law unless they create market power greater than the power the IP holder could have exercised without licensing (say, by refusing to license and directly producing and selling products covered by its patents).

The 1995 IP Guidelines embody three important general principles:

- (1) For the purpose of antitrust analysis, the DOJ and FTC (Agencies) regard intellectual property as being essentially comparable to any other form of property.
- (2) The Agencies do not presume that intellectual property creates market power in the antitrust context.
- (3) The Agencies recognize that intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive.¹⁵

IP Is Comparable to Any Other Form of Property. While intellectual property may differ in some respects from other forms of property, the same general approach can be used in antitrust analysis while taking the different characteristics into account. In short, the Guidelines recognized that the governing antitrust principles are the same: The IP owner's rights to exclude are similar to the rights of owners of other forms of private property, and IP is neither particularly free from scrutiny under the antitrust laws, nor particularly suspect under them.

Market Power. While intellectual property rights give owners the right to exclude others from using the protected rights, not all such rights give rise to market power. Economists have defined market power as the ability to "profitably charge prices above the competitive level for a sustained period of time."¹⁶

The Antitrust-IP Guidelines recognized that market power does not impose on the intellectual property owner an obligation to license the use of that property to others. However, market power could be used to harm competition through unreasonable conduct. Determination of whether a party has market power is crucial in antitrust cases involving intellectual property rights. Consistent with the Guidelines, the Supreme Court subsequently concluded in *Independent Ink* that "the antitrust enforcement agencies, and most economists have all reached the conclusion that a patent does not necessarily confer market power upon the patentee."¹⁷ In turn, the Court held that "in all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product."¹⁸

Market power is also an important consideration in cases involving resale price maintenance agreements. As the Supreme Court noted in *Leegin Creative Leather Products*, the fact "that a dominant manufacturer or retailer can abuse resale price maintenance for anticompetitive purposes may not be a serious concern unless the relevant entity has market power."¹⁹ As such, market power is an important factor to consider when a company that has significant dominance in any industry enters into licensing agreements.

Procompetitive Effects of IP Licensing. The Antitrust-IP Guidelines state that IP licensing transactions in general can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products. Such licensing trans-

¹⁵ *Id.*

¹⁶ ABA SECTION OF ANTITRUST LAW, MARKET POWER HANDBOOK 1 (2005) (emphasis and citations omitted).

¹⁷ *Ill. Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 45 (2006).

¹⁸ *Id.* at 46.

¹⁹ *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007).

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actions can increase the value of intellectual property to consumers and to the developers of the technology. Furthermore, the increased exploitation of IP rights through licensing can lead to increased incentives for research and development. The Supreme Court has included the beneficial economic effects of IP licensing under rule of reason analysis: “In determining the lawfulness of particular practices, courts often apply a ‘rule of reason.’ They examine both a practice’s likely anticompetitive effects and its beneficial business justifications.”²⁰

2007 DOJ-FTC Report on Antitrust Enforcement and IP Rights. Following FTC and DOJ hearings in the early 2000s on the intersection of antitrust and IP, the two agencies jointly issued a report on antitrust enforcement and IP rights (2007 Report).²¹ The 2007 Report in essence reaffirmed and expanded upon the 1995 Antitrust-IP Guidelines’ general approach to the antitrust analysis of patent licensing. The 2007 Report reflected the strong influence of the Bush Administration’s Antitrust Division leadership at the DOJ, which enthusiastically supported IP rights in its public pronouncements and its enforcement agenda. Specifically, the 2007 Report delved into significant detail on such issues as unilateral refusals to license, standard setting, portfolio cross-licenses and patent pooling, variations on IP licensing practices (including grantbacks, non-assertion clauses, and reach-through licensing), tying and bundling of IP rights, and contractual practices that extend beyond the patent term (long-term exclusivity and royalty contracts, bundling patents with trade secrets). While the Report placed major emphasis on the efficiencies arising from such transactions, it also surveyed theories of anticompetitive harm, reflecting case law and economic literature developments since 1995.

Of particular note, the 2007 Report stated that antitrust liability for mere unilateral, unconditional refusals to license a patent would “not play a meaningful role in the interface between patent rights and antitrust protections.” This formulation was in harmony with the U.S. Supreme Court’s *Trinko*²² decision, which held that U.S. antitrust law highly disfavors requiring firms to deal with third parties. The *Trinko* decision also emphasized that the Supreme Court had never approved of the antitrust “essential facilities” doctrine (requiring a party owning a facility “essential” to competition to grant third-party access), and may fairly be read to view that doctrine as highly problematic, consistent with the views of some mainstream U.S. antitrust scholars.²³ Some U.S. scholars have viewed antitrust rules that mandate third-party access to one’s property (in the case of patents and compulsory licensing) as creating disincentives to invest in innovation and as undermining vigorous, welfare-enhancing competition. (Parties that know they are guaranteed access to a competitor’s property have a reduced incentive to compete effectively.)

The 2007 Report also highlighted the problem of “hold-up” by patentees that could seek to obtain additional market power as a result of the inclusion of their patents in standards.²⁴ In so

²⁰ *Id.* at 648.

²¹ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION (2007) [hereinafter 2007 Report], available at <http://www.justice.gov/atr/public/hearings/ip/222655.pdf>.

²² Verizon Commc’ns Inc. v. Law Office of Curtis V. Trinko LLP, 540 U.S. 398 (2004).

²³ See, e.g., Phillip J. Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841 (1989).

²⁴ It merits noting, however, that some scholars question the seriousness (even the existence) of the hold-up problem. See, e.g., Richard A. Epstein, F. Scott Kieff & Daniel F. Spulber, *The FTC, IP, and SSOs: Government Hold-Up Replacing Private Coordination*, 8 J. COMPETITION L. & ECON. 1, 18–23, 43–45 (2012). Also, some commentators have suggested that the problem of “reverse hold-up,” whereby technology implementers use legal rules to artificially depress payments to patent holders, may be serious or more serious than hold-up. See, e.g., Peter Camesasca et al., *Injunctions for Standard Essential Patents: Justice Is Not Blind*, 9 J. COMPETITION L. & ECON. 285 (2013). Furthermore, one leading economist argues that the entire notion that the creation of standards raises ex post competitive problems by con-

doing, it also signaled a willingness to allow standard-setting organizations some leeway in developing policies to prevent hold-up, such as ex ante patent disclosure rules and RAND (“reasonable and non-discriminatory”)²⁵ licensing terms for patents that “read on” (are required to comply with) standards.

The discussion of standard setting in effect gave competition policy cover for joint efforts to limit returns on patents in the special case of standard setting, which the Report recognized as having efficiency-enhancing potential. It also cited the FTC’s *Rambus* case,²⁶ in which the Commission held that the exercise of additional patent-specific market power gained by manipulation of the standard-setting process through deception would not reflect legitimate returns to property rights, but, rather, illegitimate returns resulting from exclusionary behavior.²⁷

Some very recent signs, however, indicate that U.S. federal antitrust enforcers are beginning to consider novel antitrust theories to challenge what they view as the inappropriate exercise of individual patent rights, such as efforts to obtain “excessive” returns on patents that have been deemed “essential” in the context of standard setting.²⁸ Such theories would impose limitations on patent holders’ ability to maximize the value of their patents and to exercise core statutory rights, such as the right to seek an injunction for patent infringement. A review of relevant economic literature is warranted to determine whether such a significant shift in antitrust enforcement emphasis is advisable.

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Should Antitrust Be Applied to Restrict Returns Within the Legitimate Scope of a Patent Right?

As explained below, the answer to this question is an unequivocal “no.”

The traditional justification for patents stemmed from the notion that creating an exclusive time-limited property right through the patent system would spur private parties to promote the

fering “unearned” market power on standard essential patents (patents that “read on” standards) may reflect a complete misunderstanding of innovation economics. He maintains that technology standards emerge through a dynamic process that reflects innovative efficiencies generated by competition and cooperation among inventors and producers. Daniel F. Spulber, *Innovation Economics: The Interplay Among Technology Standards, Competitive Conduct, and Economic Performance*, 9 J. COMPETITION L. & ECON. 777 (2013).

²⁵ Also known as FRAND, or “fair, reasonable, and non-discriminatory.”

²⁶ See *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3d Cir. 2007) (holding deceptive conduct by a member of a standard-setting organization during the standard-setting process can be anticompetitive and violate the antitrust laws when it leads to the illicit acquisition of market power). *But cf.* *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008) (reversing the FTC’s holding that Rambus had engaged in anticompetitive monopolization, based on the FTC’s failure to prove that Rambus’s monopoly power would not have existed but for the deceit).

²⁷ 2007 Report, *supra* note 21, at 44.

²⁸ FTC Commissioner Joshua Wright has articulated concerns that recent FTC antitrust enforcement initiatives directed at alleged unilateral patent right abuses run the risk of returning to a regime that is excessively hostile toward the exercise and exchange of patent rights. In particular, he cites FTC scrutiny of patentees’ efforts to seek injunctions to enforce patents that “read on” standards, and patentees’ purported failure to honor commitments to standard-setting organizations. See Joshua D. Wright, Commissioner, Fed. Trade Comm’n, Does the FTC Have a New IP Agenda, Remarks Before the New York City Bar Ass’n (Mar. 11, 2014), available at http://www.ftc.gov/system/files/documents/public_statements/288861/140311ipagenda.pdf. Moreover, Commissioner Wright indicated that he had similar concerns about recent DOJ statements bearing on antitrust enforcement policy toward patents. See also Joshua D. Wright & Douglas H. Ginsburg, *Whither Symmetry? Antitrust Analysis of Intellectual Property Rights at the FTC and DOJ*, 9 COMPETITION POL’Y INT’L, No. 2, Fall 2013, George Mason Law & Economics Research Paper No. 13-71, at 15 (Dec. 2013), available at <http://ssrn.com/abstract=2365577>; Joanna Tsai & Joshua D. Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L.J. (forthcoming 2015) (concluding that the “incompleteness” of some standard setting contracts does not justify antitrust intervention), Working Paper, July 17, 2014), available at <http://leconcurrentialiste.files.wordpress.com/2014/08/standard-setting-intellectual-property-rights-and-the-role-of-antitrust.pdf>.

progress of science and the “useful” arts.²⁹ In modern welfare economics terms, the implicit presumption is that whatever welfare losses might stem from the patent-induced short-term exercise of monopoly power, such losses would be substantially outweighed by welfare gains due to the patent-induced improvements in innovation, which would bestow major benefits on consumers and producers over time. (Third parties would also benefit by being given access to new technological methods embodied in public patent filings.)

