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ANTITRUST TREATMENT OF THE NO CHALLENGE CLAUSE

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This Article examines a patent licensing practice that has hitherto escaped the attention of U.S. antitrust law: the no challenge clauses. Under these clauses, a patent licensee is prohibited from challenging the validity of the licensed patent. These clauses have so far only been examined under patent law in terms of enforceability. This oversight by antitrust law is unfortunate, as no challenge clauses can create consumer harm by protecting an otherwise invalid patent from challenges and artificially extending the exclusive period granted by the patent law. This means that consumers have to bear supra-competitive prices for longer than necessary. A number of factors are relevant to the analysis of the legality of no challenge clauses, such as market power, patent validity, and market structure at the licensee level. This Article proposes a framework based on the Rule of Reason that incorporates all of these relevant factors and structures them in a way that renders the framework easy to apply. Lastly, the Article rejects a number of justifications that have been offered to argue for the legality of these clauses across the board.

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INTRODUCTION

One of the anomalies in U.S. antitrust law, despite its comparatively vast jurisprudence, is that courts seem to have never ruled on the legality of no challenge clauses. These clauses generally prohibit a licensee from challenging the validity of the patent being licensed. Thus far, no challenge clauses have only attracted the attention of patent law and have been dealt with largely as a question of enforceability.[1] Different appellate courts have expressed diverse views on the enforceability of no challenge clauses, depending on the nature and timing of the agreement in which they are incorporated.[2] To the extent that these clauses are enforceable, it leads to the question of how they should be treated under antitrust law.

In the circuits in which they are unenforceable, no challenge clauses may be viewed as a non-binding agreement by licensees that they will not challenge the validity of the patent. In such cases, there is a legitimate question as to why licensees would make such a commitment, what enticements have been offered by the patentee to secure such a commitment, and what this tells us about the patentee's own belief in the likelihood of patent validity.

In circuits in which no challenge clauses are enforceable, these clauses can exert anticompetitive effects by preventing challenges to invalid patents. No challenge clauses do not seem so competitively benign that one can conclusively assert that they do not inflict harm on consumers.

A focus on no challenge clauses is further justified by the attention that other jurisdictions have paid to them in recent years. In 2015, a Chinese enforcement authority fined Qualcomm close to $1 billion over the imposition of no challenge clauses, among other offenses.[3] Moreover, no challenge clauses are one of the areas in which the U.S. and the European Union ("EU"), the two leading antitrust jurisdictions in the world, have diverged. While U.S. antitrust law has largely left these clauses untouched, the EU, to the extent its view is embodied by the

[1] *See* discussion *infra* Section II.A.
[2] *See* discussion *infra* Section II.A.
[3] *See* discussion *infra* Section II.C.2.

European Commission, has taken a fairly hostile attitude toward them.[4] In fact, largely due to the Commission's view, these clauses have mostly been expunged from European licensing agreements.[5] In light of the international divergences, it is worth exploring how these clauses should be approached.

This Article fills an important gap in the U.S. antitrust academic literature by exploring antitrust treatment of no challenge clauses. As far as this author is aware, no academic article thus far has examined this issue. The only notable exception is an article by Miller and Gal, which focused on the enforceability of no challenge clauses from a patent law and total welfare perspective.[6]

This Article is divided into seven sections. Following this introductory section, Section I provides an overview of no challenge clauses and sets forth a taxonomy for these clauses. Section II surveys the jurisprudence on no challenge clauses in the three main antitrust jurisdictions in the world; the U.S., the EU, and China, highlighting the differences among them. Section III explains the circumstances under which no challenge clauses can create consumer harm and identifies the relevant factors for analyzing and predicting such harm. Section IV enumerates the various justifications for no challenge clauses and rebuts them. Section V summarizes the main ideas in the preceding Sections and outlines an analytical framework for analyzing no challenge clauses under antitrust law. The conclusion is the final section.

I
OVERVIEW OF NO CHALLENGE CLAUSES

A. Definition of No Challenge Clauses

No challenge clauses are inserted in patent licensing agreements to prohibit the licensee from challenging the validity of the patent for a period of time, usually the duration of the contract.[7] Patentees incorporate such clauses into their licensing agreements to forestall potential validity challenges by the licensees. According to Orstavik, "[t]he object of a no-challenge clause is to fortify a position granted by

[4] *See* discussion *infra* Section II.A.2.

[5] *See* Sophie Lawrence, *The Competition Law Treatment of No-Challenge Clauses in License Agreements: An Unfortunate Revolution?*, 9(10) J. INTELL. PROP. L & PRAC. 802, 810 (2014).

[6] Alan D. Miller & Michal S. Gal, *Licensee Patent Challenges*, 32 YALE J. ON REG. 122, 127 (2015).

