

PATENT-SPLITTING SETTLEMENTS AND THE REVERSE PAYMENT FALLACY

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I. INTRODUCTION

Considerable controversy has been sparked by so-called “reverse payments”—where a patent holder has supposedly paid a generic pharmaceutical manufacturer money or “net consideration” to settle a patent dispute.¹ But there really is no such thing as a “reverse payment” in the context of a settlement of a patent case. Or, if there is such a thing, it is the exact opposite of what critics of such settlements suppose. Those critics think that a patent holder paying money to an alleged infringer to settle a patent suit is the reverse of what normally happens in such settlements. As this article shows, however, it is likely that consideration is moving from the patent holder to the alleged infringer in most settlements of patent disputes.

To be sure, the pharmaceutical industry patent disputes are not typical, because the alleged infringer has not entered the market. Thus, the litigants cannot settle the disputes the way such disputes are typically resolved: usually, the patent holder “pays” to settle by accepting less in damages from the infringer than it expects to get from litigating. The

* Member of the Bar of the District of Columbia and New York. One case addressing a pharmaceutical industry patent-splitting settlement that permitted the alleged infringer to enter before the end of the patent life is the Federal Trade Commission’s decision in *Schering-Plough Corp.*, FTC Docket No. 9297 (Dec. 22, 2003), available at <http://www.ftc.gov/os/adjpro/d9297/031218commissionopinion.pdf>. The author of this article represented Schering-Plough in the Federal Trade Commission matter.

¹ See FTC, *GENERIC DRUG ENTRY PRIOR TO PATENT EXPIRATION* 23–34 (July 2002), available at <http://www.ftc.gov/os/2002/07/genericdrugstudy.pdf> [hereinafter *FTC GENERIC DRUG STUDY*] (setting out statistics concerning settlements involving “brand” payments that split the patent life at Table 3-3). The courts have addressed several settlements of pharmaceutical patent disputes with payments that resulted in the alleged infringer agreeing not to enter for some period, including *In re Cardizem Antitrust Litig.*, 105 F. Supp. 2d 682, 705–06 (E.D. Mich. 2000), *aff’d*, 332 F.3d 896 (6th Cir. 2003); *In re Buspirone Patent Antitrust Litig.*, 185 F. Supp. 2d 363 (S.D.N.Y. 2002); *Valley Drug Co. v. Geneva Pharms. Inc.*, 344 F. 3d 1294 (11th Cir. 2003); *In re Tamoxifen Citrate Antitrust Litig.*, 262 F. Supp. 2d 17 (E.D.N.Y. 2003). See also *Asahi Glass Co. v. Pentech Pharm. Inc.*, 289 F. Supp. 2d 986 (N. D. Ill. 2003).

patent holder in return gets a better split of the patent life than it expects to get from litigating. But it is also the case that in the more typical patent dispute, the patent holder may pay by accepting less in damages than it expects to get in litigation in order to get a better split in patent life than it expects to get in that litigation. One conclusion of this article is that the logic that would condemn settlements with reverse payments would lead to the condemnation of many or perhaps most patent settlements.

A second conclusion of this article is that reverse payments are not necessarily anticompetitive. There are many circumstances where a reverse payment is necessary to resolve a patent litigation and that resolution is better for consumers than continued litigation. For example, a risk averse patent holder may pay to achieve a settlement that splits the patent life in a way that is no better (or even worse) than it thinks would occur in litigation. The payment may be necessary, for instance, because the alleged infringer is unduly optimistic about its chances of prevailing in the litigation. Given the difference in parties' perceptions about the outcome, no settlement may be possible without the payment.

A third conclusion of this article is that the logic condemning reverse payments is incompatible with the way courts usually mete out justice. Those critical of reverse payments eschew traditional standards of proof in civil litigation, replacing those standards with a probabilistic analysis of patent rights. For example, a reverse payment might be condemned even if it were *more likely than not* that the patent holder would prevail in the patent litigation and would have the right to exclude the alleged infringer. The theory is that the patent holder should not get a better patent split than it thinks it would get in litigation. If, for instance, the patent holder thinks it has a 70 percent chance of prevailing, it should not be able to pay to get exclusivity for 90 percent of the remaining patent life. The concern of the advocates of the probabilistic approach is that the agreement will diminish "uncertain competition." That is, we may not know how much competition we will get on average if the parties continued to litigate (and hence the uncertainty). But, we know that, on average, consumers would get more competition from continued litigation than they would get from the settlements. This article shows how alien this approach is to the way courts normally think about proof. Broad application of the probabilistic approach would require a complete rethinking of the burden of proof.

A fourth conclusion of this article is that virtual per se condemnation of reverse payments is contrary to the modern trend in antitrust. That trend focuses primarily on effects, not intent. Those arguing for a per

se or near per se standard of illegality base their analysis on the perceptions of the settling parties, not on the exclusionary effects that flow from a patent. They think that consumers will be worse off because at least one of the litigating parties thinks consumers will be worse off. They do not know what actually would happen in the litigation in that specific case. At best, they have a notion of what would happen on average.

Finally, this article proposes a methodology for assessing patent splitting arrangements that borrows from both the proponents and opponents of reverse payments. It honors the patent holder's right to exclude, but assesses probabilities in certain cases. This analysis is complex and may suggest to some that there is merit in simply declaring any settlement arguably within the scope of the patent per se legal. Of course, litigating parties cannot simply wait for the resolution of this debate. Thus, until the issue is resolved, the safest course for settling parties may be to obtain court approval for the settlement. Such settlements should receive immunity from antitrust prosecution under the *Noerr-Pennington* doctrine.

To begin to understand the controversy, we must define our terms. As used in this article, a "patent splitting settlement" is a settlement of patent litigation in which the alleged infringer obtains the ability to exploit the patent but not for the full range of time or uses. A "reverse payment" is the pejorative term critics use to describe the flow of net consideration from the patent holder to the alleged infringer to obtain either a patent splitting settlement or a settlement that keeps the alleged infringer out of the market for the life of the patent. The critics argue that a patent holder uses a reverse payment to bribe an alleged infringer to settle a patent litigation on terms that are better for the patent holder and worse for consumers than the expected outcome of the litigation.² They call it a reverse payment to contrast it with what they think is the more typical circumstance where the alleged infringer pays the patent holder to settle the patent dispute. As suggested above and discussed below, appearances can be quite deceiving.

² Articles critical of reverse payments include Carl Shapiro, *Antitrust Limits to Patent Settlements*, 34 RAND J. ECON. 391, 407–08 (2003); Herbert Hovenkamp, Mark Janis & Mark A. Lemley, *Anticompetitive Settlements of Intellectual Property Disputes*, 87 MINN. L. REV. 1719, 1762 (2003); David Balto, *Pharmaceutical Patent Settlements: The Antitrust Risks*, 55 FOOD & DRUG L.J. 321 (2000); JEREMY BULOW, THE GAMING OF PHARMACEUTICAL PATENTS (Stanford Research Paper No. 1804 May 2003); Keith Leffler & Cris Leffler, *Patent Litigation Settlements: Payment by the Patent Holder Are Anticompetitive and Should Be Per Se Illegal*, RES. IN L. & ECON. (forthcoming), available at <http://faculty.washington.edu/kleffler/Research.html>.

II. REVERSE PAYMENTS AND THE HATCH-WAXMAN ACT

The Drug Price Competition and Patent Term Restoration Act of 1984, more commonly known as the Hatch-Waxman Act,³ offers a means for generic versions of established pharmaceuticals to enter the market without going through the full testing required for new drugs. A generic applicant with a drug that is the bioequivalent of an approved brand-name pharmaceutical can rely on the testing of the branded drug to establish safety and efficacy. To begin the process of generic entry, the applicant files an Abbreviated New Drug Application (ANDA).⁴ What is most important for our purpose is the Hatch-Waxman requirement that the ANDA report the reason entry would not infringe the patents covering the brand-name pharmaceutical. For instance, the patent may have expired. A more interesting case is one where the applicant certifies that the relevant patent is invalid or that the generic drug will not infringe the patent.⁵ Such a certification of noninfringement or invalidity is known as a Paragraph IV Certification.

Once the ANDA filer has provided a Paragraph IV Certification, the patent holder may file an infringement suit. If it does so within forty-five days of receiving notice, the patent holder obtains an automatic stay preventing the generic from entering the market. The stay may last up to thirty months from the receipt of the notice. Because of the stay, the patent litigation will occur (or at least start) before the generic can enter the market.⁶ This contrasts sharply with the more typical situation where a patent holder sues an alleged infringer already in the market allegedly practicing the patented technology.

While the forms of settlement of Hatch-Waxman controversies have probably been as varied as other patent settlements, one form of settle-

³ 21 U.S.C. § 355.

⁴ This discussion is derived from the more extended discussion of the Hatch-Waxman Act in FTC *GENERIC DRUG STUDY*, *supra* note 1, at 4–8.

⁵ In both of these cases, the erstwhile entrant is asserting that the generic is outside the scope of a validly granted patent. In the case of invalidity, the generic entrant asserts the scope of the incumbent's patent is zero, while a claim of non-infringement concedes that the incumbent's patent does cover some range in intellectual property space but that the metes and bounds of the patent do not include the generic formulation.

⁶ The Hatch-Waxman Act was a compromise designed to meet opposing concerns of innovator and generic companies. On the one hand, innovator drug companies filed for patent protection on their innovations years before the patented drug finally obtained FDA approval for use. Studies in the 1980s concluded that pharmaceutical patents had effective lives of no more than 8 to 10 years because of the time needed to clear the FDA review process. On the other side, under applicable Supreme Court decisions, generic drug companies could not, in effect, begin establishing generic equivalence until the incumbent's patent expired and needed to replicate many of the studies the incumbent had already performed.

ment has attracted particular attention. In this form of settlement, the patent holder offers the alleged infringer net consideration, also known as a reverse payment, to settle the patent dispute. In return, the alleged infringer agrees to either exit the market for the life of the patent or to split the remaining life of the patent.⁷ Where the patent life is split, it is not split in the colloquial sense, with one party practicing the patent for part of the patent life and the other party practicing the patent for the remainder. Rather, the patent holder continues to practice the patent for the entire patent life while the infringer practices the patent for part of that life. For example, a patent might have ten years left to its life and the settlement might permit the alleged infringer to enter five years from the date of the settlement, splitting the patent “50–50.” Of course, a settlement may “split” the patent life 100–0, but that would be an extreme use of the term “patent splitting” settlement.

The detractors of this “reverse payment” argue that one could infer that a patent holder would only make such a payment if it results in less competition than would be expected if the litigation were to go forward. According to Hovenkamp, Janis, and Lemley, “if a pioneer pays a generic to delay entry, the likelihood is that the delay does not in fact represent the expected outcome of litigation, but rather has been biased toward later entry by the payment.”⁸ Similarly Carl Shapiro writes, “In the simple model, a naked cash payment flowing from the patent holder to the challenger (in excess of avoided litigation costs) is a clear signal that the settlement is likely to be anticompetitive. Presumably, the patent holder would not pay more than avoided litigation costs unless it believed that it was buying later entry than it expects to face through the litigation alternative.”⁹

To set up the problem for further analysis consider the following. The litigation might result in the generic’s entry at the conclusion of litigation or it might delay the generic’s entry until the expiration of the patent in question. The probability of each outcome yields a mean probable date of entry, which is somewhere between the polar outcomes.¹⁰ For

⁷ See FTC GENERIC DRUG STUDY *supra* note 1, at 23–34 (setting out statistics concerning settlements involving “brand” payments that split the patent life at Table 3-3).