Empirical evidence that patents are not particularly effective in spurring innovation could, of course, seriously undermine this justification. Research by Richard Levin and others in the 1980s—a survey of 650 executives responsible for research and development (R&D) in 130 different industries—revealed that patents were deemed the most effective means of appropriating returns from R&D only in the pharmaceutical and chemical industries.³⁰ High returns in the latter two industries reflected the specific and discrete nature of patents that covered particular molecules and chemical formulations, enabling pharmaceutical and chemical firms to exercise significant market power. By contrast, in other high technology sectors, such as computers, telecommunications, and microelectronics, the survey showed that innovation was cumulative rather than discrete, with far-reaching cross-licenses, not specific patents, being key to technological progress. Being first to market innovative products supported by strong marketing and customer service was far more effective than particular patents in protecting competitive advantage due to R&D. A survey conducted in the late 1990s confirmed these findings.³¹

The research by Levin and his colleagues could have been viewed as undermining the importance of ensuring robust patent protection—at least outside the chemical and pharmaceutical industries. Subsequent work by Professors Carl Shapiro and Mark Lemley on “probabilistic patents” more explicitly made a public policy case for weakening patent protection.³² Concluding that rights granted to patent holders are “highly uncertain” (and nearly half of patents litigated to final judgment are invalidated)³³ and represent only a legal right to exclude, Shapiro and Lemley argued for a fundamental rethinking of patent policy in four areas: (1) the system for granting patents; (2) the patent litigation system; (3) the incentives of patent holders to use cross licenses or licenses to settle patent disputes rather than fully litigating them; and (4) the antitrust assessment of agreements among rivals to settle actual or threatened patent litigation. Shapiro and Lemley stressed that the scope and validity of patent rights (most of which are not litigated) are uncertain, patents are merely contingent property rights, and “weak” patents can command unjustified premiums. Implicit in this analysis was the premise that the current patent system unnecessarily restricts competition and imposes excessive costs on society. As such, they argue that

²⁹ Professor Lemley has stated that this “incentive theory” has been “the model for 200 years.” Mark A. Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J. SMALL & EMERGING BUS. L. 137, 139 (2000). See also Robert W. Hahn, *The Economics of Patent Protection: Policy Implications from the Literature* 4 (AEI-Brookings Joint Center for Reg. Stud. 2003) (“In general, classical theory supports a positive view—that patents, while exacting a price from society, provide incentives to innovate.”).

³⁰ See, e.g., Richard C. Levin, *Appropriability, R&D Spending, and Technological Performance*, 78 AM. ECON. REV. 424 (1988).

³¹ See Wesley M. Cohen, Richard R. Nelson & John P. Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)*, National Bureau of Economic Research No. 7552 (2000), available at <http://www.nber.org/papers/w7552>.

³² See generally Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP., Apr. 2005, at 75.

³³ That roughly half of fully litigated patents are invalidated should not be surprising, however, since presumably those cases that are deemed worthy by both sides as justifying such a resource commitment inherently involve matters the outcome of which is very much in doubt (classic “50-50” situations). Since most patents are not fully litigated, these unsurprising litigation results say nothing about the quality of patents overall.

antitrust, patent grant, and patent litigation policy should be reoriented to reduce patent grants (with a focus on higher “quality”) and subject patents to greater legal restrictions, including easier limitation and invalidation. By raising the probability that patent applications will be denied and by injecting additional uncertainty into the evaluation of existing patents, these changes, if implemented, would lower the marginal incentive to patent and cause some socially beneficial (not just “bad” or “inappropriate” patents) not to be pursued.³⁴

Nevertheless, the research that appears to support limiting returns to individual patents is unconvincing. This research focuses on the alleged deficiencies of individual patents, including their costs, weaknesses, and limitations in promoting returns to innovative activity. If, however, the patent system promotes other sorts of welfare-enhancing activities, new policies that curb the exercise of patents may be socially counterproductive. Indeed, other scholarship, summarized below, suggests alternative welfare-enhancing explanations for patenting that indicate the research by Levin, Shapiro, and Lemley (and others who share their perspective) may miss the mark.

The advantages of the patent system in spurring economic growth and innovation, quite apart from the value or quality of individual patents, have been highlighted by various academics since the 1970s, if not before.

The advantages of the patent system in spurring economic growth and innovation, quite apart from the value or quality of individual patents, have been highlighted by various academics since the 1970s, if not before. Professor Edmund Kitch argued that patent law increases the output from resources used for technological innovation by bringing those resources to bear on an array of “prospects” through a system of exclusive publicly recorded rights, akin to the American mineral claim system for public lands.³⁵ This justification was entirely separate from the traditional “reward theory,” which viewed patent law solely as a vehicle that enables the investor to capture rewards from its investment in an invention (a theory which Levin and his colleagues found wanting in industries other than pharmaceuticals and chemicals).

Subsequently, other scholars brought forth additional theories supportive of the patent system as an engine of economic growth and innovation. Professor Clarisa Long explained that patenting serves the key role of lowering information costs to firms, allowing firms to signal to capital markets their R&D capabilities and human capital, and promoting beneficial licensing.³⁶ Professor Paul Heald propounded a somewhat different theory, under which patent ownership rules establish a title registration system for certain information assets, thereby significantly lowering transaction costs compared to the available alternative systems of trade secrecy and contract law.³⁷ Professor Scott Kieff argued that enforcing patents with a strong property rule (as opposed to a liability rule) that allows the owner to exclude could avoid a socially suboptimal level of use of patented technology and thus is preferable to government grants, tax credits, or other regulatory vehicles to spur innovation.³⁸ Kieff and James Daily critiqued recent U.S. Supreme Court decisions narrowing the scope of patentable subject matter, arguing that these changes undermined

³⁴ Some “strong” as well as “weak” or “poor” patents would be erroneously rejected or struck down due to inevitable error costs associated with patent application reviews and with judicial review of litigated patents.

³⁵ Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977).

³⁶ Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 626–27 (2002).

³⁷ Paul J. Heald, *A Transaction Costs Theory of Patent Law*, 66 OHIO ST. L.J. 473 (2005). According to Heald, “[E]ven if empirical evidence were to show that the costs of patenting and the value of simulated innovation offset each other, the transaction costs theory suggests that the patent registration system should nonetheless be maintained as providing a net economic benefit.” *Id.* at 476.

³⁸ F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697 (2001).

the goals of invention commercialization and competition.³⁹ Most recently, Professor Daniel Spulber produced a broad overview of three important ways in which patents support the market for inventions: (1) they enhance transaction efficiencies and competition by providing exclusion, transferability, disclosure, certification, standardization, and divisibility; (2) they helpfully transform the market for inventions into a market for innovative control by spurring invention, innovation, and investment in complementary assets; and (3) they promote the financing of invention and innovation.⁴⁰

This scholarship appears not to have been addressed by antitrust enforcement officials, who are weighing efforts to limit returns to individual “powerful” patents.⁴¹ In short, the existence of robust countervailing theoretical academic work that supports a “strong” patent regime demonstrates that the case for weakening individual patents through new antitrust initiatives has not been proven.

Who has the better “real-world” case? On balance, recent empirical research finding stronger patent policies to be associated with faster economic growth may be seen as bolstering the argument in favor of maintaining a strong pro-patent policy tilt.⁴² Of particular interest, a recently published peer-reviewed cross-sectional study covering many countries over two decades finds a strong association among patent rights, economic growth, and increased productivity:

[W]e study the impact of changes in effective patent rights within panels of up to 54 manufacturing industries in up to 72 countries between 1981–2000. Stronger patent rights were associated with faster growth in more patent-intensive industries, and the effect was larger in higher-income countries. Between 1991–1995, an increase in the level of effective patent rights from Turkey to Singapore was associated with the average growth of the other chemicals and leather industries being respectively 1/6 and 1/17 higher. Patent rights were associated with faster growth through both factor accumulation and raising productivity. Our findings were robust to alternative measures of patent rights and patent intensity.⁴³

Over the last decade, a variety of OECD studies found a positive association between the strengthening of IP rights (including patents) and important economic indicators, as well as a positive relationship between the strengthening of patent rights and increased innovation.⁴⁴ Various other recent empirical investigations have also found associations between patents and economic

³⁹ James E. Daily & F. Scott Kieff, *Anything Under the Sun Made by Humans: Patent Law Doctrines as Endogenous Institutions for Commercializing Innovation*, 62 EMORY L.J. 967 (2013).

⁴⁰ See Daniel F. Spulber, *How Patents Provide the Foundation of the Market for Invention* (June 2014), available at http://www.law.northwestern.edu/research-faculty/searlecenter/events/roundtable/documents/Spulber_Patents_and_the_Market_for_Inventions.pdf.

⁴¹ FTC Commissioner Joshua Wright, for example, has expressed his concerns about the FTC’s actions in this regard. See Wright, *Does the FTC Have a New IP Agenda*, *supra* note 28.