[7] Inger B. Orstavik, *Technology Transfer Agreements: Grantbacks and No Challenge Clauses in the New EC Technology Transfer Regulation*, 36(1) INT'L REV. INTELL. PROP. & COMPETITION L. 83, 87 (2005).

law."[8] These clauses, however, do not provide patentees with fool proof defenses against validity challenges; because they only govern licensees, they have no effect on the conduct of unrelated third parties.[9] Therefore, the patent could still be subject to challenges by third party actors. The degree of protection offered by these clauses therefore depends on the likelihood and willingness of unrelated third parties to challenge the patent. If there is a third party that is likely and willing to challenge the patent despite the clause, the degree of protection afforded to the patentee will be limited. However, if most of the possible challengers have already been recruited as licensees and are subject to the no challenge clause, the patentee can be assured of the continual validity of its patent.

In spite of the no challenge clause, the likelihood of third party challenges to the patent bears upon the continual validity of the patent and its competitive effects. Ultimately, this likelihood is circumstance-specific and requires detailed examination. The courts and commentators, however, have opined that licensees are the parties with the greatest economic incentives to challenge the validity of patents. In *Lear, Inc. v. Adkins*, the U.S. Supreme Court declared that "[l]icensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery."[10] To the extent that this is true, no challenge clauses will effectively forestall validity challenges, which may allow an invalid patent to persist.

B. Different Types of No Challenge Clauses

There are different types of no challenge clauses, which can be classified into two main categories. The first category consists of outright prohibitions of validity challenges in the licensing agreement, which Miller and Gal have called no contest clauses.[11] Whether the clause in fact achieves outright prohibition depends on the willingness of the courts to grant injunctions or to bar validity challenges to enforce these clauses. To the extent that courts eschew injunctions for enforcing no challenge clauses, the patentee will only obtain damages. In that case, outright validity challenge prohibitions will only impose a financial penalty, which places them in the second category. Miller and Gal call these challenge penalty clauses.[12]

There is a wide variety of challenge penalty clauses. The penalty may be in the form of a financial penalty or a loss of contractual privileges, which ultimately

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[8] *Id.*
[9] *Id.*
[10] Lear, Inc. v. Adkins, 395 U.S. 653, 670 (1969).
[11] Miller & Gal, *supra* note 6, at 127.
[12] *Id.* at 131.

will result in financial losses for the licensees. The financial penalty can be in the form of liquidated damages or higher royalties. For instance, in *Rates Technology Inc. v. Speakeasy, Inc., LLC*, the no challenge clause stipulated liquidated damages of a value of over twenty-four times the license fee.[13] One might argue that if the liquidated damages are so substantial that it would have a serious financial impact on the licensee, or perhaps even bankrupt the licensee, the challenge penalty clause effectively functions as an outright prohibition. The financial penalty may also exist in the form of elevated royalty.[14] In such case, the challenge penalty clause would stipulate that the royalty rate would increase in response to a validity challenge launched by the licensee.[15] A slight variation of an elevated royalty clause is a clause that provides for a higher royalty rate only when the validity challenge turns out to be unsuccessful.[16] A further variation is a clause that establishes three tiers of royalty rates, "with the rate increasing once a challenge is mounted, and providing for an even higher royalty if the challenge is not successful."[17] These various types of clause create financial disincentives for the licensees to challenge a patent.[18]

Another kind of arrangement that similarly creates financial disincentives for licensees to challenge a patent is royalty front-loading.[19] Strictly speaking, this type

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[13] Rates Tech., Inc. v. Speakeasy, Inc., 685 F.3d 163 (2d Cir. 2012).

[14] Lorelei Ritchie, *Reconciling Contract Doctrine with Intellectual Property Law: An Interdisciplinary Solution*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 105, 146 (2008).

[15] *Id*.

[16] Rochelle Cooper Dreyfuss & Lawrence S. Pope, *Dethroning Lear? Incentives to Innovate After MedImmune*, 24 BERKELEY TECH L.J. 971, 1001 (2009).

[17] *Id*.

[18] To the extent that the royalty increase kicks in only after the patent has been validated, Rochelle Dreyfuss and Lawrence Pope argue that the clause does not impose a penalty at all; the royalty increase merely reflects the increased value of a patent that has survived a challenge. *Id*. at 1002. There is a general perception that a patent that has been validated by the courts is more valuable than an untested patent. While a validated patent is no doubt more valuable to the patentee, it is not entirely clear why the patent would become more valuable to the licensee. To the licensee, a license is valuable because it allows the licensee to use the patented technology. This right to use the patented technology should not change in value after validation. Validated or not, what is valuable to the licensee is not the right to exclude granted by the patent, but the underlying technology, which does not change after the patent has been validated. A license to an invalidated patent will be worth less (or perhaps nothing) because everyone is now free to use the technology. But a license to a validated and an invalidated (a patent that has not been subject to a validity challenge) patent should be worth the same to the licensee. The only way in which a license to a validated patent may be worth more to a licensee is if the current market is not entirely competitive and the licensee is able to charge a somewhat supra-competitor price, and a validated patent will be able to exclude third parties without a license with certainty.