⁸ Hovenkamp et al., *supra* note 2, at 1762.

⁹ Shapiro, *supra* note 2, at 408.

¹⁰ To simplify the analysis, we assume that generic entry expands output, for it is output restrictions that are the hallmark of monopoly. See, e.g., *Schachar v. Am. Acad. of Ophthalmology, Inc.*, 870 F.2d 397, 399 (7th Cir. 1989) (“Antitrust law is about consumers’ welfare. . . . It condemns reductions in output that drive up prices. . . .”); *Chicago Prof’l Sports L.P. v. NBA*, 95 F.3d 593, 597 (7th Cir. 1996) (“The core question in antitrust is output. . . . A high price is not itself a violation of the Sherman Act.”). However, antitrust scholars are well aware of business practices (e.g., resale price maintenance, exclusive

instance, assume that the patent at issue in the litigation would expire in 2010. Assume that the court of appeals would render its final judgment in the year 2000. Assume that both litigants believe that the case is about 50–50. Under these circumstances, the mean probable date of entry would be 2005 (ignoring the time value of money). According to the model, all else equal, the generic or alleged infringer would not accept a patent-splitting settlement that delays entry beyond 2005.¹¹

However, the alleged infringer might be willing to accept an entry date of 2006, or for that matter 2010, if the patent holder were to pay the alleged infringer for the later entry date. According to this theory, the patent holder has an incentive to pay if the patent holder has monopoly power.¹² The patent holder would use some, but not all, of its monopoly profits to “bribe” the alleged infringer to accept a settlement that results in an entry delay compared to the mean probable date of entry under litigation. The generic, according to the theory, has an incentive to

dealing) that may expand output by eliminating free riding. In the case of pharmaceuticals, to increase demand, branded drug companies engage in many forms of marketing to promote the value of the pharmaceutical to doctors and patients and to publicize the importance of complying with a particular drug regimen. Indeed, Richard E. Caves, Michael D. Whinston & Mark A. Hurwitz, *Patent Expiration, Entry and Competition in the U.S. Pharmaceutical Industry*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY (1991), observed that generic entry can be associated with both lower prices and lower output overall, making the welfare implication of generic entry difficult to determine. See also Ernst R. Berndt, Linda Bui, David Reiley & Glen Urban, *The Economics of a New Industry: Tracing the Diffusion of Anti-Ulcer Drugs*, in THE ECONOMICS OF NEW GOODS (Timothy Bresnahan & Robert J. Gordon eds., 1996) (showing that marketing efforts of pharmaceutical firm have substantial effects on “the size of the overall industry”); ZVI GRILICHES & IAIN M. COCKBURN, *GENERICS AND NEW GOODS IN PHARMACEUTICAL PRICE INDEXES 1217* (1994) (showing, that the output of two drugs they studied fell following generic entry).

¹¹ To simplify the analysis, we ignore the time value of money, which would suggest that the earlier years would be valued more than the later years and, conversely, also ignore growth in the market, which would tend to result in higher values for the later years. Further, we ignore the direct litigation costs that the parties might avoid by settlement.

¹² To be clear, the incumbent has a gross incentive to pay, and the entrant has a gross incentive to accept, in the sense that monopoly profits exceed twice duopoly profits. Whether specific settlements are the result of acting on this incentive depends upon the parties’ expectations of post-settlement sanctions, including class-action damage suits, if they have, in fact, acted to restrain competition in a way that reduces consumer welfare. Second, the incentive or intent approach to evaluating patent settlements assumes there is real monopoly power and, hence, real monopoly profits to be protected or divided. Whenever a firm must make sunk investments before entering a market, the expectation, fulfilled in equilibrium, must be that the post-entry price exceeds post-entry operating costs. Hence, as in a monopolistically competitive market, the mere existence of a positive price-cost margin for successful firms cannot be the touchstone for monopoly power. Similarly, if entry entails free riding, the fact that the entrant can sell for less than the incumbent is also not a sign of monopoly power prior to entry, as Caves et al. noted in their analysis of generic entry in pharmaceuticals. Caves et al., *supra* note 10, at 1. In the case of pharmaceutical patents, direct evidence that the market is monopolistically competitive—there are many firms already making close substitutes for the patented product—is probative regarding whether or not there is antitrust-relevant monopoly power.

accept the payment because it can earn more by sharing in the monopoly profits than it could earn by actually entering and competing.

III. JUDICIAL TREATMENT OF REVERSE PAYMENTS

The judicial treatment of reverse payments has ranged from per se condemnation¹³ to virtual per se legality.¹⁴ In between, there are cases that reject per se treatment and suggest that the rule of reason analysis is applicable.¹⁵ Courts condemning reverse payments per se characterize the agreement as a market division among actual or potential competitors. These holdings give almost no weight to the patent holder's right to exclude, barring the patent holder from proving that its patent precludes the alleged infringer's entry into the market. On the other end of the spectrum, some courts deem the arrangements virtually per se legal because the patent holder has a right to exclude.

Under the patent law, the patent holder has the right to exclude others from making, using, or selling the patent holder's valid patented invention.¹⁶ The antitrust laws fully accommodate this statutory right.¹⁷ A restriction on use of a patent does not typically constitute an antitrust violation, unless it both (1) meets the requirements for such violation and (2) is outside the scope of the patent grant.¹⁸ Accordingly, the holder of a valid and infringed patent may grant licenses that are "restricted in point of space or time, . . . [so long as he does] not enlarge his monopoly."¹⁹ Thus, if the patent holder has a valid and infringed patent, an agreement that excludes the infringer in whole or in part could not be unlawful. As the Supreme Court explained in *NYNEX Corp. v. Discon, Inc.*,²⁰ even outside the patent context, "behavior [that] hurt[s] consumers" is not unlawful if the "consumer injury naturally flowed . . . from the exercise of market power that is lawfully in the hands of a monopolist."

¹³ *In re Cardizem Antitrust Litig.*, 105 F. Supp. 2d at 705–06; *In re Buspirone Patent Litig.*, 185 F. Supp. 2d 363.

¹⁴ *Valley Drug Co.*, 344 F.3d 1294; *In re Tamoxifen Citrate Antitrust Litig.*, 262 F. Supp. 2d 17.

¹⁵ *In re Ciprofloxacin Hydrochloride Antitrust Litig.*, 261 F. Supp. 2d 188 (E.D.N.Y. 2003).

¹⁶ 35 U.S.C. §§ 154, 271(a). *United States v. United Shoe Mach. Co.*, 247 U.S. 32, 57 (1917) ("[A patent's] strength is in the restraint, the right to exclude others from the use of the invention, absolutely or on the terms the patentee chooses to impose.")

¹⁷ *Simpson v. Union Oil Co.*, 377 U.S. 13, 24 (1964) ("The patent laws . . . are in *pari materia* with the antitrust laws and modify them *pro tanto*."); U.S. Dep't of Justice & Federal Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property §§ 1.0, 2.1, 3.1 (1995).

¹⁸ *Monsanto v. McFarling*, 302 F.3d 1291, 1298 (Fed. Cir. 2002) (citing *General Talking Pictures Corp. v. Western Elec. Co.*, 305 U.S. 124, 127 (1938)).

¹⁹ *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 456 (1940).

²⁰ 525 U.S. 128, 136 (1998).

However, in the patent context, the behavior does not really hurt consumers because consumers are not entitled to profit by competition from infringers.²¹ And, if the authors of our patent laws are correct, consumers may be better off due to the innovation that is promoted by preventing infringement. As Federal Trade Commissioner Thomas Leary explained: “If the patent is valid, the pioneer manufacturer is entitled to its monopoly profit, and a settlement that merely transfers a portion of that profit to a potential generic manufacturer causes no harm.”²² Applying these principles in the *Tamoxifen Citrate Antitrust Litigation*,²³ the court stated that “[t]he holder of a lawfully obtained patent . . . may ‘prevent other[s] from utilizing his discovery’ In light of these basic principles, plaintiffs must prove that [defendant’s] conduct (i.e. entering into the Settlement Agreement) was impermissible under the patent laws.” Thus, “it appears beyond doubt that a court will have to determine the validity, enforceability or scope of [defendant’s] patent.”²⁴

Patents do not always trump the antitrust laws, however. Hovenkamp, Janis and Lemley would divide cases involving both patents and antitrust into three categories. In one category, the presence or absence of a patent is irrelevant because the practice is clearly not illegal under the antitrust laws and the case could be dismissed without delving into the merits of the patent. At the other extreme, the restriction is clearly

²¹ 12 HERBERT HOVENKAMP, ANTITRUST LAW ¶ 2040b, at 199 (1999).

²² Thomas B. Leary, Antitrust Issues in Settlement of Pharmaceutical Patent Disputes at 7, Prepared Remarks Before the Sixth Annual Health Care Antitrust Forum, Northwestern Univ. School of Law (Nov. 3, 2000). See also R. Hewitt Pate, Acting Assistant Attorney General, Antitrust Division, U.S. Dep’t of Justice, Antitrust and Intellectual Property at 7, Address Before American Intellectual Property Law Association, 2003 Mid-Winter Institute (Jan. 24, 2003) (“assessing the competitive significance of settlements often depends on an evaluation of the underlying strength of patent rights. If a patent is valid and infringed, then any competitive entry allowed by a settlement is up to the patent holder. If a patent is invalid or not infringed, then there should be no impediment to competitive entry whatsoever. The problem is that we have no way definitely to know which situation applies without evaluating the underlying IP rights, a task that is outside our core expertise as antitrust enforcers.”).

Commissioner Leary implicitly presumes that the incumbent’s rents from its innovation are, in fact, “monopoly profits.” As the joint DOJ/FTC Antitrust Guidelines for the Licensing of Intellectual Property § 2.0 (1995) state, however, intellectual property (e.g., a patent) does not imply monopoly (“the Agencies do not presume that intellectual property creates market power in the antitrust context”). Hence, it does not follow that a patent holder is necessarily earning “monopoly” profits. Nor would revenues in excess of current operating costs demonstrate monopoly profits as this may show no more than an ordinary return on its past investment in R&D. See Thomas R. Stauffer, *The Measurement of Corporate Rates of Return: A Generalized Formulation*, BELL J. ECON. & MGMT. SCI. 2 (1971); Franklin M. Fisher & John J. McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly*, 73 AM. ECON. REV. 73 (1983).