⁴² For a good summary treatment of somewhat earlier research suggesting that strong patent protection is associated with higher rates of prosperity and economic growth, particularly in the developing world, see SHANKER SINGHAM, *A GENERAL THEORY OF TRADE AND COMPETITION: TRADE LIBERALIZATION AND COMPETITIVE MARKETS* 320–30 (2007).

⁴³ Albert G.Z. Hu & I.P.L. Ng, *Patent Rights and Economic Growth: Evidence from Cross-Country Panels of Manufacturing Industries*, 65 OXFORD ECON. PAPERS 675 (2013). The authors, professors at the National University of Singapore, discuss their statistical methods at length and provide a good literature survey on the relationship among patent laws, economic growth, and innovative activities.

⁴⁴ See, e.g., Douglas Lippoldt, *Do Stronger IPRs Deliver the Goods (and Services) in Developing Countries?*, INT’L POLICY NETWORK 9–10 (2010), available at http://www.ecipe.org/media/publication_pdfs/Lippoldt_Stronger_IPRs12102010.pdf.

growth and innovation.⁴⁵ Although scholarly opinion admittedly is not unanimous,⁴⁶ and correlation does not necessarily imply causation, I believe that the weight of recent empirical findings by and large lend solid support for strong patent protection.

Claims that the increased antitrust scrutiny of patent transactions does not necessarily undermine a strong patent system are unconvincing. They might be true were antitrust aimed only at abuses that extended market power beyond the defensible scope of the patent property right—abuses that lie at the core of the 1995 Antitrust-IP Guidelines. But seeking to limit returns to certain assertions of presumptively valid patents on antitrust policy grounds would be an antitrust sea change that would tend *ex ante* to lower expected returns to valid patent invocations, and, thus, reduce incentives on the margin to invest in legitimate patenting (and patentable) activities. Such an evolution in antitrust philosophy may be socially detrimental to the extent a “strong patenting climate” is indeed conducive to economic growth and innovation. Reforms in patent law administration may be appropriate, and may (if appropriately formulated) be consistent with protection for strong patents. But even if there is a need for further *patent law* reforms,⁴⁷ that provides no justification for the more onerous application of *antitrust law* to the exercise of market power flowing from individual patents.

Error cost considerations also militate against “peering behind” individual patents to see if they have been “illegitimately” deployed in a manner that yields “excessive” returns to the property right (for example, because the patents are “weak” or “poor quality” in probabilistic terms, or because “undue” market power has been conferred *ex post* through standard setting). Consistent with decision theory,⁴⁸ optimal antitrust rules should be designed to minimize the sum of (1) welfare losses due to the discouragement of welfare-promoting behavior, (2) false positives, (3) false negatives, and (4) the administrative costs of employing the antitrust system. More onerous antitrust scrutiny of market power generated by individual patents is likely to generate (1) substantial welfare losses due to reduced innovative activity, (2) significant false positive costs due to the prosecution of efficiency-seeking behavior, and (3) significant administrative costs due to

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. . . reduce incentives

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in legitimate patenting

(and patentable)

activities.

⁴⁵ See, e.g., Yingying Go & Bo Wang, *Study on the Economic Growth of Patent Output in the High-tech Industry*, 3 J. MGMT. & SUSTAINABILITY 103 (2013) (finding a significant long-run equilibrium relationship between patent output and economic growth); Dushko Josheski & Cane Koteski, *The Causal Relationship Between Patent Growth and Growth of GDP with Quarterly Data in the G7 Countries: Cointegration, ARDL and Error Correction Models*, MPRA Paper No. 33153 (Sept. 2011), available at http://mpra.ub.uni-muenchen.de/33153/1/MPRA_paper_33153.pdf (showing positive relationships between patent growth and GDP growth in G7 countries); Dipendra Sinha, *Patents, Innovations, and Economic Growth in Japan and South Korea: Evidence from Individual Country and Panel Data*, 8 APPLIED ECONOMETRICS & INT'L DEV. 181 (2008) (finding a two-way causality between the growth of real GDP and growth of the number of patents in Japan); José M. Ortiz-Villajos, *Patents and Economic Growth in the Long Term: A Quantitative Approach*, 52 BRUSSELS ECON. REV. 305 (2009) (cross-sectional regressions showing a strong positive relationship between patenting and per capita income growth, based on patent data of over 20 countries from the beginning of the 19th century until the end of the 20th century).

⁴⁶ See, e.g., Petra Moser, *Patents and Innovation: Evidence from Economic History*, J. ECON. PERSP., Winter 2013, at 23 (concluding from an examination of historical evidence that most innovations occur outside the patent system, that patent policies that grant strong intellectual property rights to early inventors may discourage innovation, that compulsory patent licensing may increase innovation in the licensing countries, and that policies that modify patent laws to facilitate entry and encourage competition may encourage innovation).

⁴⁷ I take no position on whether there is such a need. The U.S. Patent and Trademark Office already has undertaken and continues to undertake administrative improvements in the patent area, and reforms are being implemented pursuant to the America Invents Act of 2011, P.L. 112-29, 125 Stat. 284–341. Moreover, the Obama Administration is pursuing additional reforms. See, e.g., The White House, FACT SHEET: White House Task Force on High-Tech Patent Issues (June 4, 2013), <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues>.

⁴⁸ Decision theory describes a methodology “for making factual determinations and decisions when information is imperfect and costly.” This methodology is well suited to deriving optimal antitrust rules, given informational constraints. See, e.g., C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41, 41–42 (1999).

increases in antitrust investigations and prosecutions (including costly and potentially erroneous efforts to gauge the “strength” of a patent based on settlement terms, types of royalty requests, and other matter-specific factual information). Weighed against these significant costs is the reduction in false negatives due to the prosecution of “illegitimate” efforts by patent holders to garner significant royalties from individual patents. Based on the previous discussion, there is good reason to believe that the incidence of this false negative is low. Thus, on balance, error cost analysis strongly suggests that welfare will diminish if more onerous antitrust scrutiny is directed at alleged exploitation of “excessive” market power associated with the invocation of core patent rights.

Consistent with this analysis, I believe that U.S. antitrust enforcers should drop their emphasis on alleged single patent antitrust “abuses” and focus instead on the framework set forth in the 1995 Antitrust-IP Guidelines, supplemented by the 2007 Report. This framework recognizes that licensing programs aimed at maximizing returns to the patent right (including, for example, field of use and geographic restrictions, bundling, and other arrangements which may effectuate efficient price discrimination) are generally welfare-enhancing and appropriate, and raise problems only if they serve as a cover for a welfare-reducing horizontal restraint (say, a conspiracy among patent licensees to divide markets). This framework also recognizes the general right of the patent holder not to license (the essence of a property right is the right to exclude), and the inappropriateness of applying the “essential facilities doctrine” to patents. (If a jurisdiction decides to pursue compulsory patent licensing due to paramount public policy considerations, such as a medical emergency requiring a patented drug, it should use authority other than competition law to achieve this end, and ensure that the patentee is fully compensated.) Adopting such a framework would provide appropriate incentives for welfare-enhancing innovation and economic growth, while at the same time ensuring that anticompetitive restrictions among competing technologies are avoided.

Conclusion

Patent-antitrust enforcement should “stick to its knitting” and focus on transactions that lessen competition among rival technologies or on wrongful actions (not competition on the merits) designed to artificially inflate the market value of a patent beyond its legitimate scope. New antitrust enforcement initiatives that seek to limit returns within the legitimate scope of the patent are unwise. Even if they appeared to restrain licensing fees in the short term, economic theory and evidence suggests that such “creative antitrust enforcement” would undermine incentives to invest in patenting, thereby weakening the patent system and tending to slow innovation and economic growth. Nations seeking to spur their economies would be well advised to avoid such antitrust adventurism. ●

Actavis and Error Costs: A Reply to Critics

Aaron Edlin, Scott Hemphill, Herbert Hovenkamp, and Carl Shapiro

Any two principal competitors (call them the “Brand” and the “Generic”) can profit by agreeing not to compete with each other, so long as they can find a way to split the extra profits. The longer they avoid competition, the more profits they can split.

A settlement of a Hatch-Waxman patent suit provides the perfect venue for such an agreement. The Brand and the Generic have a joint incentive to settle the suit to avoid competition for as long as they can. It does not matter whether the Generic is probably not infringing or the patent is likely invalid; these factors only suggest that the Generic will demand a larger payment from the Brand. The longer the Generic agrees to stay out in exchange for a payment—a “reverse” payment, in the Supreme Court’s terminology, because the patentee rather than the alleged infringer makes the payment—the greater the joint profits and the more the Brand must pay. These incentives are the elephant in the room in *FTC v. Actavis*,¹ and the basis for the Court’s judgment that such settlements are subject to antitrust scrutiny. They must always be kept front of mind.

We argued in our article *Activating Actavis* that the Court’s opinion laid out a practical and economically sensible approach to evaluating the legality of these settlements.² Because payments are observable³ and because lost competition is not, the Court concluded that a court or jury should rely heavily on the size of a reverse payment as a “surrogate” for patent-case weakness and therefore for lost competition.⁴ Payment size is likewise a proxy for market power.⁵

In our article, we argued that a plaintiff’s demonstration of a net payment in excess of avoided litigation cost, combined with limitations on the Generic’s ability to compete, satisfies the plaintiff’s burden of production in a rule-of-reason case.⁶ We call this the “*Actavis* inference.” This inference is established whether the payment is made in cash or by some other form of value transfer.⁷ A large

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¹ *FTC v. Actavis, Inc.*, 133 S. Ct. 2223 (2013).

² Aaron Edlin, Scott Hemphill, Herbert Hovenkamp & Carl Shapiro, *Activating Actavis*, ANTITRUST, Fall 2013, at 16 [hereinafter Edlin et al., *Activating Actavis*].

³ In some instances, the valuation of this consideration is an intricate proposition. For a discussion of this point, see *id.* at 18. Payment as an economic matter must include not only cash but any consideration, including the Brand’s promise not to launch an authorized generic.