[19] Lawrence, *supra* note 5, at 810.

of arrangement need not entail a financial penalty. If the royalty that is required of the licensee over the duration of the licensing agreement is the same as the amount that the licensee is liable to pay without front-loading, there is no financial penalty on the licensee. However, the licensee would be similarly deterred from challenging the patent as compared to a royalty increase upon challenge. This is because under current patent law, a licensee cannot recover the royalty that has been paid to the patentee prior to invalidation if the patent turns out to be invalidated, even though the licensee arguably should have never had to pay royalty to the patentee if the patent had always been invalid.[20] Therefore, if a patentee front-loads the royalty, the licensee will lose the incentive to challenge the patent because she will achieve little savings in terms of aggregate royalty payment. Even though the arrangement does not entail a financial penalty, it would achieve a similar result as a challenge penalty clause.[21]

The remaining type of challenge penalty clause is the termination-upon-challenge clause, which stipulates a termination of the licensing agreement upon the launch of a validity challenge by a licensee. This type of clause functions mainly by threatening the licensee with damages claims from the patentee if the licensee continues to deploy the licensed technology to produce the product. Upon the launch of a validity challenge, the licensing agreement either automatically terminates or gives the patentee an option to terminate the agreement.[22] Once the agreement is terminated, the licensee would be infringing the patent if she chose to continue to use the technology. If the patent is eventually upheld, the patentee can sue the licensee for patent infringement. The licensee may even be liable for trebled damages if the patentee can prove that the infringement is willful.[23] This gives the licensee a significant disincentive to bring validity challenges, at least unless she is quite confident of her chance of success. This may serve the laudable purpose of deterring frivolous validity challenges,[24] but the deterrent effect may be so great that it discourages meritorious challenges that are short of a slam-dunk.

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[20] See Nellie A. Fisher, *The Licensee's Choice: Mechanics of Successfully Challenging a Patent under License*, 6 TEX. INTELL. PROP. L.J. 1, 31-43 (1997).

[21] Dreyfuss & Pope, *supra* note 16, at 994. Commentators, however, have noted the limitations of royalty front-loading. In particular, it has been argued that front-loading may not be feasible if the licensee is cash strapped or if the commercialization of the technology requires substantial upfront investment. *See id.* at 983, 992-996; Miller & Gal, *supra* note 6, at 150. In that case, the licensee may be unable or unwilling to pay a substantial part of the royalty upfront.

[22] Christian Chadd Taylor, *No-Challenge Termination Clauses: Incorporating Innovation Policy and Risk Allocation into Patent Licensing Law*, 69 IND. L.J. 215, 230 (1993).

[23] Patent Act § 284, 35 U.S.C. § 284 (2011).

[24] Taylor, *supra* note 22, at 234 (1993).

Because of the mixed effects of termination-upon-challenge clauses, there are differing views as to whether they actually impose a penalty. Some commentators have argued that termination-upon-challenge clauses merely level the playing field between the patentee and the licensee in the course of litigation and will help promote innovation by protecting the patentee's investment.[25] According to Taylor, "[d]uring litigation, the licensee profits from the product without paying royalties or incurring competition from other licensees. The licensor, on the other hand, must incur litigation without collecting royalties and, if the licensee holds an exclusive license, without the right to license the patent to another."[26] Short of repudiating the licensing agreement, the licensee could continue to produce the product using the patentee's technology while challenging the patent and holding the patentee bound by the agreement. Some critics argue that this is unfair to the patentee.[27] Meanwhile, other commentators have contended that termination-upon-challenges may have a deleterious effect on welfare and should be subject to scrutiny by the courts.[28] Regardless of whether the patentee is in a disadvantageous bargaining position vis-à-vis the licensee in the course of a validity challenge, it is clear that termination-upon-challenge clauses produce significant deterrent effect on licensees. Especially if willful infringement can be proved, the effect of these clauses could be similar to that of no challenge clauses with hefty liquidated damages, as in *Rates Technology*.[29]

The treatment of these various types of outright no challenge and challenge penalty clauses under U.S. patent law is still subject to debate. While most believe that an outright no challenge clause in a licensing agreement would be unenforceable, there is case law that suggests otherwise.[30] The situation is likewise unclear for termination-upon-challenge clauses.[31] Furthermore, while some commentators believe that the Supreme Court would invalidate no challenge clauses after *MedImmune, Inc. v. Genentech, Inc*,[32] others believe that the issue is still wide open.[33] With respect to the various royalty adjustment mechanisms, given

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[25] *Id*. at 232.
[26] *Id*. at 243.
[27] *Id.*
[28] Miller & Gal, *supra* note 6, at 154.
[29] *See generally* Rates Tech., Inc. v. Speakeasy, Inc., 685 F.3d 163 (2d Cir. 2012).
[30] *See* discussion *infra* Section II.A.2.
[31] *See* discussion *infra* Section II.A.5.
[32] See M. Natalie Alfaro, *Barring Validity Challenges Through No-Challenge Clauses and Consent Judgments: MedImmune's Revival of the Lear Progeny*, 45 HOUS. L. REV. 1277, 1309 (2008).
[33] *See* Dreyfuss & Pope, *supra* note 16, at 1004-05. ("In some ways, the best way to deal with MedImmune is for the patent holder to bargain for the right to terminate the license should the

the latitude that is usually given to the patentees to structure their royalty, it is unlikely that they will be deemed unenforceable.