²³ 222 F. Supp. 2d 326, 327 (E.D.N.Y. 2002)

²⁴ *Id.* at 333.

beyond the scope of the intellectual property right, so that such rights are irrelevant to the antitrust analysis. It is only the middle set of cases that must be decided on intellectual property grounds—where the settlement agreement would not violate the antitrust laws if the patent were valid and infringed but would do so if the patent is invalid or not infringed.²⁵ An example of this middle category of cases, according to Hovenkamp, Janis and Lemley, is *Standard Oil Co (Ind.) v. United States*,²⁶ where the Supreme Court approved the appointment of a special master to determine whether the patents contributed to a pool actually blocked one another.²⁷

Reverse payments would seem to be in this middle category. On the one hand, if the patent is invalid or not infringed, a reverse payment resulting in a patent-splitting agreement could lead to later entry than litigation. On the other hand, if the patent is valid and infringed, such a settlement could not be anticompetitive because the patent holder could have blocked the infringer from the market entirely. Indeed, the split would be procompetitive if it permitted the infringer to get in the market before the end of the patent term. According to Professor Hovenkamp: “assuming a genuine dispute, the outcome of even a settlement agreement producing a per se antitrust violation might be no more anticompetitive than the outcome of litigation. A judgment establishing the validity of a rival’s claim might [leave the rival] with a monopoly.”²⁸

IV. A SEARCH FOR SHORT CUTS

The problem of course is that the middle cases are hard because the court must evaluate the merits of the patent litigation. Hence, courts and commentators have searched for short cuts that would relieve them of this obligation. As noted above, some cases have simply declared reverse payments per se illegal. Other courts have virtually declared such arrangements per se legal. A good example of the latter approach is in *Valley Drug Co. v. Geneva Pharmaceuticals Inc.*²⁹ In that matter, the patent was declared invalid some time after the patent holder and generic resolved an infringement action through a settlement accompanied by a reverse payment. Antitrust plaintiffs argued that holder of an invalid patent has no right to exclude, and that any settlement agreement that

²⁵ Hovenkamp et al., *supra* note 2, 1727–28.

²⁶ 283 U.S. 163 180–81 (1931).

²⁷ Hovenkamp et al., *supra* note 2, at 1735.

²⁸ HOVENKAMP, *supra* note 21, ¶ 2046, at 262–63 (“Settlements Resolving Intellectual Property Disputes”).

²⁹ 344 F.3d 1294.

in fact did exclude had no protection from the antitrust laws. The *Valley Drug* court, rejecting this logic, concluded that the settlement agreement excluding the alleged infringer was no broader than the *potential* exclusionary effects of the patent.³⁰ The court held that it must judge the reasonableness of the agreement under the antitrust law at the time the parties entered into the agreement.³¹ To do otherwise would tend to discourage settlements, except if the patent holder was certain to win at trial.³²

Asahi Glass Co. v. Pentech Pharmaceutical Inc., authored by Judge Posner sitting as a district court judge, offers an analysis similar to *Valley Drug*.³³ Judge Posner argued that there is something wrong if, as the result of a settlement of a patent suit, the settling parties are hauled over the hot coals of antitrust litigation.³⁴ Aiming specifically at challenges to reverse payment settlements, Judge Posner contended, “whether it is sound theory may be doubted, since if settlement negotiations fell through and the patentee went on to win his suit, competition would be prevented to the same extent.”³⁵ Much like the *Valley Drug* court, Judge Posner worried about the effect of condemning reverse payment settlements on incentives to settle, because it would reduce “the challenger’s settlement options should he be sued for infringement, and might be thought anticompetitive.”³⁶

While Judge Posner and the *Valley Drug* court were specifically concerned about chilling patent holders’ rights, they were also concerned about the effects on the court system if such agreements could be easily challenged. Settlements serve the public by conserving judicial resources. They allow parties to conserve their own resources. They remove uncertainty and eliminate risk, lower capital costs and increase investment in the economy. As two antitrust commentators have observed: “Too great a willingness to find antitrust violations in settlement arrangements would significantly inhibit settlements of many types of cases at real cost to the administration of justice, with little likelihood of any countervailing benefit to the public interest.”³⁷

³⁰ 344 F.3d at 1305.

³¹ *Id.* at 1306.

³² *Id.* at 1308.

³³ 289 F. Supp. 2d 986 (N.D. Ill. 2003).

³⁴ *Id.* at 992.

³⁵ *Id.* at 994.

³⁶ *Id.*

³⁷ Harry M. Reasoner & Scott J. Atlas, *The Settlement of Litigation as a Ground for Antitrust Liability*, 50 ANTITRUST L.J. 115, 126 (1981). See also *In re Air Crash Disaster*, 86 F.3d 498,

Those critical of reverse payments would condemn them per se or employ a truncated analysis.³⁸ Under the short-cut analysis, it is unnecessary to determine whether the supposed patent holder has a patent that blocks the alleged infringer's entry into the market. Instead, the reverse payment alone compels the conclusion that the settlement is anticompetitive (assuming the market involved is conducive to an exercise of market power). The most complete rationale for this form of analysis can be found in the testimony of Timothy Bresnahan in the *Schering-Plough* litigation before the FTC.³⁹ Professor Bresnahan was concerned that a settlement with a reverse payment would result in the diminution of "uncertain competition." We may not know whether the alleged infringer will be able to enter the market. So its entry is uncertain. But, according to Bresnahan, such uncertain entry is valuable to the consumer.⁴⁰ A payment that reduces the expected value of that uncertain entry would be anticompetitive.

Formally, the analysis begins with an assessment of the patent holder's "reservation date" for entry in the settlement negotiations—the earliest date at which the incumbent would be willing to allow the generic to enter the market rather than litigate. The uncertain competition model assumes that the reservation date is the mean probable date that the generic would enter in the event of litigation. At least this is true for versions of this model that make various simplifying assumptions, such as that litigants are risk neutral, that they share the same discount rate ("time-value of money"), and that they correctly form expectations about the probable results of the litigation.

If the parties settle using only the dimension of time of entry, the model assumes they will split the patent life in a way that reflects the mean probable date of entry under litigation (with some leeway for direct litigation costs). In such a compromise, there is no diminution of uncertain competition. At the time of settlement, no one knows what the outcome of the patent litigation will be, so the extent of competition we would actually get through litigation is uncertain. But if the parties'

552 (6th Cir. 1996) (court must be "mindful of the chilling effect on settlements" if a nonparty attack prevailed).

³⁸ See *In re Cardizem Antitrust Litig.*, 105 F. Supp. 2d at 705–06 Hovenkamp et al., *supra* note 2, at 1762; Shapiro, *supra* note 2, at 407–08; Bulow, *supra* note 2; Leffler & Leffler, *supra* note 2.

³⁹ Schering-Plough Corp., FTC Docket No. 9297, Transcript at 513–25 (Jan. 25, 2002). The Commission decision did not adopt this uncertain competition model, stating instead that the settlements were anticompetitive and illegal because without a reverse payment the parties would have arrived at another settlement that would have been a better settlements from the consumer perspective. Slip op. at 27.

⁴⁰ *Schering-Plough Corp.*, Transcript at 513.

expectations reflect the outcome on average, the settlement without money would not diminish competition on average.

If the parties can also make monetary payments, additional settlement arrangements become possible under the model. For example, if the patent holder pays the generic to settle, the alleged infringer would be expected to enter the market later than the date predicted by the mean probable entry date following litigation. Consumers, if they could vote, would vote for the settlement *without* a payment because it would avoid direct litigation costs and, on average, the consumers will be doing as well as they would do if the parties litigated. (This assumes of course that on average litigating parties accurately predict the outcome of litigation, a subject that receives more attention below.) Consumers would vote against the settlement *with* a reverse payment, as the settlement would not provide them as much competition on average as litigation.

There are several approaches similar in spirit to the uncertain competition model described above. For example, under the rule developed by Carl Shapiro, “the proposed settlement [must] generate at least as much surplus for consumers as they would have enjoyed had the settlement not been reached and the dispute instead [were] resolved through litigation.”⁴¹

Consider the application of the plain vanilla uncertain competition model, using the simplified case where the parties both correctly predict and agree on the chances that each would prevail. This makes settlement possible, as the settlement avoids litigation costs. They both believe that the patent holder has a 70 percent chance of prevailing. Without a payment, the litigants would settle with a 70–30 split (ignoring the time value of money, as is the convention in this article). That is, the patent holder maintains its monopoly for 70 percent of the remaining patent life and the alleged infringer may compete with the patent holder during the last 30 percent of the patent life. With a payment, the patent holder may be able to obtain 90 percent of the patent life in a 90–10 split.

Consider how this reverse payment might play out in the antitrust suit that follows the patent suit. The court does not know the parties’ assessment of the merits. It may be difficult to investigate these assessments, since they are inherently matters of judgment and the attorney-client privilege may protect relevant evidence. The court requires the

⁴¹ Shapiro, *supra* note 2, at 393. Because, when the parties are risk neutral, the earliest date the patentee is willing to offer the entrant *and* the latest date the entrant is willing to accept is the expected mean date under litigation, Shapiro’s standard of comparison for the settlement is the expected litigation result. Setting aside litigation cost savings, there is only one possible settlement when the settlement involves only time of entry.

parties to litigate the merits of the patent suit in the antitrust litigation. The court finds, under the conventional standard of proof in civil litigation, that it is *more likely than not* that the patent holder would have prevailed in the patent suit.⁴² After all, a 70 percent chance of prevailing meets the preponderance of the evidence standard. Thus, the court concludes that it is likely that the patent holder would have been able to exclude the infringer for the life of the patent. The patent split is therefore legal. Indeed, if your frame of reference is the outcome of civil litigation, the agreement is procompetitive, because the alleged infringer enters the market 10 percent sooner because of the settlement.

The uncertain competition model, Carl Shapiro's analysis, and approaches of other critics of reverse payments all reject this analysis. Shapiro argues that a patent is best viewed as a probabilistic property right. The "patent does not give the patentee 'the right to exclude' but rather the more limited 'right to try to exclude' by asserting the patent in court."⁴³ Therefore, the patent holder is not entitled to negotiate the monopoly outcome, simply because the patent holder *asserts* that its patent is valid and infringed by a particular rival. Rather, the patent holder's rights are calibrated according to the likelihood that the patent holder would win the patent litigation. . . ." In our example, Shapiro's calibration would give the patent holder 70 percent of the patent life and no more.⁴⁴

Under this model, Shapiro (with some substantial caveats we will discuss later) and Hovenkamp, Janis, and Lemley (with no caveats) would condemn the reverse payment without addressing the patent merits because, in Shapiro's words, the patent holder obtained more than its probabilistic patent rights. In the terminology employed in this article,

⁴² In a patent litigation, the burden of proving infringement by a preponderance of the evidence is on the patent holder. *See* *Lemelson v. United States*, 752 F.2d 1538, 1547 (Fed. Cir. 1985). The patent owner must show that every limitation of the patent claim asserted is found in the accused process or product, either literally or under the doctrine of equivalents. *Tanabe Seiyaku Co. v. United States ITC*, 109 F.3d 726, 731 (Fed. Cir. 1997). If the issue in the litigation is validity, the court gives weight to the patents assumed validity under 35 U.S.C. § 282. The accused infringer must show by clear and convincing evidence that the patent is invalid. *Geneva Pharms., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1377 (Fed. Cir. 2003) (affirming grant of summary judgment declaring patents invalid for double patenting in a generic drug case).