⁴ *Actavis*, 133 S. Ct. at 2236–37.

⁵ *Id.* at 2236 (“[T]he size of the payment from a branded drug manufacturer to a prospective generic is itself a strong indicator of power”) (internal quotation omitted).

⁶ Edlin et al., *Activating Actavis*, *supra* note 2, at 18.

⁷ The competitive, business, and economic effects of cash and in-kind payments are identical so it seems evident to us that they should be treated identically. Compare *In re Niaspan Antitrust Litig.*, No. 13-MD-2460, 2014 WL 4403848, at *11 (E.D. Pa. Sept. 5, 2014) (“[T]he term ‘reverse payment’ is not limited to a cash payment.”), *In re Lipitor Antitrust Litig.*, No. 3:12-cv-2389 (PGS), 2013 WL 4780496, at *26 (D.N.J. Sept. 5, 2013) (“[N]othing in *Actavis* strictly requires that the payment be in the form of money”), and *In re Nexium (Esomeprazole) Antitrust Litig.*, 968 F. Supp. 2d 367, 392 (D. Mass. 2013) (“Nowhere in *Actavis* did the Supreme Court explicitly require some sort of monetary transaction”), with *In re Loestrin 24 Fe Antitrust Litig.*, No. 1:13-md-2472-S-PAS, 2014 WL 4368924, at *12 (D.R.I. Sept. 4, 2014) (concluding that payment must be in cash based on “literal holding of *Actavis*,” while noting the resulting “quandary” that under this interpretation, settling parties “are likely to evade Sherman Act scrutiny”) and *In re Lamictal Direct Purchaser Antitrust Litig.*, No. 12-cv-995 (WHW), 2014 WL 282755, at *5 (D.N.J. Jan. 24, 2014) (reading *Actavis* to require that the settlement “must include money”). See also *In re Wellbutrin XL Antitrust Litig.*, No. 2:08-cv-02431-MAM, at *4 (E.D. Pa. Jan. 17, 2014) (deferring consideration of the question).

Brand payment, as part of an agreement with delayed Generic entry, is not irrefutable evidence of an anticompetitive settlement agreement, but it does leave the defendants with some explaining to do.

The *Actavis* inference finds ample support in both case law and economic analysis. The inference follows directly from the Court's opinion, which states, for example, that "a court, by examining the size of the payment, may well be able to assess its likely anticompetitive effects along with its potential justifications without litigating the validity of the patent . . ."⁸ The inference is also supported by the straightforward economic model that we offered in *Activating Actavis*; our model exposed the basic incentive to delay competition identified by the Court and the correspondence between the size of a reverse payment and the reasonable inference of delay.

Our analysis has been challenged by four economists, Barry Harris, Kevin Murphy, Robert Willig, and Matthew Wright (HMWW).⁹ HMWW have two central claims: (1) that our proposal is contrary to *Actavis* because it conflicts with the Court's refusal to adopt a particular "quick-look" approach and (2) that our proposed interpretation condemns procompetitive agreements. HMWW offer a theoretical example in support of their second claim.

In this reply, we explain why HMWW are mistaken on both points. Without the *Actavis* inference, it would be very hard for a plaintiff to prove that there has been payment for delay, and in turn it likely would be that the Brand would pay for delay. In other words, once one fully takes into account the parties' joint incentives to delay generic entry, even in HMWW's theoretical example, the *Actavis* inference will, in practice, lead to more competitive outcomes than would arise without it. The approach we favor prevents many false negatives that would occur if courts could not infer delayed competition from payment size. Our approach also will produce few false positives, contrary to the implication of HMWW's critique.

The *Actavis* Inference Is Legally Sound

HMWW first attack the *Actavis* inference on essentially legal grounds, asserting that we "ignore the language of the *Actavis* opinion that expressly rejects the 'quick-look' approach and finds that many factors need to be considered in a rule-of-reason analysis of reverse payments."¹⁰ We disagree. In fact, as detailed in our earlier article, the *Actavis* inference is rooted in a close reading of the case.

HMWW are correct that the Court rejected a particular quick-look approach. That approach would have limited the plaintiff's burden to establishing a gross payment to the generic and delayed generic entry, and sharply limited the defendants' permitted responses. But HMWW overstate the implications of that rejection. Our interpretation of *Actavis* differs from the rejected quick-look rule in two respects.

First, our interpretation expands the plaintiff's burden. The rejected approach relieved plaintiffs from the burden of establishing a large net payment to the Generic; instead, plaintiffs only would have needed to show that the Brand made a gross payment. Defendants would have then borne the burden of arguing that the payment was no larger than avoided litigation cost, or was made

⁸ *Actavis*, 133 S. Ct. at 2237.

⁹ Barry C. Harris, Kevin M. Murphy, Robert D. Willig & Matthew B. Wright, *Activating Actavis: A More Complete Story*, ANTITRUST, Spring 2014, at 83 [hereinafter HMWW].

¹⁰ *Id.*

Without the *Actavis* inference, it would be very hard for a plaintiff to prove that there has been payment for delay, and in turn it likely would be that the Brand would pay for delay.

in exchange for Generic services rather than delay.¹¹ Under our approach, the plaintiff bears the burden on these points. This is how we read *Actavis*.

More precisely, we propose that the plaintiff bear the burden of production as to avoided litigation expense and the burden of persuasion overall. As to the value of services rendered by the Generic, we suggest that a court place the burden of production on defendants because they have better information about that. Our attention to avoided litigation expense and the value of Generic services again corresponds to the emphasis placed on these points by the Court: “Where a reverse payment reflects traditional settlement considerations, such as avoided litigation costs or fair value for services, there is not the same concern that a patentee is using its monopoly profits to avoid the risk of patent invalidation or a finding of noninfringement.”¹²

Second, our approach also differs from a quick look by permitting the defendant to offer a wider range of responses. In a quick look, defendants may present evidence that the restraint is in fact, on balance, procompetitive.¹³ But quick-look cases are truncated, in that they deprive defendants of the opportunity to challenge the initial inference of an anticompetitive effect by, for example, presenting evidence that market power is lacking. In contrast, our ordinary rule-of-reason procedure leaves defendants free to present contrary evidence that challenges the inference of anticompetitive effect.

The rejection of a quick look, however, does not mean that the plaintiff must show directly that the settlement led to later entry than that expected in litigation. Such a direct showing would require litigating the patent, a trial by ordeal that the Court explicitly says is unnecessary if a sufficiently sizable reverse payment exists. Rejection of a quick-look approach alters the applicable procedure, but the Court makes clear that even under its rule-of-reason approach, the Court will accept the use of surrogates or shortcuts, provided that they are reasonable to the situation at hand. Even under the rule of reason, the parties need not “present every possible supporting fact or refute every possible pro-defense theory.”¹⁴ Rather, there is a “sliding scale in appraising reasonableness.”¹⁵

It bears repeating that the *Actavis* inference does not preclude antitrust defendants from rebutting the prima facie case or otherwise presenting a defense. Similar inferences have been a part of antitrust law for more than 50 years. For example, in merger cases, a presumption of illegality may be established based on information about the number of firms in a relevant market and their market shares. The merging parties can then rebut this inference.¹⁶

The Court emphasizes the reverse payment’s size as the key to understanding the settling parties’ likely motivations and the settlement’s potential anticompetitive effects. A key question under the rule of reason is always what evidence creates a sufficient inference of “likely anticompetitive effects,” thereby shifting the burden to the defendant. Another critical question is what justifica-

¹¹ See Brief for the Petitioner at 17, *FTC v. Actavis, Inc.*, 133 S. Ct. 2223 (2013) (No. 12-416) (“The principal means of rebuttal would be through proof that the payment was instead consideration for unrelated property or services, or that the payment was commensurate with the litigation costs that the brand-name manufacturer would otherwise have borne.”); *id.* at 37–39 (elaborating this approach).

¹² *Actavis*, 133 S. Ct. at 2236.

¹³ *Id.* at 2237 (“‘Quick-look analysis in effect’ shifts to ‘a defendant the burden to show empirical evidence of procompetitive effects’”) (quoting *Cal. Dental Ass’n. v. FTC*, 526 U.S. 756, 775 n.12 (1999)).

¹⁴ *Id.* at 2237.

¹⁵ *Id.* (internal quotation marks omitted).

¹⁶ See, e.g., *United States v. Phila. Nat’l Bank*, 374 U.S. 322, 363–64 (1963); *United States v. Bazaarvoice, Inc.*, No. 13–cv–00133–WHO, 2014 WL 203966, at *64 (N.D. Cal. Jan. 8, 2014).

tions the courts will admit to rebut the inference. It is clear from both our analysis and from the Court's opinion that a large reverse payment creates such an inference. The threshold for sufficient "largeness" suggested by both the Court and our economic logic is the sum of likely avoided litigation costs and the reasonable value of any other consideration provided by the Generic, such as services.

The Court's repeated use of the terms "unexplained" or "unjustified" to modify "large reverse payments" suggests that such payments are not illegal if appropriately justified, *and* that the burden is on the defendant to justify (i.e., explain) them. The Court writes that "[a]n antitrust defendant may show in the antitrust proceeding that legitimate justifications are present, thereby explaining the presence of the challenged term and showing the lawfulness of that term under the rule of reason."¹⁷ The Court concludes that "[i]n sum, a reverse payment, where large and unjustified, can bring with it the risk of significant anticompetitive effects; one who makes such a payment may be unable to explain and to justify it"¹⁸ Allocating the burden to the defendant to provide justifications for a settlement also makes sense: it would be unreasonable and inefficient to expect a plaintiff to prove the absence of any convincing justification without requiring the defendants first to narrow the scope of the facts and justifications at issue by making their case.