Nonetheless, enforceability under patent law and legality under the antitrust law are two distinct issues. When determining whether a certain licensing practice should be enforceable under patent law, courts usually look to patent policy, which aims to encourage innovation by generating sufficient incentives.[34] When assessing the legality of the same practice under antitrust law, courts pay heed to antitrust policy and the overriding objective of the protection of consumer welfare.[35] Antitrust law emphasizes substance over form. If an outright no challenge clause and the various challenge penalty clauses exert the same effect on the licensee's incentive to launch a validity challenge, they should result in similar impact on consumer welfare and therefore should be accorded the same treatment. The form in which the deterrent effect on licensees is achieved should not be dispositive from an antitrust perspective.

C. Timing of the Agreement

Apart from the form in which they take, no challenge clauses also may differ in the timing between when the agreement is entered and when the validity challenge commences and concludes. There are generally three time settings for the entry of the agreement. The first is a pure licensing agreement that is entered in the absence of any threat of litigation. The second is a settlement agreement that is entered when litigation is imminent or has commenced and has proceeded to various stages prior to conclusion. The third is consent decree, which concludes litigation by the agreement of both parties with the court's approval. The question, therefore, is whether the timing of the agreement affects the enforceability of the no challenge clause under patent law and should affect the legality of the clause under antitrust law.

Overall, the timing of the agreement has had a bearing on judicial attitude toward no challenge clauses, although there is no clear consensus among the appellate courts.[36] Courts seem to have treated no challenge clauses in licensing agreement with the greatest hostility.[37] Most seem to agree that no challenge

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licensee choose to challenge the validity of the patent. With respect to litigation risks, this would fully restore the parties to the pre-Medlmmune situation.").

[34] HERBERT HOVENKAMP ET AL., IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 1.3.

[35] *Id.*

[36] *See* discussion *infra* Section II.A.

[37] *See* discussion *infra* Section II.A.2.

clauses incorporated in licensing agreements are unenforceable as a matter of patent law.[38] However, the Supreme Court has never expressly decided the issue. The Federal Circuit, which is the most important appellate court for patent issues, has indicated that a clear and unambiguous no challenge clause should be enforceable even in the absence of a threat of litigation.[39]

No challenge clauses in settlement agreement seem to have received more lenient treatment from the courts.[40] Again, consensus eludes the various appellate courts. The Second and the Ninth Circuits have struck down no challenge clauses in settlement agreements,[41] while the Sixth and the Federal Circuits have upheld them under specific circumstances.[42] More recently, the Second Circuit has held that a no challenge clause contained in a settlement agreement entered into after discovery would be upheld.[43] A similar circuit split is also observed with respect to the enforceability of no challenge clauses incorporated in consent decrees. The Second and the Seventh Circuits have refused to enforce no challenge clauses contained in consent decrees[44] whereas the Federal Circuit has largely enforced them.[45]

Courts have offered a range of reasons for offering disparate treatment to no challenge clauses contained in different types of agreements. For consent decrees, the Federal Circuit has argued that the doctrine of res judicata favors the definitive

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[38] *See* discussion *infra* Section II.A.2.

[39] Baseload Energy, Inc. v. Roberts, 619 F.3d 1357, 1363 (Fed. Cir. 2010) ("In the context of settlement agreements, as with consent decrees, clear and unambiguous language barring the right to challenge patent validity in future infringement actions is sufficient, even if invalidity claims had not been previously at issue and had not been actually litigated.").

[40] *See* discussion *infra* Section II.A.3.

[41] Massillon-Cleveland-Akron Sign Co. v. Golden State Advert. Co., 444 F.2d 425 (9th Cir. 1971) (striking down no challenge clauses in the 9th Circuit); Warner-Jenkinson Co. v. Allied Chemical Corp., 567 F.2d 184 (2d Cir. 1977) (striking down no challenge clauses in the 2nd Circuit).

[42] Aro Corp. v. Allied Witan Co., 531 F.2d 1368 (6th Cir. 1976) (enforcing no challenge clause in settlement agreement entered into after discovery); Flex-Foot, Inc. v. CRP, Inc., 238 F.3d 1362 (Fed. Cir. 2001) (enforcing no challenge clause where alleged infringer had challenged patent validity, had had opportunity to conduct discovery regarding validity, and had agreed voluntarily to dismiss suit with prejudice).

[43] Rates Tech., Inc. v. Speakeasy, Inc., 685 F.3d 163 (2d Cir. 2012) (enforcing no challenge clause in settlement agreement entered into after discovery).