⁴³ Shapiro, *supra* note 2, at 395. The "uncertain rights" or "bundle of rights" approach is clearly not limited to intellectual property but could be applied to any property. For example, a homeowner does not have the right to exclude a squatter from taking up residence in the "alleged" homeowner's living room, merely the "right to try to exclude" the squatter by going to court and proving that the homeowner's title is not defective.

⁴⁴ Of course, Shapiro is not saying that he knows that the patent holder would obtain 70%. Shapiro is only saying that he believes that the patent holder obtained a better settlement than is justified by its view of the merits.

there has been a diminution of uncertain competition. Two important issues addressed by this article are whether this shortcut is workable and whether it is consistent with the patent holder's right to exclude.

V. HOW WIDESPREAD ARE REVERSE PAYMENTS?

Before addressing the workability of the uncertain competition analysis, it is worth considering the extent of so-called "reverse payments" in patent litigation. The intense scrutiny of recent patent settlements has been sparked by the unique posture of patent litigation under Hatch-Waxman. But is it only Hatch-Waxman that gives companies anticompetitive incentives to make reverse payments? Are other settlements free from problems under the uncertain competition analysis?

In *In re Ciprofloxacin Hydrochloride Antitrust Litigation (Cipro)*,⁴⁵ the court explained that in the Hatch-Waxman context, the alleged infringer generally has not entered the market. In the more traditional context, the infringer has entered and, if found to infringe, might have to pay substantial damages. In the example provided by the *Cipro* court, the patent holder can prove damages of \$100 million if it prevails on liability. The parties settle before trial with a \$40 million settlement to the patent holder and with the infringer agreeing to exit the market for the life of the patent. According to the court, this amounts to an implicit net payment to the infringer of \$60 million to stay off the market. The court concludes:

In reality, what has occurred is the alleged infringer is permitted to keep a portion of the profits from its sales. Under plaintiffs' analysis, a settlement such as this, where the patent holder forgoes collecting all damages due, would be a *per se* violation. Such a rule would discourage any rational party from settling a patent case because it would be an invitation to antitrust litigation.⁴⁶

Consider the following example, which exploits the insight of the *Cipro* court. An alleged infringer has been in the market for four years. There are six years remaining on the patent at issue. The patent generated substantial market power for the patent holder. The patent holder estimates that it has lost \$400 million in profits since the alleged infringer has entered; the alleged infringer has made \$80 million (as competition between the patent holder and the alleged infringer has drastically

⁴⁵ 261 F. Supp. 2d 188 (E.D.N.Y. 2003).

⁴⁶ *Id.* at 252. See also *Valley Drug Co.*, 344 F. 3d at 1309; David A. Crane, *Exit Payments in Settlement of Patent Infringement Lawsuits: Antitrust Rules and Economic Implications*, 54 FLA. L. REV. 747, 775-76 (2002). For an example of such a settlement, see *Refrigerating Co. v. Kold-Hold Mfg. Co.*, 185 F.2d 809, 812 (6th Cir. 1950).

reduced royalties). The patent holder stands to lose another \$600 million if the alleged infringer prevails in the lawsuit and can remain in the market. If the alleged infringer prevails in the lawsuit, it projects it will make an additional \$120 million. As trial nears, opinions about the outcome have converged: both parties believe that the patent holder has a 51 percent chance of prevailing.

Taking stock of its situation, the alleged infringer realizes that with a 51 percent chance of losing, its expected loss in terms of damages is \$204 million ($.51 * \400 million). Because it has a 49 percent chance of winning and staying in the market, its expected profits from continued litigation of its allegedly infringing technology is \$58.8 million ($.49 * \120 million). Thus, its total expectation from continued litigation is a loss of \$145.2 million. The patent holder's expected gain in terms of damages is again \$204 million. The patent holder's expected market gain is \$306 million ($.51 * \600 million). The patent holder's total expectation from litigating to conclusion is \$510 million.

Given the expected loss of over \$145 million, the alleged infringer really wants out and certainly wants to avoid paying the full measure of damages. Indeed, the expected level of damages might result in the alleged infringer's bankruptcy. It thus offers to settle without paying any damages. It agrees, however, to exit the market and not to return for the life of the patent. The patent holder immediately accepts this compromise, increasing its expected gain from \$510 million to \$600 million. In our example, there has been an implicit reverse payment from the patent holder to alleged infringer of \$204 million—the damages incurred by the patent holder discounted by the probability that that the infringer will lose the patent litigation.

While this settlement is a win-win proposition for the litigants, it clearly violates the uncertain competition standard. No money changed hands but consumers lost a 49 percent chance of competition over the next six years. Presumably, advocates of the uncertain competition standard would insist that the alleged infringer continue to litigate even if the expected result of continued litigation is its bankruptcy.

We can now see how the uncertain competition standard would change the nature of settlements, not only settlements with explicit net consideration. Any settlement where the alleged infringer agreed to compromise on its ability to use the allegedly infringing technology would be suspect.⁴⁷

⁴⁷ According to Kevin McDonald: "All patent settlements preclude a judicial resolution by definition, and all settlements therefore cause the consumer harm. . . ." Kevin McDonald, *Hatch-Waxman Patent Settlements and Antitrust: On "Probabilistic" Patent Rights and False Positives*, ANTITRUST, Spring 2003, at 68, 72.

The difference between monopoly profits (one firm exploiting a patent that has no substitutes) and competitive profits (two firms exploit the same technology) drives this result. The alleged infringer can obtain only competitive profits if it wins but will pay damages based on the patent holder's monopoly profits if it loses. Under many conditions, the alleged infringer is willing to give up on its potential competitive profits in order to avoid the risk of much higher damages even if it believes it will prevail in the patent suit. The patent holder is willing to give up on some or all of the damages because it can even make more if the alleged infringer exits the market. Under the circumstances, the alleged infringer has a means of escaping cataclysmic damage awards by enhancing the patent holder's expectations of monopoly profits.

The economic incentives facing the patent holder and the alleged infringer encourage a settlement that is worse for consumers than continued litigation, at least that would seem to be the case under the simple uncertain competition theory. If the incentives in patent litigation are generally as described above, virtually all traditional patent settlements are anticompetitive under the theory. There is a hidden "reverse payment" running from the patent holder to the infringer. Consumers suffer the consequences.⁴⁸

Indeed, it is possible that patent-splitting arrangements in the Hatch-Waxman context are less harmful than more conventional patent settlements because antitrust constraints are much more likely to prevent anticompetitive settlements. In the traditional patent-splitting agreement, there is no red flag to show that the patent holder is giving up on expected damages to obtain a split that is better than the mean outcome of litigation. Ninety-five percent of patent lawsuits are settled before a court judgment.⁴⁹ On the other hand, in the Hatch-Waxman context, it is much harder to hide a naked reverse payment, as most Hatch-Waxman litigants now know (if they didn't before) in light of the Federal Trade Commission challenges.

⁴⁸ Of course, there are some cases where there were explicit reverse payments outside of the Hatch-Waxman context. *See, e.g.,* *MGM, Inc. v. 007 Safety Prods., Inc.*, 183 F.3d 10 (1st Cir. 1999) (enforcing intellectual property settlement of claim for injunctive relief with payment to infringer); *In Time Prods., Ltd. v. Toy Biz, Inc.*, 38 F.3d 660 (2d Cir. 1994) (enforcing intellectual property settlement with payment to infringer of declaratory judgment action).

⁴⁹ Lanjouw & Schankerman *Enforcing Intellectual Property Rights: Suits, Settlements and the Explosion in Patent Litigation* (Mimeo, Department of Economics, Yale Univ., June 2002), *cited in* Shapiro, *supra* note 2, at 392. *See also* Federal Judicial Caseload Statistics, U.S. District Courts-Civil, Table C-4, Civil Cases Terminated, by Nature of Suit and Action Taken, During the 12-Month Period Ending March 31, 2002, *available at* <http://www.uscourts.gov/caseload2002/contents.html>; Guari Prakash-Canjels, *Trends in Patent Cases*, 41 IDEA 283, 290-91 (2001).

The uncertain competition standard cuts off this escape and surely enhances uncertain competition in the particular case where the alleged infringer is forced to litigate to its expected demise. On the other hand, potential generic entrants will learn quickly. If courts started condemning traditional settlements under the uncertain competition standard, there would likely be far fewer settlements of patent litigations.⁵⁰ The litigants would know that settling the patent litigation would lead to antitrust litigation. Better to continue litigating the patent suit. As Judge Posner observes, “*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. If any settlement agreement is thus to be classified as involving a forbidden ‘reverse payment,’ we shall have no more patent settlements.”⁵¹

Even worse, recognizing that they cannot escape litigation by compromising their participation in the market, firms may be quite reluctant to exploit technologies covered by even the most questionable patents in the first instance. This is simply another example of William Baumol’s observation that “barriers to exit” often translate into “barriers to entry.”

VI. UNCERTAIN COMPETITION AND THE STANDARD OF PROOF

A. UNCERTAIN COMPETITION VERSUS THE TRADITIONAL BURDEN OF PROOF

Uncertain competition analysis is a substantial departure from the traditional civil burdens of proof. Instead of the standard more-likely-than-not analysis, we must calibrate rights based on the probabilistic strength of the patent litigation. The ramifications of this calibration are far reaching. In the world of civil litigation, outcomes are usually binary, either you are liable for breaching the contract or you are not. If the jury concludes it is 60 percent likely that the defendant trespassed, the defendant would generally have to pay all of the damages for the trespass; if it is 30 percent likely, the defendant pays nothing.⁵²

⁵⁰ But see *infra* Part X, for a means of continuing to settle even if the courts adopted the uncertain competition standard.

⁵¹ *Asahi Glass Co.*, 289 F. Supp. 2d at 994.

⁵² For a discussion of the incompatibility between probabilistic rights and traditional standards of proof, see McDonald, *supra* note 47, at 72. See also *Gideon v. Johns-Manville Sales Corp.*, 761 F.2d 1129, 1137 (5th Cir. 1985 (“[p]ossibility alone cannot serve as the basis for recovery.”); *Youst v. Longo*, 729 P.2d 728, 741 (Cal. 1987).

There are a few lower court decisions in the area of mass torts where the possibilities were sufficient to award damages. In these cases, the courts simply allocated the damages among the defendants, although it could not be determined which defendant was the cause of harm to individual plaintiffs. See *Sindell v. Abbott Labs.*, 607 P.2d 924 (Cal. 1980);

Given the economic foundations of the antitrust laws, one might argue, however, that antitrust decisions and awards could be based on probabilities rather than the prevailing civil standards of proof. This, however, has not been the path antitrust tribunals have taken, applying instead traditional burdens of proof.⁵³ Consider, first, a merger subject to Section 7 of the Clayton Act. The parties to the merger freely concede that the merger has no efficiency benefits. The merging parties are not direct competitors. There is, however, a 10 percent chance that the acquirer will enter the acquired party's market in the next few years. Under the uncertain competition standard, the merger should surely be condemned—there is a 10 percent diminution of uncertain competition.⁵⁴ Of course, antitrust tribunals using the potential competition doctrine and traditional civil standards would not condemn this merger.⁵⁵

More to the point, suppose everyone believed that patent holder had a 60 percent chance of winning the patent litigation. Suppose the patent holder settled the litigation by making a reverse payment and taking 100 percent of the patent life. Now assume instead of settling in this fashion, the patent holder acquires the alleged infringer. Under the traditional civil standard, the alleged infringer is only 40 percent likely to enter the market, so it is not a potential entrant under antitrust precedent.⁵⁶ The merger should not be problematic.⁵⁷ Therefore, if we see the uncertain competition standard applied to reverse payments but not mergers, we will probably see patent litigations settled via acquisition rather than reverse payment.