The *Actavis* Inference Accommodates Procompetitive Settlements

We now turn to HMWW's central claim: that our rule would sometimes condemn procompetitive settlements. Our reply to this claim is that once one accounts for the parties' clear incentive to delay generic entry, false negatives would abound under the HMWW rule, while false positives will be exceedingly rare under our rule.

We define a settlement in a reverse payment case as anticompetitive if consumers are worse off under the settlement than they would be under one of two benchmarks: (1) the outcome of litigation, in expectation; or (2) an alternative settlement that did not include a large payment. A settlement is anticompetitive if competition is delayed in comparison to *either* benchmark. *Actavis* supports this approach. There, the Court points out that if antitrust law prohibits the parties from settling with a large reverse settlement, they can (typically) settle without one, and with an earlier entry date.¹⁹ The *Actavis* dissent criticizes the Court for not explaining why a better settlement will ordinarily exist, but acknowledges and apparently accepts this standard.²⁰ Consistent with our definition of anticompetitive settlements, HMWW write that a reverse payment benefits consumers if it: "(1) causes the Brand to be willing to accept a settlement permitting entry on a date earlier than the expected entry date under litigation; and (2) results in a settlement that would not have occurred without a reverse payment."²¹

HMWW criticize the model that we propose because it assumes risk neutrality and is therefore a special case. But, as we shall explain, the *Actavis* inference remains valid in much broader cir-

¹⁷ *Actavis*, 133 S. Ct. at 2236.

¹⁸ *Id.* at 2237.

¹⁹ *Id.* The Court noted: "[T]he fact that a large, unjustified reverse payment risks antitrust liability does not prevent litigating parties from settling their lawsuit. They may, as in other industries, settle in other ways, for example, by allowing the generic manufacturer to enter the patentee's market prior to the patent's expiration, without the patentee paying the challenger to stay out prior to that point." *Id.*

²⁰ See *id.* at 2247 (Roberts, C.J., dissenting) ("The majority assures us, with no support, that everything will be okay because the parties can settle by simply negotiating an earlier entry date for the generic drug manufacturer, rather than settling with money.").

²¹ HMWW, *supra* note 9, at 83.

cumstances, and the HMWW possibility of a procompetitive settlement is based on quite a special case. Indeed, considering false negatives as well as false positives, our approach yields greater accuracy than HMWW's preferred approach.

HMWW's first example of a "procompetitive" settlement actually involves payment for delay. In that example, the patent has 100 months left.²² A risk-averse Brand has a 70 percent chance of winning its suit against a Generic so the expected date of entry under litigation is 70 months. Nonetheless the Brand pays the defendant a large reverse payment and agrees to an earlier entry date than expected under litigation—say 50 months—in order to get a certain outcome and avoid bearing the risk cost from an uncertain litigation outcome. HMWW argue that when our model is extended to include Brand risk aversion, such settlements with large reverse payments and early entry dates are possible.²³ We agree with them that it is theoretically possible that a sufficiently risk-averse Brand might (if necessary) be willing to make a high payment *and* at the same time settle for an entry date that occurs before the expected date under litigation.²⁴ (In *Activating Actavis*, we concluded that the Court did not wish to entertain arguments, such as this one, that rely on Brand risk aversion. Here we discuss the appropriate approach if, contrary to that conclusion, such arguments are permitted.)

The first problem with this HMWW example is that this hypothetical settlement is actually *not* procompetitive under the dual benchmark standard that all members of the Court accept, and which HMWW also appear to adopt. If the large and unexplained payment is prohibited under antitrust law, then the parties have a strong incentive to reach an alternative settlement with an earlier entry date and no large reverse payment. Compared with this alternative settlement, the proposed "procompetitive" settlement is actually anticompetitive, as it involves a payment made to delay the start of competition. HMWW presumably appreciate this feature of their example, but they downplay it.

The second problem with this HMWW example is that the parties would not choose this hypothetical settlement. Their settlement is simply not an equilibrium outcome in their own model. If the parties are free to choose among what HMWW call "procompetitive" settlements (all legal under HMWW's approach), the parties will have a strong incentive to choose an entry date very close to the expected entry date under litigation. Better yet for the parties, if they can get away with it, they would settle upon an even later entry date. We very much doubt such settlements would be deterred if antitrust law took the lenient HMWW approach to patent settlements, because although such settlements might be illegal even in HMWW's preferred legal regime, plaintiffs would find it difficult to prove that the settlement entry date came later than the expected date without an *Actavis* inference.

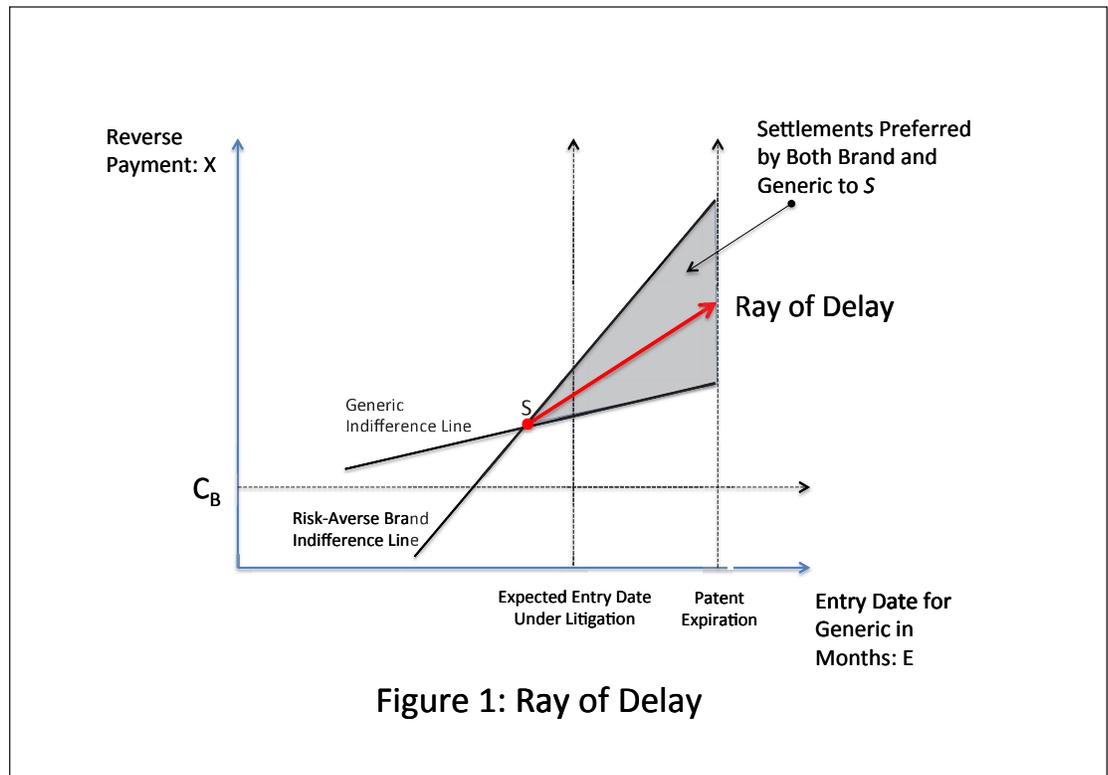
Figure 1 illustrates why the Brand and Generic would not pick the hypothetical "procompetitive" settlement that HMWW propose. Figure 1 is based on Figures 2 and 3 in HMWW's article. In our Figure 1, the point *S* represents what HMWW call a procompetitive settlement where the *Actavis* inference would yield a false positive (any point on the supposedly procompetitive segment in

²² We refer here to their example, *id.* at 85–86, in the section titled "The EHHS Result Does Not Always Hold When Other Factors Are Considered."

²³ See *id.* at 85–86 & fig. 2.

²⁴ For purposes of this reply, we adopt HMWW's assumptions that the Brand is risk averse and the Generic is risk neutral, see *id.* at 85 & n.18, as well as HMWW's implicit assumption that the Brand lacks substantial bargaining power in settlement negotiations. If the Generic is sufficiently risk averse, or the Brand has substantial bargaining power, it is likely that the Brand will not need to make a high payment to the Generic, except to gain an entry date later than the expected entry date under litigation.

The parties' incentive is to delay entry and split the extra profits . . .



HMWW Figure 2 or in the shaded area in HMWW Figure 3). Under the settlement S , the reverse payment X exceeds the Brand's avoided litigation costs C_B , and the entry date for the Generic is earlier than the expected entry date under litigation.

We now demonstrate that the Brand and Generic will not agree to settle at point S . The steeper line through S represents settlements that the Brand considers equally attractive to S . The flatter line through S represents settlements that the Generic considers equally attractive to S . The Generic's indifference line is flatter than the Brand's due to the fundamental incentive that, as we noted, should always be front of mind: delaying entry is more valuable to the Brand (because it prolongs monopoly profits) than the cost to the Generic, which only loses a share of profits under competition. All points northeast of S between these two lines, as shown by the shaded area in Figure 1, are preferred by *both* the Brand and the Generic to S .

The parties' incentive is to delay entry and split the extra profits, moving their settlement into the shaded area in Figure 1. Just which alternative settlement they will pick depends on how they split the joint gains from delayed entry by the Generic. If the gains are split equally, the parties will have an incentive to move out along the Ray of Delay depicted in Figure 1. With unequal bargaining power, the Ray of Delay would rotate up or down, but regardless of the ray's slope, the parties will seek to move out along the ray. As the parties move out along the Ray of Delay, the Brand pays ever larger amounts for ever more delay. The parties have an incentive to push out as far as they can along the Ray of Delay, up to patent expiration, limited only by antitrust risk. HMWW do not dispute this fact. The incentive to move out the Ray of Delay is the elephant in the room of reverse payment cases, one that should not be forgotten.