[44] Addressograph-Multigraph Corp. v. Cooper, 156 F.2d 483 (2d Cir. 1946) (refusing to enforce no challenge clause in consent decrees); Bus. Forms Finishing Serv. v. Carson, 452 F.2d 70 (7th Cir. 1971).

[45] Foster v. Hallco Mfg., 947 F.2d 469 (Fed. Cir. 1991); Diversey Lever, Inc. v. Ecolab, Inc., 191 F.3d 1350 (Fed. Cir. 1999).

disposition of legal disputes, and parties should not be allowed to reopen the validity issue later.[46] For settlement agreements, there seems to be a predominant view that discovery affords parties the opportunity to fully inform themselves of the issues. Thus a no challenge clause incorporated in a settlement agreement entered into after discovery should represent an informed, binding decision by the parties.[47]

Whether no challenge clauses contained in licensing and settlement agreements should be treated differently from an antitrust perspective will be discussed subsequently. For now, suffice it note that consent decrees present slightly different issues from the other two types of agreements. While some courts have admittedly refused to enforce no challenge clauses contained in consent decrees, attaching antitrust liability to the clause is a different matter.[48] Even though the basis of a consent decree is an agreement between the two litigating parties, judicial supervision would suggest that the court approves of the provisions in the agreement.[49] It would be quite remarkable to assert that a clause that has been approved by the court should turn out to be illegal, giving rise to trebled damages and other liability. Therefore, no challenge clauses contained in consent decrees should be beyond the purview of antitrust law. Instead, the focus should be on licensing and settlement agreements.

II
TREATMENT OF NO CHALLENGE CLAUSES IN DIFFERENT JURISDICTIONS

The treatment of no challenge clauses varies widely across the major jurisdictions. In the U.S., no court seems to have ruled on the legality of no challenge clauses under antitrust law or held them to constitute patent misuse.[50] As

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[46] *Foster*, 947 F.2d at 474-75.

[47] Dylan Pittman, *Allowing Patent Validity Challenges Despite No-Challenge Clauses: Fulfilling the Will of King Lear*, 48 IND. L. REV. 339, 356 (2014); Melissa Brenner, Comment, *Slowing the Rates of Innovation: How the Second Circuit's Ban on No-Challenge Clauses in Pre-Litigation Settlement Agreements Hinders Business Growth*, 54 B.C. L. REV. SUPP. 57 (2013).

[48] *See, e.g.*, *Addressograph-Multigraph*, 156 F.2d 483; *Bus. Forms Finishing Serv.*, 452 F.2d 70.

[49] Judith Resnik, *Judging Consent*, 1 U. CHI. LEGAL F. 43, 45 (1987).

[50] In *Bendix*, the Seventh Circuit did rule on the issue of whether a no challenge clause can constitute patent misuse during and after the term of the license. Bendix Corp. v. Balax, Inc., 421 F.2d 809 (7th Cir. 1970). It held that such a clause during the term of the license did not constitute patent misuse. The Court decided the case largely on the policy articulated in *Lear, Inc. v. Adkins*, and did not consider antitrust policy. The Court did hold that a post-expiration no challenge clause may constitute a patent misuse under *Brulotte v. Thys Co.*, which had held that

mentioned earlier, the various appellate courts have expressed different views on their enforceability under patent law. In the EU, the position on no challenge clauses under the Technology Transfer Block Exemption Regulations ("TTBER") has evolved over time. The current position under the 2014 TTBER is that all no challenge clauses, including termination-upon-challenge clauses, fall within what are known as excluded restrictions.[51] Apart from a limited number of exceptions, these clauses will not benefit from the block exemption and will need to be justified under Article 101(3) of the Treaty on the Functioning of the European Union ("TFEU") in order to be lawful under EU competition law. For all intents and purposes, most parties avoid clauses that are excluded restrictions in their licensing agreements, partly because justification under Article 101(3) is generally perceived to be difficult.[52] In other words, commercial parties practically treat no challenge clauses as illegal.

In China, one of the relatively recent but nonetheless important jurisdictions, no challenge clauses also seem to be practically illegal per se, as indicated by the one case in which they were examined. In the February 2015 decision on Qualcomm's licensing practices, the National Development and Reform Commission ("NDRC), one of the Chinese enforcement authorities, effectively deemed no challenge clauses as illegal per se. In the IP-Competition Regulations issued in April 2015 by the State Administration of Industry and Commerce ("SAIC") (another Chinese enforcement authority), Article 10 proscribes the use of no challenge clauses absent legitimate justifications.[53] The Regulations are silent on what constitutes a legitimate justification. The following sections provide a detailed overview of the status of no challenge clauses under U.S., EU, and Chinese law.

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collection of royalty post expiration is patent misuse. Again, the decision was not made on antitrust grounds. A number of courts have reached a similar conclusion regarding pre-expiration no challenge clauses. *See* Congoleum Ind., Inc. v. Armstrong Cork Co., 366 F. Supp. 220 (E.D. Penn. 1973); Wallace Clark & Co., Inc. v. Acheson Ind., Inc., 401 F. Supp. 637 (S.D.N.Y. 1975); Panther Pumps & Equipment. Co. v. Hydrocraft, Inc., 468 F.2d 225 (7th Cir. 1972).