The Intellectual Property Guidelines of the Department of Justice and the Federal Trade Commission also use conventional analysis rather than uncertain competition analysis in assessing potential competition claims. The Guidelines tell us that firms are horizontal competitors only when they “would have been *actual* or *likely* potential competitors in a relevant market in the absence of a license.”⁵⁸ The Guidelines define a firm as

Morton v. Abbott Labs., 538 F. Supp. 593 (M.D. Fla. 1982); Starling v. Seaboard Coast Line, 533 F. Supp. 183 (S.D. Ga. 1982).

⁵³ See McDonald, *supra* note 47, at 72, (citing Associated Gen. Contractors v. Cal. State Council of Carpenters, 459 U.S. 519, 534 n.30 (1983)).

⁵⁴ Carl Shapiro would condemn this acquisition for the very reasons set out herein. Shapiro, *supra* note 2, at 402–07.

⁵⁵ FTC v. Atlantic Richfield Co., 549 F.2d 289, 294–95 (4th Cir. 1977) (requiring “clear proof” that the acquiring firm would have entered the market); Tenneco, Inc. v. FTC, 689 F.2d 346, 352 (2d Cir. 1982) (requiring evidence that the acquiring firm “would likely” have entered the market).

⁵⁶ *Id.* See also *infra* notes 58–61 and accompanying text.

⁵⁷ See cases cited *supra* note 55.

⁵⁸ Intellectual Property Guidelines § 3.3 (emphasis added).

a “likely potential competitor if entry by that firm is *reasonably probable* in the absence of the licensing arrangement.”⁵⁹ Under the Guidelines, where it is likely that a patent excludes a firm’s entry, it is simply *not* a potential competitor.⁶⁰ The Collaboration Guidelines take the same approach.⁶¹

This approach is most clearly set out in Example 5 of the Intellectual Property Guidelines. There, AgCo, a manufacturer of farm equipment, develops a new patented technology and licenses it to FarmCo, another farm equipment manufacturer. Under Example 5, it is likely that any improved emissions control technology that FarmCo could develop would infringe AgCo’s patent. The Guidelines conclude:

FarmCo is not a likely potential competitor of AgCo in the relevant market because, even if FarmCo could develop an improved emission control technology, *it is likely* that it would infringe AgCo’s patent. This means that the relationship between AgCo and FarmCo with regard to the supply and use of emissions control technology is vertical.⁶²

Note that the Guidelines do not speculate about the percentage chance that FarmCo could develop a noninfringing competing technology. Instead, they simply conclude that the relationship is not horizontal because such an outcome is unlikely.

The fullest application of the conventional standard of proof is set out in Example 10 of the Guidelines. There, two manufacturers of a consumer electronic product hold patents that cover alternative circuit designs but neither can use their patents without infringing a patent of the other firm. The manufacturers pool their patents. The Guidelines conclude that the evaluating agency would be unlikely to challenge this arrangement because there is no adverse effect on competition. “Because the manufacturers’ patents are blocking, the manufacturers are not in a horizontal relationship with respect to those patents.”

If the two manufacturers believe there is a 90 percent chance that litigation would lead to a finding the patents are blocking, courts very likely would eventually find the patents are blocking, unless the manufacturers are way off base in their belief. Neither manufacturer is willing to use its patent unilaterally. Instead, the parties pool their patents,

⁵⁹ *Id.* n.14 (emphasis added).

⁶⁰ *See id.* § 5.5.

⁶¹ Federal Trade Comm’n & U.S. Dep’t of Justice, Antitrust Guidelines for Collaboration Among Competitors n.6 (2000). *See also* Analysis to Aid Public Comment, *In re Abbott Labs. and Geneva Pharms.* at 3–4 (“[a] firm is a potential competitor if there is evidence that entry by that firm is reasonably probable in the absence of the agreement at issue.”).

⁶² Intellectual Property Guidelines, example 5 (emphasis added).

allowing both of them, and others through a licensing program, to exploit the patents. Arguably, this is an excellent result. Under uncertain competition analysis, however, the pooling arrangement led to a 10 percent diminution of uncertain competition and should be judged anticompetitive.

Shapiro's analysis of the patent pool applies the uncertain competition model in a slightly more nuanced way. He recognizes, as the Guidelines do, that it is better to have a patent pool in this case than not to have one. He also recognizes that under his probabilistic analysis that consumer surplus would diminish if the pool charged the monopoly license fee. Hence, Shapiro would require the pool members to calibrate their license fee to the odds that the patents are actually blocking.⁶³ He would presumably require the courts to determine if the licensing fees satisfy the calibration, a task that courts are likely to find extremely unappealing.

Considering the problems set out above, one would imagine that proponents of uncertain competition analysis would offer limiting principles for the analysis. But neither have they offered any, nor does there appear to be any, discernible basis for creating such limits. It is not clear how any advocate of the theory could do other than condemn the acquisition of a firm that is only 10 percent likely to enter the market. It is equally unclear how advocates of the analysis could do anything but condemn the pooling arrangement discussed above or, as Shapiro suggests, calibrate the pooled royalty to the patent merits.

It should now also be apparent that uncertain competition does not generally offer a way around an assessment of the merits of the patent litigation. Uncertain competition analysis permits shortcuts in selected cases where an explicit reverse payment provides a red flag. Shortcuts are not available, however, in those cases without such a red flag, such as in pooling arrangements or settlements that were accomplished through the release of damages. In such cases, uncertain competition analysis would mire the courts in more complexity than they confront now, forcing the courts not only to reach the merits but also to calibrate the merits to specific probabilities.

B. PERCEPTIONS VERSUS MERITS ANALYSIS

A related rationale for condemning reverse payments is that addressing the merits requires an after-the-fact analysis of the strength of the patent, while a reverse payment is a much simpler indicator of an anticompetitive

⁶³ Shapiro, *supra* note 2, at 408–10.

intent.⁶⁴ Further to this theory, the patent law provides no right to exclude, only a right to invoke the state's power to exclude.⁶⁵ To be sure, under this analysis, if the patent holder prevails in the litigation, it could exclude the infringer for 100 percent of the remaining patent life. The exclusion would be 100 percent even if the jury concluded it was only 70 percent likely that the infringer infringed. But because the parties did not litigate to conclusion, they do not get to take advantage of the right to exclude. Because the patent holder has no right to exclude, only a right to invoke the state's power, any standard that maximizes short-run consumer welfare, including the uncertain competition standard, should satisfy the antitrust laws.

Consider how focusing on perceptions and ignoring after-the-fact analysis plays out in other contexts. For example, most courts have held that the patent law immunizes refusals to license a patent⁶⁶ or protects certain refusals to deal in patented products.⁶⁷ If we eschew after-the-fact analysis, the patent holder might have to license a patent that amounts to an essential facility, unless, of course, it had already litigated and established that the potential license was in fact infringing the patent. Suppose the patent holder is 90 percent certain that a patent embodied in a product is valid (meaning that the patent holder perceives it would prevail in patent litigation nine out of ten times). This means that a failure to sell that product diminishes uncertain competition by 10 percent. A logical extension of Shapiro's analysis—albeit an extension that Shapiro has not offered—is that the patent holder must sell its product at 90 percent of the monopoly charge (ignoring the possibility that consumer surplus may not be linear in price). The patent holder could only charge the monopoly price if it had previously litigated and established it had valid patents covering the product at issue. Hovenkamp, Janis, and Lemley might go further, arguing that the failure to sell is unlawful. This follows from the trio's reasoning for banning 100-0 patent splits accompanied by reverse payments. According to the authors, the fact that the patent holder is willing to make a payment to settle indicates "some inherent uncertainty as to the validity of scope of the patent." This uncertainty means that the payment is excluding at least some firms that would have a right to compete.⁶⁸ Similarly, in cases where the patent holder is 90

⁶⁴ See *supra* note 9 and accompanying text.

⁶⁵ See *supra* note 43 and accompanying text.

⁶⁶ See cases cited in ABA SECTION OF ANTITRUST LAW, ANTITRUST LAW DEVELOPMENTS 1076–77 nn.307, 311–12 (5th ed. 2002).

⁶⁷ See, e.g., *In re Indep. Serv. Org. Antitrust Litig.*, 203 F.3d 1322 (Fed. Cir. 2000); *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346 (Fed. Cir. 1999); *Image Tech. Servs. Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1215–18 (9th Cir. 1997).

⁶⁸ Hovenkamp et al., *supra* note 2, at 1758.

percent certain of the validity of its patent, it means that there are some occasions (10 percent of occasions) where the refusal to deal is excluding firms that would have a right to compete. The patent holder could only refuse to deal if it had previously litigated. But what does before-the-fact litigation have to do with the consumer welfare impact of the practice? Why wouldn't after-the-fact litigation have the same consumer welfare effects as before-the-fact litigation?

The court of appeals in *Valley Drug* also eschews after-the-fact analysis but does not then substitute an analysis of contemporary perceptions. The *Valley Drug* court reasoned that after-the-fact analysis of a settlement reasonably within the scope of the patent would undermine patent incentives. "Patent litigation is too complex and the results too uncertain for parties to accurately forecast whether enforcing the exclusionary right through settlement will expose them to treble damages if the patent immunity were destroyed by the mere invalidity of the patent."⁶⁹ To implement its own before-the-fact analysis, the court implies that a settlement arguably within the scope of the patent is legal except in those instances the parties knew the patent was invalid or knew the patent was infringed.⁷⁰ Judge Posner implies much the same thing.⁷¹

C. THE PROBLEM OF THE TRADITIONAL STANDARD OF PROOF

We have shown how the uncertain competition analysis is difficult to reconcile with standard analyses under the antitrust laws, or the common law for that matter. However, the traditional standard of proof poses its own substantial problems in the antitrust assessment of patent settlements. Consider a case where the patent holder believes it has only a 40 percent chance of prevailing. Being risk averse, it settles the case without net consideration by accepting 30 percent of the patent life. Clearly, we have not violated the uncertain competition standard. Yet, under the traditional standard of proof, there is an argument that the patent holder has violated the antitrust laws.⁷² Because the patent holder is likely to lose the patent litigation, a court might find that it has no legal basis for excluding the alleged infringer, even an exclusion that only lasts for 30 percent of the remaining patent life. If the patent holder is forced to litigate, however, there is a 40 percent chance it will prevail and exclude the alleged infringer until the end of the patent life.

⁶⁹ *Valley Drug Co.*, 344 F. 3d at 1308.

⁷⁰ *Id.* at 1309.