How would the courts evaluate such settlements to make sure that they toe the line, according to HMWW? As we understand their approach, an antitrust plaintiff would need to present direct evidence that the Brand had, in their example, no more than a 70 percent chance of winning the patent suit. This direct approach to evaluating the settlement, without the benefit of an inference

from a large unexplained payment, would be very difficult to reliably implement. It would be virtually impossible without litigating the patent, which the Court said should “normally” not be necessary.²⁵ A major drawback to the HMWW approach is its inconsistency with *Actavis*, which emphasizes the inference of harm to competition that can be drawn from a large unexplained payment. Another drawback is that plaintiffs would find it very difficult in practice to prove directly that a payment was for delay, so HMWW are inviting many false negatives if the large reverse payment cannot be used to infer anticompetitive effects.

HMWW also offer a second example, carefully constructed to preclude the possibility of a voluntary settlement with a reverse payment below the Brand’s avoided litigation cost.²⁶ Unlike their first example, this example creates a settlement region that is procompetitive under the dual benchmark standard. However, the assumptions underlying this example are quite particular. This region can exist only if the Brand is risk averse and, simultaneously, the Generic is unreasonably optimistic in its expectations of success at trial in the patent suit. It will be a challenge for courts to determine *ex post* what the *ex ante* beliefs of the Brand and Generic were, but let’s assume, nonetheless, that courts can somehow know whose *ex ante* expectations are reasonable.

[T]he greatest problem is the false negatives that will dominate in practice if plaintiffs do not have a practical way to try these cases.

We agree—assuming that risk aversion defenses are allowed at all—that if the defendants could prove they were in this region, they would have found the “convincing justification” that the Court spoke of for a large reverse payment.²⁷ But the possibility of such a region does not justify eliminating the inference that we propose within a standard rule-of-reason framework.²⁸ As explained above, without the *Actavis* inference, there would be many false negatives, as antitrust plaintiffs struggled in every case to compare the settlement to a reconstructed measure of the expected litigation outcome.

Moreover, our point about the frequency of significant false positives under the *Actavis* inference is fundamental and applies equally to HMWW’s second example. As with their first example, their proposed procompetitive settlement is not an equilibrium because the defendants will always seek to delay entry (moving out along the Ray of Delay) for as long as they can get away with, and split the resulting monopoly profits. The point here is that switching to HMWW’s preferred legal regime would not yield many of the procompetitive settlements that they say should motivate their regime. Parties will instead be free to follow their incentives to delay. As a result, the greatest problem is not the false positives that concern HMWW. Rather, the greatest problem is the false *negatives* that will dominate in practice if plaintiffs do not have a practical way to try these cases.

Conclusion

A practical approach is to allow the plaintiff an inference of anticompetitive effect if the plaintiff shows that a large reverse payment has been made and entry has been restricted. The theoretical possibility of false positives under the *Actavis* inference does not make it a bad rule. We must ask how many false positives are produced by the inference; how many remain once the inference is supplemented by defendants’ opportunity to demonstrate that their settlement is in fact procompetitive; and how many false negatives are avoided, all compared to an alternative method of establishing liability.

²⁵ *Actavis*, 133 S. Ct. at 2236 (“[I]t is normally not necessary to litigate patent validity to answer the antitrust question . . .”).

²⁶ HMWW, *supra* note 9, at 86–87 & fig. 3, in the section titled “Reverse Payments May Permit Settlements that Enhance Consumer Welfare.”

²⁷ See *Actavis*, 133 S. Ct. at 2237.

²⁸ See, e.g., Einer Elhauge & Alex Krueger, *Solving the Patent Settlement Puzzle*, 91 TEX. L. REV. 283 (2012) (considering risk aversion and asymmetric expectations and reaching a similar result).

The HMWW false positives can only arise under special circumstances. Moreover, without the *Actavis* inference, even in these special circumstances the parties would not actually choose a procompetitive settlement. The *Actavis* inference may lead to litigation costs in these special circumstances, as defendants are put to the trouble of explaining their unusual circumstances. But it avoids the alternative, which would be highly anticompetitive settlements and many false negatives. When both false positives and false negatives are considered, and when we consider the settlements that the Brand and Generic would actually choose without the *Actavis* inference, it becomes clear that the inference is a very good idea. ●

Nancy Rose, New Deputy Assistant Attorney General for Economics

Elizabeth M. Bailey and Tracy Orcholski

On September 8, 2014, Professor Nancy Rose became the new Deputy Assistant Attorney General (DAAG) for Economic Analysis in the U.S. Department of Justice's Antitrust Division. Professor Rose is on leave from the Department of Economics at the Massachusetts Institute of Technology (MIT), where she is the Charles P. Kindleberger Professor of Applied Economics.¹

Previously, she served as the Director of the National Bureau of Economic Research Program in Industrial Organization and as a member of the Board of Directors for Charles River Associates, an economic consulting firm. Unlike several of her DAAG predecessors, Professor Rose has not engaged in any publicly known economic consulting or expert witness assignments.

The majority of her research has focused on industries in which the federal government has historically had some degree of control over pricing, especially the U.S. airline industry and the U.S. electric utility industry, both of which are industries in which the U.S. Department of Justice's Antitrust Division acts as an advocate for competition. Earlier work of hers studied the effect of regulation in the U.S. trucking industry and the commercial space satellite industry, two other industries for which the Antitrust Division advocates.

A constant theme throughout Professor Rose's academic research is the use of a data-driven analysis to understand how firms adjust their behavior in response to regulation. Notably, her research frequently focuses on how regulation affects firms' choices of non-price strategic variables, including entry, innovation and R&D, new technology adoption, productivity and efficiency, executive compensation and other production costs, and quality dimensions such as service and safety. She often focuses on the distributional effects of regulation, such as the welfare effects associated with who wins and who loses from changes in regulation.

The remainder of this article describes her academic research in these areas and provides reflections on how this experience may influence the questions the DOJ's Economic Analysis Group (EAG) will ask and the types of analyses EAG will perform during her time as a DAAG.

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Elizabeth M. Bailey is an Academic Affiliate and **Tracy Orcholski** is a Senior Consultant at NERA Economic Consulting. The views expressed are their own and do not necessarily reflect the views of others at NERA.

U.S. Commercial Airline Industry

Much of Professor Rose's academic research has focused on the U.S. airline industry. She has analyzed the effects of deregulation, firm-level financial distress, and market structure on prices and non-price attributes, such as routes served and safety. She has used the large amount of data available from mandatory reporting requirements to test empirically theories of complex market interactions.

¹ Professor Rose received a Ph.D in economics from MIT in 1985. She joined the MIT economics department in 1994. Prior to that she was an associate professor of applied economics in the MIT Sloan School of Management. Her homepage at MIT is available at <http://economics.mit.edu/faculty/nrose>.

Her most-cited paper, written with her frequent co-author Severin Borenstein, documents significant differences in prices—called price dispersion—paid across passengers on the same airline and route, and studies how price dispersion is related to market structure in the airline industry.² Using theoretical predictions of various market structures, she and her co-author try to disentangle price dispersion caused by price discrimination (that is, differences in markups of price over cost) from price dispersion caused by differences in the cost-to-serve, such as differences in capacity constraints. The authors demonstrate that price dispersion cannot be explained only by differences in the cost-to-serve.³

The authors also study how price dispersion varies across airlines and routes to understand its relationship to market concentration. They find that as the number of airlines on a route grows, holding the number of flights constant, price dispersion increases. This finding is consistent with models of monopolistic competition in which price discrimination increases as the market moves from monopoly to imperfect competition, and suggests “traditional monopoly theories of price discrimination may give neither complete explanations nor accurate predictions of pricing patterns in monopolistically competitive markets.”⁴ Monopolistic competition describes a market in which many firms sell similar but differentiated goods such that they are not perfect substitutes. In this case, flights on a given route are differentiated by attributes such as time of the flight and type of aircraft and amenities, so that flights are differentiated across and within airlines.

The airline industry is notable not only for deregulation in the 1970s and its sophisticated pricing models since then, but also for its frequent brushes with bankruptcy. In another co-authored paper, Professor Rose uses data from seven airlines entering Chapter 11 bankruptcy between 1989 and 1992 to assess the effect of firm financial distress on price.⁵ The work is important, in part, because economic theory provides mixed predictions about the effect of airline bankruptcy on airfares.⁶ Contrary to statements from rival airlines that price cutting by airlines in bankruptcy leads to ruinous competition for the industry, Professor Rose and her co-author find that airlines about to enter bankruptcy reduce prices by a relatively small amount but do not reduce prices further after entering bankruptcy, and that rival airlines respond with flat to increased prices.

Professor Rose’s research in the airline industry also focuses on how market structure and airline attributes affect non-price decisions, such as routes served and safety. Using 30 years of airline data, Professor Rose finds an increase in accident rates following periods of reduced airline profitability, especially for small and medium-sized carriers.⁷ Because she cannot establish with

A constant theme

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to understand how firms

adjust their behavior in

response to regulation.

² Severin Borenstein & Nancy Rose, *Competition and Price Dispersion in the U.S. Airline Industry*, 102 J. POL. ECON. 653 (1994), available at <http://economics.mit.edu/files/4321>.

³ The authors are also careful to point out that a finding of price discrimination is not on its own indicative of welfare loss and that it does not necessarily mean airlines are earning profits in excess of average cost. *Id.* at 655.

⁴ *Id.* at 676.

⁵ Severin Borenstein & Nancy Rose, *Bankruptcy and Pricing Behavior in U.S. Airline Markets*, 85 AM. ECON. REV. (PAPERS & PROC.) 397 (1995), available at <http://economics.mit.edu/files/4322>.