[51] Commission Regulation (EU) 316/2014 of Mar. 21, 2014, The Application of Article 101(3) of the Treaty on the Functioning of the European Union to Categories of Technology Transfer Agreements, OJ L93/17 [hereinafter "2014 TTBER"], art. 5(1)(b).

[52] Lawrence, *supra* note 5, at 2.

[53] Guanyu Jinzhi Lanyong Zhishi Chanquan Paichu, Xianzhi Jingzheng Xingwei de Guiding (关于禁止滥用知识产权排除、限制竞争行为的规定) [Provisions on Prohibiting the Abuse of Intellectual Property Rights to Exclude and Restrain Competition] (promulgated by State Administration of Trade and Commerce, Apr. 7, 2015, effective Aug. 1, 2015), http://www.saic.gov.cn/zcfg/xzgzjgfxwj/xxb/201504/t20150413_155104.html.

A. The United States

1. Lear, Inc. v. Adkins

U.S. courts have suggested that no challenge clauses would be illegal if they were incorporated into a market allocation agreement.[54] It has also been held that the use of reciprocal dealing to force a counterparty not to challenge a patent is an antitrust violation.[55] However, it seems that no courts have ruled on the legality of no challenge clauses on their own; instead, much of the action regarding no challenge clauses has been under patent law. Any exposition of the law on no challenge clauses must start with the 1969 Supreme Court case of *Lear, Inc. v. Adkins*. Prior to this case, the doctrine of licensee estoppel, which was first applied by the Supreme Court in 1856 in *Kinsman v. Parkhurst*,[56] had prevailed in the U.S.[57] The doctrine essentially states that once a licensee accepts a licensing agreement from a patentee, the licensee is deemed to have acquiesced to the

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[54] In *Jack Winter, Inc.*, the Court held that a mere agreement not to challenge the validity of a patent without an accompanying market division agreement does not constitute an illegal per se market allocation agreement under the Sherman Act. Jack Winter, Inc. v. Koratron Co., Inc., 375 F. Supp. 1 (N.D. Cal. 1974). The Court also held that the agreement was not an unreasonable restraint of trade based on a variety of reasons that did not focus on the competitive harm of the agreement.

In *Nachman Spring-Filled Corp*., the Court held that a clause in an agreement whereby a party acknowledged the validity of a patent is illegal under the Sherman Act. Nachman Spring-Filled Corp. v. Kay Mfg. Co., 139 F.2d 781 (2d Cir. 1943). However, the agreement at issue also contained a market allocation agreement whereby one party agreed to cease production. And the Court's holding that the validity acknowledgement clause is illegal is closely tied to the legality of the market allocation agreement. "Accordingly defendant's covenant acknowledging the patent's validity constitutes, in effect, an undertaking that, if sued by plaintiff for enforcement of that agreement, defendant will not assert the defense that the agreement is illegal. Such a raising-by-one's-boot's-straps undertaking, of course, cannot be enforced." *Id*. at 784.

[55] In *W.L. Gore & Assoc.*, the Court held that the use of reciprocal dealing to coerce an alleged infringer to not challenge the validity of a patent to be patent misuse and an antitrust violation. W.L. Gore & Assoc. v. Carlisle Corp., 381 F. Supp. 220 (E.D. Penn. 1973). However, the Court's emphasis was clearly on the infringement plaintiff's use of reciprocal dealing, and not the no challenge clause per se. Moreover, there was no agreement of any kind between the two parties. The case merely concerned a threat against the other party not to challenge the patent. *Id*.

[56] Kinsman v. Parkhurst, 59 U.S. 289 (1855).

[57] However, as the Court itself noted in *Lear*, the Court had never consistently applied the doctrine since *Parkhurst*. In a few subsequent decisions, the Court refused to apply the doctrine to estop licensee validity challenge without much effort to distinguish the instant case from *Parkhurst*. In the first half of the 20th century, the Court had created so many exceptions to the doctrine that "the estoppel doctrine had been so eroded that it could no longer be considered the 'general rule'". Lear Inc. v. Adkins, 395 U.S. 653, 664 (1969).

validity of the patent underlying the agreement and is estopped from launching validity challenges later.[58] The doctrine was largely based on equitable considerations and paid little heed to the social harm of upholding an invalid patent.[59]

In *Lear, Inc. v. Adkins*, the U.S. Supreme Court ruled on whether the licensee estoppel doctrine estopped Lear, Inc. from pleading patent invalidity in the suit. In language that has been cited repeatedly by the lower courts ever since, the Supreme Court declared that the public policy of clearing invalid patents overrides the equitable considerations favoring the patentee:

> Surely the equities of the licensor do not weigh very heavily when they are balanced against the important public interest in permitting full and free competition in the use of ideas which are in reality a part of the public domain. Licensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery. If they are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification. We think it plain that the technical requirements of contract doctrine must give way before the demands of the public interest in the typical situation involving the negotiation of a license after a patent has issued.[60]

This paragraph is notable for developing the law on no challenge clauses in two respects. First, although the case did not in fact involve a no challenge clause,[61]

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[58] ABA SECTION OF ANTITRUST LAW, INTELLECTUAL PROPERTY AND ANTITRUST HANDBOOK 233 (2007).