⁷¹ *Asahi Glass Co.*, 289 F. Supp. 2d at 995–96.

⁷² A violation requires additional assumptions: the patent holder has market power and the suppression of entry for 30% of the patent life actually reduces total market output.

Although consumers would vote for the compromise, we cannot honor that consumer preference under the traditional standard of proof.

Of course, a settlement can violate both the traditional standard of proof and the uncertain competition standard, even if there is no explicit reverse payment. To see this, all we need do is slightly change our example in the previous section where the patent holder made a reverse payment by accepting less in damages than it expected to obtain through litigation. Assume that the patent holder has only a 40 percent chance of prevailing, rather than a 51 percent chance. Under these circumstances, the alleged infringer's expected loss in terms of damages is \$160 million ($.4 * \400 million).⁷³ Its expected profits from continued licensing of its allegedly infringing technology is \$72 million ($.6 * \120 million).⁷⁴ Its total expectation from continued litigation is a loss of \$88 million.⁷⁵ The patent holder's expected gain in terms of damages is again \$160 million. The patent holder's expected market gain is \$240 million ($.4 * \600 million). The patent holder's total expectation of litigating to conclusion is a \$400 million gain—even though it expects to lose!

Again, as the parties' expectations about the outcome of the litigation begin to converge, the alleged infringer wants to find a way out even though it expects to win; its expected value of continued litigation is still negative. Therefore, the parties would find it beneficial to adopt the same sort of settlement described earlier—they agree that no money will change hands and the alleged infringer agrees to exit the market for the life of the patent. This settlement violates the antitrust laws under the traditional civil standard of proof (assuming the other elements of an antitrust violation are established). The settling parties would also fare poorly under the uncertain-competition standard because there is a loss of uncertain competition.⁷⁶ Consumers would vote against this settlement.

How can we safeguard settlements that consumers would vote for, while not abandoning the traditional burden of proof? One method of doing so is by adopting a two-tiered analysis: judge the patent merits under the traditional burden of proof, and then create an uncertain competition defense. First, applying the traditional standard of proof, any time the antitrust plaintiff fails to establish that the alleged infringer

⁷³ The alleged infringer's expected damages are sunk, based on past conduct.

⁷⁴ The alleged infringer's expected gains are not sunk, based on future conduct.

⁷⁵ The potential lose from past, sunk conduct outweighs the expected gain from future conduct.

⁷⁶ Consumers would prefer continued litigation because they do not value the sunk expected damages but do value the expectation of future competition.

would have prevailed in the patent litigation, the court should dismiss the antitrust case against the settling parties (assuming the plaintiff has the burden on this issue). This fully honors the patent holder's right to exclude under the traditional civil standard of proof. If the plaintiff shows that the alleged infringer would have prevailed and also establishes the other things necessary to make an antitrust violation (market power, actual anticompetitive effects, etc.), it establishes a *prima facie* case against the settling parties. The burden then shifts to the defendant to show that the efficiency effects of the settlement outweigh the anticompetitive effects.⁷⁷

The uncertain competition methodology is one means of showing that the patent splitting settlement has a net social benefit. In our hypothetical, if the patent holder can show it had a 40 percent chance of prevailing, but settled for 30 percent of the patent life, it would establish its efficiency defense.⁷⁸ Of course, the courts are not capable of calibrating probabilities to the extent suggested. Hence, it ought to be sufficient for the defendant to show that the patent holder had a case of some substance—perhaps something less than “likely” but more than frivolous.

Applying this standard to traditional patent settlements might result in challenges where, as in the example above, (1) there is an implicit reverse payment in release of all or part of the patent holder's expected damages and (2) it is more likely than not that the patent is invalid or not infringed. Although settlements like the one described may be pervasive, I have found no court that has found a violation under such circumstances. This suggests that the two-tiered analysis is much more enforcement oriented than the present state of the law because a court could find a violation under such circumstances. Nevertheless, the standard is much less enforcement oriented than the pure uncertain competition standard, which would make problematic almost any settlement where the alleged infringer has entered the market and then compromises its market position.

This two-tiered analysis is of course quite complex and suffers from several of the deficiencies discussed in this article, particularly the need for calibration. With some justification, some may therefore prefer the

⁷⁷ Intellectual Property Guidelines § 4.2.

⁷⁸ For all the reasons set out in this article, I have not proposed a symmetrical evaluation. That is, if it is established that the antitrust defendant has a valid and infringed patent, I do not propose shifting the burden to the plaintiff of showing that the settlement is anticompetitive under the uncertain competition theory. Such an analysis, would not honor the traditional standard of proof, would not honor the patent holder's right to exclude, would abandon the approach in the Intellectual Property Guidelines, would require a complete rethinking of civil standards of proof, and would enmesh the courts

Valley Drug and *Asahi* rule of virtual per se legality. And, as we will see when we address the economics of patent splitting, the uncertain competition standard is mired in yet another layer of complexity.

D. COURT APPROVAL

One way litigants might avoid the uncertainty attendant to any settlement is to seek court approval of the settlement. The *Noerr-Pennington* doctrine should protect the parties entering into a court ordered settlement.⁷⁹ The *Noerr* doctrine shields parties attempting to influence officials regardless of their intent.⁸⁰ This includes attempts to influence the judiciary.⁸¹ There are exceptions to the immunity, most notably where the petition effort is a sham: an attempt to obtain an anticompetitive effect through the use of the process rather than the outcome of the process.⁸² Further, unethical and deceptive practices in the judicial process might strip litigants of their antitrust immunity.⁸³ Accordingly, and assuming the patent litigation is not a sham, litigants obtaining court approval of their settlement ought to be within the immunity afforded by *Noerr*.⁸⁴ Of course, this begs the question of the standard the court should use to approve the settlement. But whatever the standard, it should be sufficient when an antitrust plaintiff attempts to challenge the settlement.

VII. THE ECONOMICS OF PATENT-SPLITTING SETTLEMENTS

Using the *Cipro* insight, this article illustrated the pervasiveness of the antitrust problem in patent settlements. The problem arises if the settlement satisfies two conditions. First, the alleged infringer compro-

in very difficult calibrations of the strength of the patent in cases where it could otherwise be avoided.

⁷⁹ See *infra* note 84.

⁸⁰ *United Mine Workers v. Pennington*, 381 U.S. 657, 670 (1965). See also *Eastern R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961).

⁸¹ *California Motor Transp. Co. v. Trucking Unlimited*, 404 U.S. 508, 510–11 (1972).

⁸² *Noerr*, 365 U.S. at 144.

⁸³ *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 499–500 (1988). See also *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 178 (1965).

⁸⁴ In Mark L. Kovner, Colin R. Kass & Avery W. Gardiner, *Applying the Noerr Doctrine to Pharmaceutical Patent Litigation Settlements*, 71 ANTITRUST L.J. 609, 622 & n.42 (2003), the authors argue that the *Noerr* doctrine protects settlements even if they are not court approved (citing *Columbia Pictures Indus., Inc. v. Professional Real Estate Investors, Inc.*, 944 F.2d 1525, 1528 (9th Cir. 1991), *aff'd on other grounds*, 508 U.S. 49 (1993)), and several other cases. See also *MedImmune, Inc. v. Genentech, Inc.*, 2003 U.S. Dist. LEXIS 23443, at *15 (C.D. Cal. Dec. 24, 2003) (dismissing antitrust challenge to patent settlement approved by a court because the “restraint . . . is the result of a valid governmental action . . .”).

mises its market position. This may result in a split of the patent life, or in allocating fields of use, or in the alleged infringer exiting the market entirely. Second, there is a net payment either explicit, as is possible in the Hatch-Waxman context, or implicit, as may be the case where the alleged infringer avoids all or part of the potential damage award.

Contrary to the conclusions of the simple uncertain competition model, such explicit or implicit reverse payments are not necessarily anticompetitive. First, there are conditions under which an explicit or implicit “reverse” payment is necessary to settle patent litigation. There may be a gap between the parties that prevents settlement. This gap may be the result of a difference in perceptions about the outcome of the litigation or a difference in risk preferences. Sometimes a reverse payment can close the gap when it is impossible to close the gap by splitting time because the time has a different value to each party while the money has the same value.

Second, the reverse payment that settled the litigation may result in entry before the probable date of entry under the litigation.⁸⁵ Such a settlement can lead to early entry when the patent holder is risk averse and willing to accept less than it expects to obtain in litigation in order to settle. Or, the patent holder’s perceptions about the outcome of litigation could simply be wrong. Under the circumstances, settling with reverse payments may be procompetitive.

As mentioned earlier, the analysis begins with the “reservation date,” the earliest date at which the incumbent would be willing to allow the generic to enter the market rather than litigate.⁸⁶ The incumbent will not agree to a settlement providing for entry before that date. The simple uncertain competition model assumes, erroneously, that the reservation date is always the mean probable date of entry under litigation.

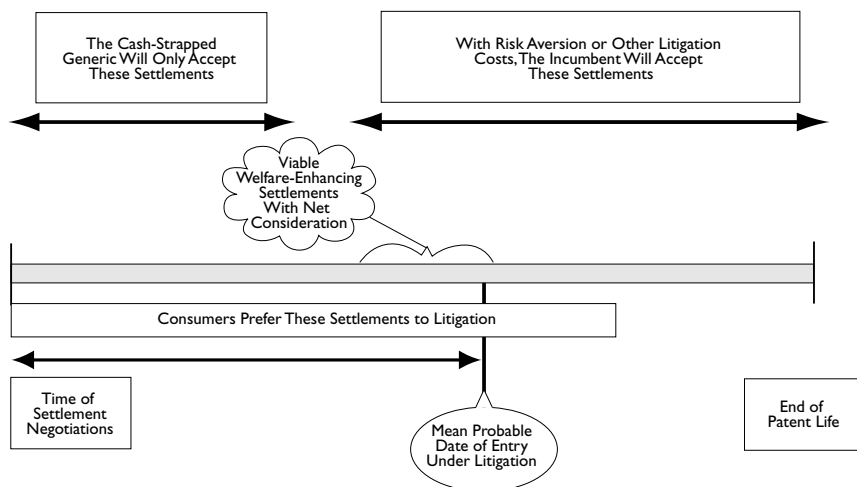
The diagram below (Cash-Strapped Generic) illustrates the more formal analysis developed by Robert Willig and John Bigelow.⁸⁷ Willig and Bigelow show that a patent holder’s or incumbent’s reservation date may be earlier than the mean probable date of entry under litigation. The illustration contains a time line that begins at the time that the settlement negotiations are taking place and terminates at the end of the economic

⁸⁵ For the full analytics supporting this section, see Robert Willig & John Bigelow, *Antitrust Policy Towards Agreements that Settle Patent Litigation*, ANTITRUST BULL. (forthcoming 2004).

⁸⁶ A reservation date is the line in the sand beyond which the incumbent will not compromise on time. The line in the sand is the product of the incumbent’s assessment of the litigation, its risk preference, and other conditions. The alleged infringer cannot obtain more time from the incumbent (unless conditions change).

⁸⁷ Willig & Bigelow, *supra* note 85.