⁶ On the one hand, financial distress may lower prices offered by distressed airlines for a number of reasons. For example, demand may be lower because consumers perceive bankruptcy as a signal of lower quality. On the other hand, financial distress may increase prices offered by distressed airlines, for example, by imposing liquidity constraints on the airline. Moreover, rival airlines may increase or decrease prices in response to financially distressed airlines depending on several factors, such as the shape of the residual demand curve, propensity for predatory behavior, and whether the bankruptcy breaks up collusive pricing.

⁷ Nancy Rose, *Profitability and Product Quality: Economic Determinants of Airline Safety Performance*, 98 J. POL. ECON. 944 (1990), available at <http://economics.mit.edu/files/4317>.

certainty a causal relationship, Professor Rose carefully interprets her results as a basis for increasing safety regulatory scrutiny of smaller airlines rather than as a basis for or against deregulation of the airline industry as a whole.⁸

U.S. Electricity Industry

In addition to airlines, Professor Rose has published extensive research on the electricity industry, with a significant portion of that research focused on new technology adoption.

One of her most well-known and influential papers in this industry was written with Paul Joskow and examines the factors that affect how quickly firms adopt new technologies.⁹ To address the confounding effects of competition and market structure on the factors that influence the speed of adoption of new technology, Professor Rose and her co-author rely on a data set limited to local monopolies subject to price regulation, namely regulated investor-owned, government-owned, and cooperative-owned electric utilities. The authors assess the effect of firm size, ownership structure, and magnitude of expected cost savings on the adoption of coal-fired steam electric generating technology. They find that large firms were substantially more likely to be early adopters of new technology than small firms, and that investor-owned firms tended to adopt new technologies earlier than government-owned firms.

An important contribution of this paper is that the authors statistically separate differences in firms' proclivity to adopt new technologies from differences in the rate at which opportunities arise to adopt new technologies. Imagine two firms, one large and one small, both of which adopt new technologies at the first opportunity but face different rates at which opportunities to adopt arise. If the large firm, given its size, gets an opportunity to adopt once every month and the small firm gets an opportunity to adopt once every 12 months, then failing to account for the rate of opportunities arising would lead to the spurious conclusion that the large firm is an earlier adopter than the small firm. This is because one would simply observe the large firm adopting in the first month and the small firm adopting in the twelfth month, rather than recognizing that both adopted the technology at the first opportunity. The authors show that failing to account for the effect of firm size on opportunities to adopt can lead one to overestimate the likelihood that large firms are earlier technology adopters.

In an earlier, related paper, Professor Joskow and Professor Rose examine the impact of firm experience and technological change on the cost to construct new coal-fired electric generating units between 1960 and 1980.¹⁰ After controlling for a large number of factors, the authors find that significant scale economies exist in generating unit construction cost, and that larger firms may be better positioned to take advantage of cost savings attributable to the benefits of learning and experience.

More recently, Professor Rose and two co-authors illustrate, using data from U.S. electric generating plants, how government regulation can distort incentives.¹¹ The authors find that electric

⁸ *Id.* at 945.

⁹ Paul Joskow & Nancy Rose, *Diffusion of New Technologies: Evidence from the Electric Utility Industry*, 21 RAND J. ECON. 354 (1990), available at <http://economics.mit.edu/files/4318>.

¹⁰ Paul Joskow & Nancy Rose, *The Effects of Technological Change, Experience, and Environmental Regulation on the Construction Costs of Coal-Burning Generating Units*, 16 RAND J. ECON. 1 (1985), available at <http://economics.mit.edu/files/4306>.

¹¹ Kira Fabrizio, Nancy Rose & Catherine Wolfram, *Do Markets Reduce Costs? Assessing the Impact of Regulatory Restructuring on U.S. Electric Generation Efficiency*, 97 AM. ECON. REV. 1250 (2007), available at <http://economics.mit.edu/files/1484>.

generating plants operating under restructured, market-oriented price regulation improved their productivity, through reduced labor costs and nonfuel operating expenses, more than comparable electric generating plants operating under “cost of service” pricing regulations.

Analytical Themes

Taken as a whole, Professor Rose’s body of work reflects a pragmatic and empirical approach to analyzing strategic decisions made by firms in regulated industries. That pragmatism is reflected in her own comments in 2012 about the effect of regulatory intervention: “The policy trade-off is not between imperfect markets and perfect regulation, but choosing which flaws—market or regulatory—are less costly.”¹²

The policy trade-off is

not between imperfect

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Professor Rose generally uses testable hypotheses and reduced form estimation to answer questions rather than building structural models of competition based on rigid assumptions. She is careful to caveat results that are suggestive rather than conclusive, and her deep understanding of these industries allows her to explore the practical differences between theory and reality.

In addition, her analyses often identify and quantify the costs and benefits of changes in regulatory policy. For example, Professor Rose has noted that while airline deregulation has likely increased consumer welfare, it also has been a “costly experiment” for many airlines.¹³ Similarly, she has noted that, even among consumers, deregulation has redistributed welfare. Since deregulation, seats have gotten smaller, amenities have disappeared, and flights are more crowded.¹⁴ Although most passengers have shown through their buying decisions that they prefer lower prices to maintaining these comforts, amenity-loving business travelers are worse off.¹⁵

While Professor Rose’s work suggests that she supports deregulation, she notes that deregulation should be accompanied by effective regulatory oversight because poorly designed regulations can result in worse market outcomes than imperfect competition. With respect to antitrust regulatory oversight, she has identified merger activity “when antitrust policy was relatively lax” as contributing to increased concentration in airline routes, especially during the 1980s.¹⁶ She has also shown how poorly designed regulations can fail to protect competition and exacerbate market failures. For example, she finds that the Interstate Commerce Commission’s rate-setting policies allowed trucking companies to earn monopoly profits by charging supracompetitive prices.¹⁷ She also has commented that regulators must stay vigilant to attempts by firms to evade regulation, an effort which she has characterized as “something like the arcade game of ‘Whac-A-Mole.’”¹⁸

Conclusion

Professor Rose brings deep industry-level expertise to the Antitrust Division in a number of the Division’s core areas of competition advocacy work. She also brings a practical understanding of

¹² Nancy Rose, *After Airline Deregulation and Alfred E. Kahn*, 102 AM. ECON. REV. (PAPERS & PROC.) 376, 378 (2012).

¹³ Severin Borenstein & Nancy Rose, *How Airline Markets Work . . . or Do They? Regulatory Reform in the Airline Industry*, in ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED? 59 (Nancy L. Rose ed., 2014), available at <http://economics.mit.edu/files/4333>.

¹⁴ *Id.* at 25–30.

¹⁵ *Id.* at 25, 28.

¹⁶ *Id.* at 23.

¹⁷ Nancy Rose, *The Incidence of Regulatory Rents in the Motor Carrier Industry*, 16 RAND J. ECON. 299 (1985), available at <http://economics.mit.edu/files/4311>.

¹⁸ Rose, *supra* note 12, at 377.

how imperfect competition can influence a firm's choice of important non-price dimensions of competition, such as quality, level of service, safety, technological innovation and technology adoption.

A number of Professor Rose's research interests appear to be a natural complement to the topics that Bill Baer, Assistant Attorney General (AAG) for the Antitrust Division, has discussed over the past year. In his first formal remarks made as AAG, Baer emphasized the importance of obtaining remedies in merger matters that effectively restore any competition lost as a result of a proposed transaction, and remedies in non-merger matters that both restore lost competition and prevent the illegal behavior from recurring.¹⁹ Government-imposed structural and behavioral remedies are akin to a regulatory environment in that they have the potential to create undesirable distortions in the strategic choices made by firms in that industry. Professor Rose's academic research interests would be a benefit to any internal effort to evaluate the effectiveness of the remedies the Division has sought in the past or of the Division's competition advocacy work more broadly.

In addition, Professor Rose's research focus on non-price strategic variables, coupled with the DOJ's focus on the role of new features and improved functionality as strategic dimensions of competition in its litigation of Bazaarvoice's non-reportable acquisition of PowerReviews, Inc.,²⁰ may well signal a renewed interest at the Division to quantify non-price effects in merger and non-merger matters. ●

¹⁹ Bill Baer, Remedies Matter: The Importance of Achieving Effective Antitrust Outcomes, Remarks at the Georgetown Law 7th Annual Global Antitrust Enforcement Symposium (Sept. 25, 2013) (transcript available at <http://www.justice.gov/atr/public/speeches/300930.pdf>).

²⁰ United States v. Bazaarvoice, No. 3:13-cv-00133 (N.D. Cal. Jan. 9, 2014).

Paper Trail: Working Papers and Recent Scholarship

Editor's Note: In this edition we consider a paper that examines reverse payments in pharmaceutical patent infringement litigation.

Send suggestions for papers to review to: page@law.ufl.edu or jwoodbury@crai.com.

—WILLIAM H. PAGE AND JOHN R. WOODBURY

Recent Papers

Michael A. Carrier, **Payment After *Actavis***, 100 IOWA L. REV. (forthcoming), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2418685

*FTC v. Actavis*¹ held that pay-for-delay settlements of pharmaceutical patent infringement suits can violate Section 1 of the Sherman Act, even if the exclusionary effect of a settlement is no broader than the branded drug manufacturer's patent. The defining feature of these settlements is the reverse payment: the branded drug manufacturer sues the generic drug manufacturer for infringement, but the settlement requires the plaintiff to pay the defendant in return for the defendant's agreement to its delay entry into the market. Such a payment "amounts to a purchase by the patentee of the exclusive right to sell its product, a right it already claims but would lose if the patent litigation were to continue and the patent were held invalid or not infringed by the generic product."²

Much of the majority's reasoning in *Actavis* focused on the size of the reverse payment (relative to any justification) as an indication of the possible anticompetitive effect of the settlement, regardless of the strength of the challenged patent. A large unjustified payment, the Court reasoned, may be "strong evidence" of (1) the patentee's "power to charge prices higher than the competitive level,"³ (2) its "doubts about the patent's survival"⁴ in litigation, and (3) its intent "to induce the generic challenger to abandon its claim [in return for] a share of its monopoly profits that would otherwise be lost in the competitive market"⁵ if the generic producer were to enter. The Court found quick-look scrutiny of these issues inappropriate, but left to lower courts to determine what level of scrutiny under the rule of reason was appropriate.⁶

¹ 133 S. Ct. 2223 (2013).