[59] *See Lear*, 395 U.S. at 669-70 (discussing whether the doctrine applies based on equities of licensor).

[60] *Id.* at 670-71.

[61] Miller and Gal, however, argue that one of the contractual provisions in the case effectively functioned as a no challenge clause because it "required the licensee to continue paying royalties during the pendency of the patent challenge." Miller & Gal, *supra* note 6, at 131. It is unclear whether the practical effect of this clause is such that it functions as a no challenge clause. The clause effectively reduces the payoff to the licensee for a successful challenge by the amount of royalty due during the litigation. Assuming that the patent is not nearing expiration (in which case the licensee would have few incentives to challenge the patent anyway), and the ratio between the litigation period and the remainder of the patent term (assuming that the licensee intends to renew the licensing agreement all the way up to patent expiration) is not very high, there is no reason to believe that the reduction in payoff should have a significant effect on the licensee's incentive to mount a validity challenge. Most other commentators tend to agree that *Lear* did not concern a no challenge clause. *E.g.*, Taylor, *supra*

lower courts have cited the balance of public policy in favor of the removal of invalid patents as justification for invalidating no challenge clauses of various kinds.[62] Some commentators have argued that *Lear* does not require this result at all.[63] Second, subsequent courts and commentators alike have cited with approval the court's observation that licensees are often the only parties with economic incentives to mount a validity challenge.[64] The circumstances that affect a licensee's incentive to challenge will be discussed subsequently.

Appellate courts applied Lear's holdings to no challenge clauses in the ensuing decades.[65] There is quite a divide between the courts on their treatment of no challenge clauses. By and large, the Federal Circuit, unsurprisingly, has taken a pro-patentee approach and allowed these clauses to be enforced under various

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note 22, at 231; Brenner, *supra* note 47, at 62; Alfaro, *supra* note 32, at 1286. Miller and Gal, however, argue that one of the contractual provisions in the case effectively functioned as a no challenge clause because it "required the licensee to continue paying royalties during the pendency of the patent challenge." Miller & Gal, *supra* note 6, at 131. It is unclear whether the practical effect of this clause is such that it functions as a no challenge clause. The clause effectively reduces the payoff to the licensee for a successful challenge by the amount of royalty due during the litigation. Assuming that the patent is not nearing expiration (in which case the licensee would have few incentives to challenge the patent anyway), and the ratio between the litigation period and the remainder of the patent term (assuming that the licensee intends to renew the licensing agreement all the way up to patent expiration) is not very high, there is no reason to believe that the reduction in payoff should have a significant effect on the licensee's incentive to mount a validity challenge. Most other commentators tend to agree that *Lear* did not concern a no challenge clause. *E.g.*, Taylor, *supra* note 22, at 231; Brenner, *supra* note 47, at 62; Alfaro, *supra* note 32, at 1286.

[62] *See, e.g.*, Massillon-Cleveland-Akron Sign, 444 F.2d at 428 ("If a patent holder can exact from another a promise not to infringe, and thereby recover from one inducing the breach of that promise, in the absence of a valid patent, the patent holder is afforded more protection than the patent laws allow. The patent holder acquires this additional protection 'merely because he (MCA here) chose one remedy (inducement to breach a contract not to infringe) rather than another (inducement to infringe) on the same substantive issue.' Federal policy favoring free competition in ideas not meriting patent protection cannot be so easily subverted.") (internal citations omitted); Bendix Corp. v. Balax, Inc., 421 F.2d 809, 821(7th Cir. 1970) ("From all this we can only conclude that the right to estop licensees from challenging a patent is not part of the 'limited protection' afforded by the patent monopoly.").

[63] Taylor, *supra* note 22, at 231; Brenner, *supra* note 47, at 62; Alfaro, *supra* note 32, at 1286.

[64] *Bendix*, 421 F.2d at 809; *Rates Tech. v. Speakeasy, Inc.*, 685 F.3d 163 (2d Cir. 2012); Miller & Gal, supra note 6, at 137 ("Patent licensees are in a special position to perform this role. Their practical experience with the subject matter of the patent often places them in a good position to evaluate the novelty of the invention. They might also have an incentive to challenge the patent to avoid paying royalties to the patent holder.").

[65] *See generally* Taylor, *supra* note 22, at 235-41.

circumstances.[66] The other circuits have tended to take a more hostile attitude toward these clauses.[67] However, most cases from these courts tend to be of an older vintage, and judicial attitude may have since evolved.[68] The courts seem to distinguish between no challenge clauses based on the agreement they are embodied in. The exposition below will follow this practice.