Cash-Strapped Generic



life of the patent. The line crossing the time line indicates the mean probable date of entry if the parties litigated. An arrow below the time line indicates the settlements that consumers would prefer to litigation. They prefer all the settlements that result in entry earlier than and up to the mean probable date of entry under litigation. The arrow above the time line and to the right shows the settlements that the incumbent prefers to litigation (the “incumbent’s arrow”). An arrow above the time line and to the left shows the settlements that the generic prefers to litigation.

As discussed further below, in this particular example, the incumbent is risk averse and is willing to reach a settlement that is worse than the expected value of litigation. In other words, the incumbent’s reservation date is earlier than the mean probable entry date under litigation. This means that it is willing to settle for an entry date early than the expected date of entry under litigation. This is indicated by the squiggly bracket just above the time line. The alleged infringer or generic is cash strapped, however, and insists on a settlement that is better than the expected value of litigation. There is a gap in the litigants’ reservation dates—the arrows do not meet. So there can be no compromise available when the only negotiating dimension is time. Shapiro has in fact modeled the difficulty of obtaining such a settlement if time is the only available parameter.⁸⁸

⁸⁸ Shapiro, *supra* note 2, at 407.

The patent holder's risk aversion⁸⁹ reflected in incumbent's arrow is the "canonical" model of individual choice behavior.⁹⁰ As Paul Samuelson explained: "People are generally risk-averse, preferring a sure thing to uncertain levels of consumption. . . ."⁹¹ Risk aversion also underlies the decision making of most corporate managers, according to Professor Scherer.⁹² According to the *Valley Drug* court, "[g]iven the asymmetries of risk and the large profits at stake, even a patentee confident in the validity of its patent might pay a potential infringer a substantial sum in settlement."⁹³ The risk averse incumbent would thus be willing to give up some time relative to the mean probable date of entry under litigation to get a settlement.

⁸⁹ "A person is risk-averse when the displeasure from losing a given amount of income is greater than the pleasure from gaining the same amount of income. . . . In terms of the utility concept that we analyzed . . . risk aversion is the same as diminishing marginal utility of income. Being risk-averse implies that the gain in utility achieved by getting an extra amount of income is less than the loss in utility from losing the same amount of income." PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, *ECONOMICS* 207 (17th ed. 2001).

⁹⁰ Alvin E. Roth, *Comments on Tversky's Rational Theory and Constructive Choice*, in *THE RATIONAL FOUNDATIONS OF ECONOMIC BEHAVIOR 198-202* (Kenneth Arrow et al. eds., 1996).

⁹¹ *Id.* at 208. Nobel Laureate Kenneth Arrow has similarly concluded: "From the time of Bernoulli on, it has been common to argue that (a) individuals tend to display aversion to the taking of risks, and (b) that risk aversion in turn is an explanation for many observed phenomena in the economic world." Kenneth J. Arrow, *The Theory of Risk Aversion*, in *ESSAYS IN THE THEORY OF RISK-BEARING* 90 (1974).

⁹² Professor Scherer has observed, "[o]nly the decision maker who attaches no significance whatsoever to avoiding risk will always choose alternatives with the highest best-guess payoffs. And such managers, empirical studies suggest, are rare." F.M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 30 (2d ed. 1980). See also RICHARD E. CAVES, *MULTINATIONAL ENTERPRISE AND ECONOMIC ANALYSIS* 26 (1982) ("[T]he argument against risk-avoiding diversification by the MNE [multinational enterprise] is likely to fail Another objection is that the business manager himself faces nondiversifiable risks if his company does badly. . . . Those managers who run enterprises. . . . may simply have room to pursue a number of personal goals, including risk avoidance. . . .").

The notion that the phenomenon of risk aversion applies to parties involved in litigation settlements is not a new one. For example, Professor Andrew Doughety's review of the economics of litigation settlements notes, at the end of a section discussing uncertainty:

Most of the earliest literature allowed for risk aversion by assuming that payoffs were in utility rather than monetary terms. . . .

There is a similar analysis in the perfect information strategic bargaining literature, where risk is introduced into an infinite horizon game by ignoring the time value of money but incorporating a probability of negotiations breaking down. Once again, for players whose preferences over outcomes reflect aversion to risk, the less risk averse player gets the greater share of the pie.

Andrew Doughety, *Settlement*, in 5 *ENCYCLOPEDIA OF LAW AND ECONOMICS* (Bouckaert & DeGeest eds., 2000).

⁹³ *Valley Drug Co.*, 344 F. 3d at 1310.

Hovenkamp, Janis, and Lemley recommend ignoring this risk aversion because courts are poorly equipped to analyze this problem.⁹⁴ They seem to be saying that a patent settlement should be declared anticompetitive even if it is procompetitive because it is too difficult to distinguish permissible payments resulting from risk aversion from impermissible payments motivated solely by an anticompetitive incentive to exclude. However, on the same grounds one could as easily conclude that the courts should treat all reverse payment settlements as justified reflections of risk aversion. Perhaps underlying the Hovenkamp, Janis, and Lemley policy choice is a belief that risk aversion is not an important phenomenon, but if that is the case they certainly do not attempt to prove it.⁹⁵

Jeremy Bulow does address this issue head on, arguing that risk aversion in large publicly traded companies should be very small and easily hedged.⁹⁶ Shapiro has similar doubts about the risk aversion of large companies but does seem to acknowledge that this might not be important because the managers may be risk averse even if the company is risk neutral.⁹⁷ Commentators have noted a similarity between settlements of patent suits and insurance against the risk of loss.⁹⁸ This is certainly a topic worthy of investigation. One place to start is with business insurance. This entire industry is difficult to reconcile with the Bulow notion that large companies are risk neutral. It seems unlikely that buyers of business insurance expect the insurance to pay off on average. That is, the insurance is not actuarially fair. If it were, the insurance companies would go out of business. Not only would they make no profits, but they would not have enough revenue to cover their expenses.

We can illustrate risk aversion using the example of two litigants negotiating a dispute in 2000 over a patent that expires in 2010. The patent holder believes it has a 50 percent chance of winning, meaning that the mean expected outcome of the litigation is that the alleged infringer will enter in 2005. A risk-averse patent holder may be willing to settle for an entry date of 2004 to eliminate the uncertainty of the

⁹⁴ Herbert Hovenkamp, Mark Janis & Mark A. Lemley, *Balancing Ease and Accuracy in Assessing Pharmaceutical Exclusion Payments*, 88 MINN. L. REV. 712 (2004).

⁹⁵ *But see* 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 707h, at 208–09 (2d ed. 2002) (“Uncertainty as to the validity and coverage of many patents makes disputes inevitable and settlements prudent.”).

⁹⁶ Bulow, *supra* note 2, at 32.

⁹⁷ Shapiro, *supra* note 2, at 407, 408 (“This is not to say that such payments are necessarily anticompetitive if other factors are brought into the analysis, such as risk aversion and asymmetry of information about market conditions, as “reverse payments” may be important in more complex settings for successful settlement.”).

⁹⁸ Crane, *supra* note 46, at 762.

litigation. If the patentee's reservation date is earlier than the mean probable date because of risk aversion, a reverse payment could move the settlement *to a later date* than the reservation date but to a date that is still earlier than the mean probable date of entry under litigation.

Where there is a gap as we have illustrated, how can the parties achieve this settlement? Reverse payments provide a valuable option. For example, the settlement with a reverse payment may permit the infringer to enter in June 2004. This is possible because delaying the time of entry has a different value to the litigants but money may have the same value to them. The time is worth more to the patent holder than to the alleged infringer if the revenue from the patent is higher with a single firm in the market than with two firms in the market competing. One case, but not the only case, where a single firm would earn much more than two competitors is where the patent gives the patent holder monopoly power. Under those conditions, the monopoly profits derived by the single patent holder may be much higher than the total profits derived through competition.

If this were the case, every day that the patent holder yields in settlement to the alleged infringer reduces the patent holder's profits more than it increases the infringer's profits. In our example, the litigants *cannot* close the gap with a payment of money alone. The patent holder will not go beyond its reservation date. However, the patent holder can pay money if it takes back some time it was willing to give. This time is worth so much more to the patent holder than the alleged infringer that taking the time back funds the cash payment. That is, instead of offering the reservation time, the patent holder offers less time and more money.⁹⁹ The cash payment offers the alleged infringer enough money to compensate it for the time it is demanding but not receiving.

For example, suppose that there is a year gap in the reservation dates of the two litigants. Over the ten-year remaining life of the patent, the alleged infringer wants to get in at year four and the patent holder draws the line at year five. To the patent holder, that year is worth, say, \$120 million dollars in monopoly profits beyond the competitive profits available after entry. To the alleged infringer, it is worth \$10 million (in competitive profits).

⁹⁹ I do not mean to imply that the negotiations will actually include a withdrawal of the time previously offered. It is equally plausible that the patent holder would never offer its full reservation time, withholding the last increment until it sees whether a deal can be made. When it sees that the last increment is not enough to close the gap, it offers money rather than the last bit of time because the money is worth much more to the alleged infringer than the time the patent holder could offer.

To close the gap, the patent holder pulls back from its reservation date of five years and proposes to let the alleged infringer in the market in five years, one month, and a few days. The time is worth somewhat over \$10 million to the patent holder, which he would be willing to pay to settle on that basis. This arrangement closes the gap by giving the patent holder the delayed entry it values and giving the alleged infringer the money it values. This process is welfare enhancing because the parties could not otherwise settle and the settlement still results in the alleged infringer entering earlier than the expected date of entry under litigation.

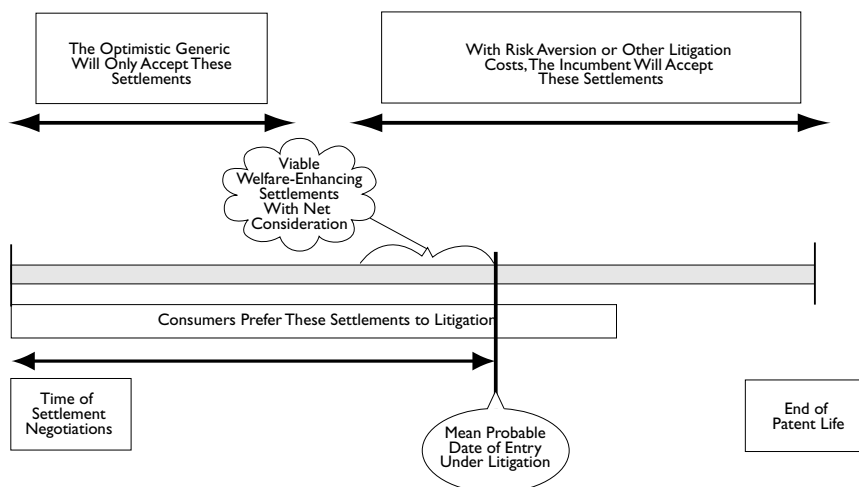
Why did the patent holder have to do all this to settle? Consider first the case of the cash-strapped alleged infringer illustrated above. A cash-strapped alleged infringer (labeled a generic in our illustration) needs to receive cash earlier rather than later.¹⁰⁰ Under this situation, the reservation time for the generic is much earlier than it would have been if the generic did not need cash. The generic would not be willing to wait until the mean probable date of entry. The illustration above shows that the generic's arrow does not meet the incumbent's arrow because its reservation time is earlier than it would be if it were not cash strapped. The generic is not willing to wait for the cash flow. If the generic were to litigate rather than settle, that would give the generic some chance of an early win that would provide it with needed cash.