² *Id.* at 2234.

³ *Id.* at 2236.

⁴ *Id.*

⁵ *Id.* at 2235.

⁶ *Id.* at 2237–38.

Actavis has already been the subject of several articles,⁷ a symposium in *Antitrust* magazine,⁸ and ensuing commentary.⁹ In the paper under consideration, Michael Carrier proposes a test for when settlement terms constitute “exclusion payments,” a term he prefers to reverse payments. All settlements give the plaintiff something.¹⁰ Under Carrier’s test, that something is an exclusion payment if it buys delayed entry for more than what the generic manufacturer could get if it won its lawsuit. If the generic producer could recover the same kind of consideration by judicial determination that the patent was invalid or not infringed, then the payment reflects no more than the strength of the patent; if the consideration is more than the generic producer could recover by winning, then it reflects something else—presumably shared monopoly profits preserved by the delay.

Pay-for delay settlements occur almost exclusively in drug patent litigation because of a perverse consequence of the Hatch-Waxman Act, which was enacted to encourage generic drug producers to enter. One part of the Act gives a 180-day period of exclusivity to the first generic producer to file a so-called Paragraph IV certification claiming that the branded drug patent is invalid or not infringed—a generic producer, in other words, that proposes to enter before the expiration of the patent. Because the exclusivity period begins only when the first filer starts to market its drug, an exclusion payment to the first filer as a practical matter excludes all other generic producers as well. Because of this framework, the first filer has an incentive to drop its challenge of the branded producer’s patent in return for a share of the brand’s monopoly profit during the remainder of the patent term. The two producers’ combined profits are larger under such an arrangement than under competition, even in a duopoly.

As the Supreme Court recognized, settlements that involve delay without a reverse payment are likely benign.¹¹ If the agreed date of entry is before the expiration of the patent—a so-called patent-term split agreement—the settlement is better for consumers than an unchallenged patent. The length of the delay relative to the remaining years in the patent term very like reflects the parties’ assessment of the probability of a defense victory. On the other hand, a settlement that promises delay in return for a large payment is likely anticompetitive because the delay is longer than would have been the case in a simple patent-term split.

⁷ See, e.g., Daniel A. Crane, *Actavis, The Reverse Payment Fallacy, and the Continuing Need for Regulatory Solutions*, 15 MINN. J.L. SCI. & TECH. 77 (2014); Murat Mungan, *Reverse Payments, Perverse Incentives*, 27 HARV. J.L. & TECH. 1 (2013); Samanth Addanki & Henry R. Butler, *Activating Actavis: Economic Issues in Applying the Rule of Reason to Reverse Payment Settlements*, 15 MINN. J.L. SCI. & TECH. 77 (2014).

⁸ James J. O’Connell, *The Elephant Remains*, ANTITRUST, Fall 2013, at 5; Amanda P. Reeves, *Muddying the Settlement Waters: Open Questions and Unintended Consequences Following FTC v. Actavis*, ANTITRUST, Fall 2013, at 9; Aaron Edlin, Scott Hemphill, Herbert Hovenkamp & Carl Shapiro, *Activating Actavis*, ANTITRUST, Fall 2013, at 16; Ian Simmons, Kenneth R. O’Rourke & Scott Schaeffer, *Viewing FTC v. Actavis Through the Lens of Clayton Act Section 4*, ANTITRUST, Fall 2013, at 24; William O. Kerr & Cleve B. Tyler, *Measuring Reverse Payments in the Wake of Actavis*, ANTITRUST, Fall 2013, at 29; Kevin D. McDonald, *Because I Said So: On the Competitive Rationale of FTC v. Actavis*, ANTITRUST, Fall 2013, at 36; Rudolph J.R. Peritz, *The Competition Question Unmasked in Actavis: What Is the Scope of the Patent Right to Exclude?*, ANTITRUST, Fall 2013, at 45; Robert A. Skitol & Kenneth M. Vorrasi, *FTC v. Actavis: Inviting a More Nimble Rule of Reason*, ANTITRUST, Fall 2013, at 51; Theodore Voorhees, Jr., *Reasoning Through the Rule of Reason for RPM*, ANTITRUST, Fall 2013, at 58.

⁹ Barry C. Harris, Kevin M. Murphy, Robert D. Willig & Matthew B. Wright, *Activating Actavis: A More Complete Story*, ANTITRUST, Spring 2014, at 83.

¹⁰ *Asahi Glass Co. v. Pentech Pharma., Inc.*, 289 F. Supp. 2d 986, 994 (N.D. Ill. 2003) (Posner, J.) (“But any settlement agreement can be characterized as involving ‘compensation’ to the defendant, who would not settle unless he had something to show for the settlement.”)

¹¹ *Actavis*, 133 S. Ct. at 2234–35.

The Court recognized only two exceptions to this inference from the reverse payment: first, if the settlement provides for payment to the plaintiff that reflects an estimate of the litigation costs that the patentee expects to save by settling the case. Carrier reports that studies have found that patent owners spend up to \$6 million in Hatch-Waxman litigation, while generic producers spend an average of \$10 million. Somewhat confusingly, he sums up: “In other words (and offering a conservative synthesis), a transfer of \$5 million or \$10 million seems to be a rough approximation for litigation costs.” He adds in a footnote that “[t]his standard is conservative since the generic also would save its litigation costs as a result of settlement. Any agreement thus would be expected to be less than the entirety of the brand’s saved costs.”¹² The point seems to be that, even though generic producers spend twice as much on average as patent owners in Hatch-Waxman litigation, and therefore save twice as much by settling, a settlement that pays the generic producer an amount equal to the patentee’s litigation costs falls within a kind of safe harbor.

A payment also may be justified if it is only in return for goods or services that the generic producer provides to the branded drug producer. Carrier, however, argues that these sorts of arrangements are usually phony because branded producers never make them in settlements that do not also exclude the generic producer. He infers that it must be the exclusion that is driving everything. He cites several cases, including *Actavis* itself, in which the payments were conditional on exclusion and far exceeded the value of the purported services the generic producer was to provide.

Carrier then applies his test in four instances in which the generic producer agrees to delay entry in return for consideration. The first three instances involve the more usual case, in which the generic producer has not started production so it is not risking damage liability; it only wants a declaration of invalidity or non-infringement so it can enter the market. In the fourth, the generic producer has started production, taking on the attendant risk of suffering a significant damage award for infringement.

As Carrier discusses earlier in the paper, if the settlement provides only for delayed entry without payment, as in the patent-term split, the generic producer is getting essentially what it was suing for, only a bit later—a delay that probably reflects the parties’ assessments of the strength of the patent. But if it receives consideration worth more than the patentee’s expected litigation costs, the payment is exclusionary. The clearest instance of such an exclusionary payment would be cash. If there is a substantial cash payment to the generic producer in return for delayed entry, then it is no longer appropriate to infer that the a patent-term split reflects only the parties’ estimate of their chances of winning the litigation.

Carrier argues, contrary to at least one post-*Actavis* decision,¹³ that these “payments” need not be cash; they can also be in the form of other undertakings that provide value to the generic producer other than the right to enter the market. In a lengthy discussion, Carrier argues that one form of unjustified payment is a so-called poison pill provision that allows a first-filing generic producer that settles with an agreed entry date years in the future to enter sooner (and invoke its 180-day exclusivity) if another generic successfully sues and enters earlier. He argues plausibly and at length, with several examples, that these terms provide substantial value to the first filer by reducing uncertainty (for example, by eliminating the risk that the branded drug would win the lit-

¹² Carrier cites Joshua P. Davis, *Applying Litigation Economics to Patent Settlements: Why Reverse Payments Should Be Per Se Illegal*, 41 RUTGERS L.J. 255, 304–05 (2009).

¹³ *In re Lamictal Direct Purchaser Antitrust Litig.*, No. 12-CV-995, 2014 WL 282755 (D.N.J. Jan. 24, 2014).

igation voiding the first's filer's 180-day exclusivity) and deterring other generics from suing and entering. He also argues that an unjustified payment may take the form of an agreement by the branded drug manufacturer to give up its right to market its own generic version of the drug during the 180-day exclusivity period. Even if the first-filing generic producer had won the litigation, it could not have prevented the branded drug producer from immediately offering a generic version of its product. Consequently, if the branded producer gives up this right, the generic producer's delay in entry was likely purchased, at least in part, in return for a share monopoly profit.

Carrier's final illustration involves the unusual case (perhaps 10 percent of Paragraph IV filings), in which the generic producer has already started production, risking not only losing its own claims against the branded drug producer but also suffering a judgment for damages—including lost profits—in the branded drug producer's counterclaim for lost profits. If, in these circumstances, the generic producer settles without paying the branded producer anything on the counterclaim, then the settlement may involve the branded producer's forgiveness of its expected damages, which would constitute a form of payment. Carrier does not provide the full outlines of such a settlement, but if it involved delayed entry, the timing of the entry might be affected by the branded producer's agreement to forgo a disproportionately large amount of damages it would otherwise recover. Carrier is uncomfortable with the conclusion that this sort of implicit payment could be characterized as exclusionary because the amount of damages the patent owner is forgiving is not evident from the face of the agreement and could only be estimated by evaluating the strength of the patent. This is an inquiry he wants to avoid, because the Supreme Court rested its standard on the assumption that a district court can determine liability by evaluating the size of the payment without examining the strength of the branded drug producer's patent. ●

—WHP