Under these circumstances, a settlement is impossible without a reverse payment. The ends of the arrows that depict the reservation times for the incumbent and the generic do not touch or overlap. With net consideration, a deal is possible. In the illustration, the squiggly bracket shows the set of mutually agreeable procompetitive settlements that are opened up by the payment of net consideration. This set of possible settlements is on the early side of the mean probable date of entry, resulting in patent-splitting settlements with a reverse payment that are favorable to the consumer.

The settlement may result in earlier entry than the mean probable date of entry under litigation for other reasons. In a second model, the generic is over-optimistic about the litigation. The "Misplaced Optimism" diagram below illustrates this model.

¹⁰⁰ When firms are "cash strapped," their managers may act as if they are risk-preferrers. See Susan Rose-Ackerman, *Risk Taking and Ruin: Bankruptcy and Investment Choice*, 20 J. LEGAL STUD. 277 (1991). A risk-preferring firm would strictly prefer to litigate rather than settle for entry at the expected date from litigation. Hence, a risk-preferring infringer would demand an entry date strictly earlier than the expected date under litigation.

Misplaced Optimism

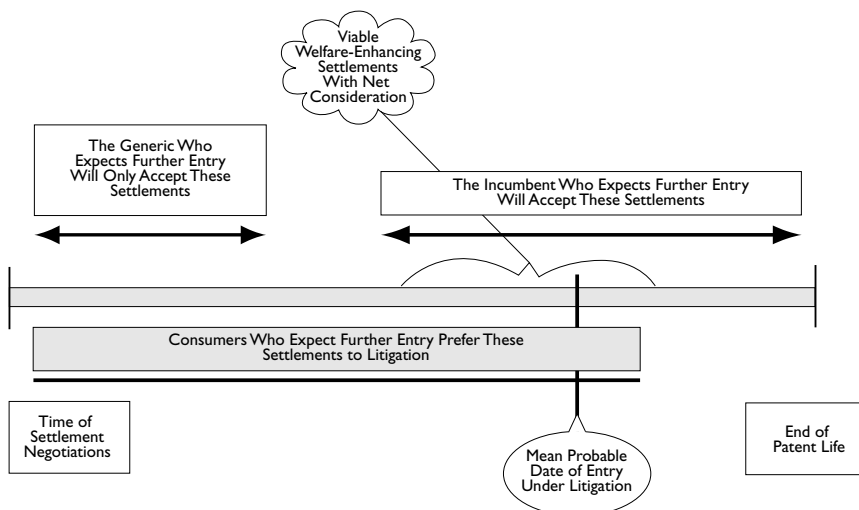


In the model, the reservation time for the incumbent is again to the left of the mean probable entry date due to risk aversion. The generic believes it has a better chance of winning the case than it actually does, and thus it is holding out for an optimistically early entry date. Because of this undue optimism, there is a gap between the incumbent's reservation date and the entrant's reservation date. The only way to settle is to permit a reverse payment to flow from the incumbent to the overly optimistic generic, so that the payment can close the gap. In such situations, there may be a range of settlement dates that can be supported by an agreement with a payment that still leaves consumers better off than they would be under litigation.

It does not require risk aversion to move the incumbent's reservation date to the early side of the mean probable entry date under litigation. As the next model illustrates, the incumbent might be willing to accept an early entrant date because of the prospect of third-party entry.

Such entry results in more competition. The generic is even more interested in early entry because the third-party entry will adversely affect the generic's profits even more than the incumbent's profits. Indeed, this asymmetric impact results in a settlement impasse that is reflected in the gap between the incumbent's and the generic's settlement arrows. The litigating parties can close the gap with net consideration, resulting in entry potentially earlier than the mean probable date of entry under litigation.

Entry by a Third Party

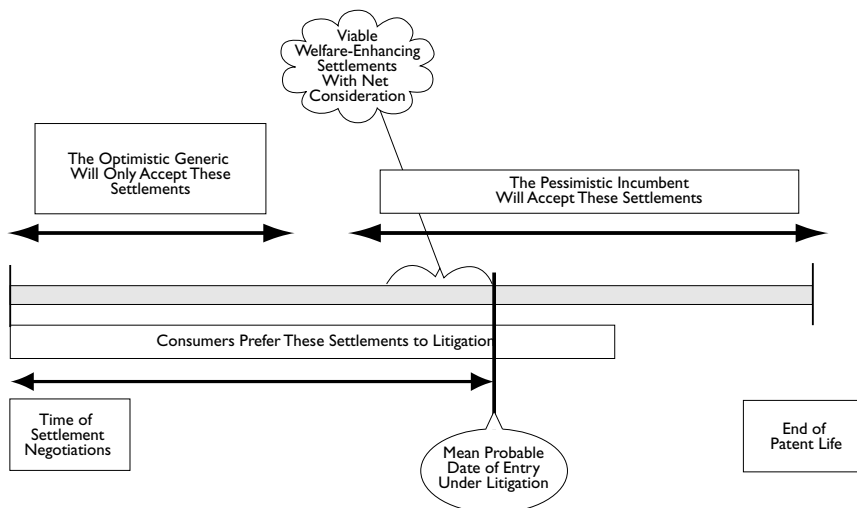


The above illustration shows something even more intriguing. The squiggly bracket, “viable welfare-enhancing settlements with net consideration,” extends past the mean probable date of entry under litigation. Consumers are willing to wait longer for entry, if they have to, because they prefer the certainty of having three parties in the market. They prefer the certainty of three parties to the potential for an earlier entry by the generic if three-party competition reduces the price much more than two-party competition.

Above, I showed that a reverse payment does not establish that settling parties necessarily had an anticompetitive intent. But even if it suggested an anticompetitive intent, that would be very different from proving an adverse effect.¹⁰¹ A final model illustrates this last point. Even a payment that has the intent of delaying entry may not in fact delay entry. The

¹⁰¹ Courts repeatedly have rejected evidence of anticompetitive intent as a substitute for evidence of anticompetitive effects. *See, e.g., Levine v. Central Fla. Med. Affiliates, Inc.*, 72 F.3d 1538, 1552 (11th Cir. 1996) (“proof of . . . intent [to restrict competition] would not relieve [plaintiff] of the necessity of either proving the defendants’ market power or proving an actual detrimental effect on competition”); *SCFC ILC, Inc. v. Visa USA, Inc.*, 36 F.3d 958, 970 (10th Cir. 1994) (evidence of intent “to discourage price competition . . . is not an objective basis upon which section 1 liability may be found”); *U.S. Healthcare, Inc. v. Healthsource, Inc.*, 986 F.2d 589, 596 (1st Cir. 1993) (“Motive can, of course, be a guide to expected effects, but effects are still the central concern of the antitrust laws, and motive is mainly a clue.”); *Schachar*, 870 F.2d at 400 (“Animosity, even if rephrased as ‘anticompetitive intent,’ is not illegal without anticompetitive effects.”).

Varied Assessments of Success



illustration, “Varied Assessments of Success” depicts an incumbent and the generic at odds about the probabilities of the underlying patent litigation, but where neither of them have it right from the point of view of the outside observer. The incumbent has a pessimistic view of its chances of success relative to the true odds, and thus has a reservation date on the early side of the mean probable date of entry. The incumbent is not risk averse. The generic has an overly optimistic view of its odds of winning the case relative to the true probabilities, and holds out for an earlier time entry than the mean entry date. There is a gap between the reservation dates because the generic’s optimism is stronger than the incumbent’s pessimism.

The gap prevents the litigants from finding a mutually agreeable date of entry. Consumers would benefit from any settlement that leads to an entry date any time up to the mean probable date of entry. Here, a reverse payment would again allow the parties to close the gap between their differing reservation dates, but on dates that would still be earlier than the mean date of entry. It should be noted that the settlement entry date is after the entry date that both parties would project as the mean probable date of entry under litigation. Nevertheless, it is before the mean probable entry date as reflected by the merits of the litigation.

This point seems well understood by Judge Posner in *Asahi*.¹⁰² Judge Posner rejects the intent standard inherent in the reverse-payment

¹⁰² *Asahi Glass Co.*, 289 F. Supp. 2d at 993.

model, citing all the cases one normally cites to reject intent evidence as sufficient to carry the day in an antitrust suit.¹⁰³ Instead, like the court in *Valley Drug*, Judge Posner would not be concerned unless the suit that resulted in the settlement was objectively baseless.

VIII. CONCLUSION

Many, maybe most, patent settlements include reverse payments. They may be explicit payments, as in the Hatch-Waxman context, or, in the more conventional context, they may be implicit payments that reduce the expected damages award. If reverse payments are to be condemned without more, we may have no patent settlements at all.

But such settlements should not be condemned out of hand, not just because we would overburden the court system but because such settlements are not necessarily anticompetitive even under the reasoning typically used to condemn such payments. Reverse payments may in fact accelerate entry and there is no shortcut to make that determination.

The shortcut that is generally proposed, the uncertain competition or probable rights standard, is totally alien to the way courts usually decide cases. The analysis strips patent holders of the right to exclude based on traditional standards of proof. It replaces that right with a probabilistic right, which requires calibrating the exact likelihood of success. If we apply this notion of probabilistic rights in other contexts, we get extremely troubling results. The proponents of such a regime of rights offer us neither a complete system of justice, nor limiting principles to protect us from these troubling results.

Additionally troubling is the fact that the shortcut is out of the mainstream of antitrust thought. The standard is based on the litigant's perceptions, not outcomes, elevating intent over effects. Indeed, a patent holder's belief that it is paying money to do better than it could in litigation is dispositive. And, it is not really the patent holder's belief that is dispositive under the shortcut. It is instead an assumption made about the patent holder's belief based on the fact of a reverse payment. However, this article has shown there are procompetitive reasons that a patent holder would make such a payment. So the short cut not only relies on intent evidence, it relies on intent evidence that may not even reliably show the party's intent.

On the other hand, the traditional standard of proof yields troubling results, particularly in those cases where the patent holder has settled by offering the alleged infringer the majority of the patent life. Under

¹⁰³ *E.g.*, *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993); *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 459 (1993).

those circumstances, the settlement may be procompetitive under the uncertain competition standard but unlawful under conventional standards of proof. Recognizing this problem led to consideration of a standard that honored the patent right under traditional standards of proof but permitted antitrust defendants to use the uncertain competition standard as an efficiency defense if the patent fails the traditional test. Nevertheless, the analysis becomes so complex that there is something to be said for simply declaring settlements arguably within the scope of the patent to be *per se* legal.

There is also something to be said for avoiding the entire problem but not by simply giving up on settlements—that would overburden the court system, increase litigation costs, and create costly business uncertainty. Instead, settling parties might seek court approval of their settlements. If the court agrees, the settling litigants would likely be immune from antitrust prosecution.