2. No Challenge Clauses in Licensing Agreements

Two years after *Lear*, in *Massillon-Cleveland-Akron Sign Co. v. Golden State Advertising Co.*, the Ninth Circuit confronted a case involving an explicit no challenge clause in a settlement agreement.[69] In determining the validity of the clause, the Ninth Circuit made extensive reference to *Lear*. The court reiterated that the Supreme Court had struck the balance between state contract law and federal patent law, decisively in favor of promoting the federal patent policy of allowing the free flow of ideas that are not patented.[70] The Ninth Circuit was cognizant of the difference between the doctrine of licensee estoppel at issue in *Lear* and the no challenge clause at issue.[71] However, to the Ninth Circuit, this difference was immaterial. The court declared that "[t]he parties' contract, however, is no more controlling on this issue than is the State's doctrine of estoppel, which is also rooted in contract principles,"[72] and that the no challenge clause "is in just as direct conflict with the 'strong federal policy' referred to repeatedly in Lear, as was the estoppel doctrine and the specific contractual provision struck down in that decision."[73] Moreover, in dicta, the Ninth Circuit declared that for the purpose of the enforceability of no challenge clauses, there is

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[66] *E.g.*, *Baseload Energy, Inc. v. Roberts*, 619 F.3d 1357 (Fed. Cir. 2010); *Flex-Foot v. CRP*, 238 F.3d 1362 (Fed. Cir. 2001).

[67] Massillon-Cleveland-Akron Sign Co. v. Golden State Advertising Co., 444 F.2d 425 (9th Cir. 1971); *Bendix*, 421 F.2d 809; Warner-Jenkinson Co. v. Allied Chemical Corp., 567 F.2d 184 (1977).

[68] *Massillon-Cleveland-Akron Sign*, 444 F.2d 425; *Bendix*, 421 F.2d 809; *Warner-Jenkinson*, 567 F.2d 184.

[69] *Massillon-Cleveland-Akron Sign*, 444 F.2d 425. The two parties to the case had been involved in a patent infringement dispute, which they settled in an agreement in 1962. In the agreement, the alleged infringer acknowledged the validity of the patent and that its action had infringed the patent. It further agreed not to challenge, directly or indirectly, the validity of the patent and not to infringe the patent again in the future. The agreement did not concern any licensing activity between the patentee and the alleged infringer.

[70] *Id*. at 425.

[71] *Id.* at 426.

[72] *Id.* at 427.

[73] *Id.*

no difference between a licensing agreement and a settlement agreement.[74] The court correctly recognized that a licensing agreement can be reached under the threat of a charge of infringement.[75] It also observed that such a distinction would be "less then [sic] workable,"[76] and would open the door to easy circumvention because "it would be just as easy to couch licensing arrangements in the form of settlement agreements."[77]

In *Bendix Corp v. Balax Inc.*, the Seventh Circuit struck down a no challenge clause in a licensing agreement that prohibited the licensees from challenging the validity of the patent even after the agreement had been terminated or lapsed.[78] The infringement defendants in that case alleged that the patentee used the no challenge clauses in the licensing agreements to "blanket" the market.[79] Citing *Lear* extensively, including the passage excerpted above, the court concluded that "the right to estop licensees from challenging a patent is not part of the 'limited protection' afforded by the patent monopoly."[80] More relevant to the purposes of this article, the court noted that the arrangement at issue should be struck down because "it creates a danger of unwarranted monopolization."[81] This danger was compounded by the fact that the obligation not to challenge extended beyond the duration of the licensing agreements.

More recently, in *Rates Technology v. Speakeasy, Inc.*,[82] the Second Circuit struck down a no challenge clause contained in a pre-litigation settlement agreement.[83] The court noted that what it was asked to do was "to balance the policy concerns of patent articulated in *Lear* against countervailing policy concerns that favor requiring parties to adhere to the terms of agreements resolving their

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[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] *Id.*
[78] Bendix Corp. v. Balax Inc., 421 F.2d 809 (7th Cir. 1970).
[79] *Id.* at 820.
[80] *Id.*
[81] *Id.*
[82] Rates Tech., Inc. v. Speakeasy, Inc., 685 F.3d 163 (2d Cir. 2012).
[83] The patentee plaintiff discovered an alleged infringement by the defendants and entered into a settlement agreement styled as a "Covenant Not to Sue" in 2007. After the entry of the agreement and a series of corporate transactions, the plaintiff patentee discovered continual infringement by the defendants and brought suit. In response one of the defendants sought a declaratory judgment action declaring that the plaintiff's patents were invalid. In a suit that eventually led to the appeal to the Second Circuit, the plaintiff alleged breach of contract by the defendants for violating the no challenge clause. *See generally id.*

legal disputes."[84] Citing *Massillon-Cleveland-Akron Sign Co.* with approval, the court observed that "allowing such no-challenges whenever a license agreement is cast as a 'settlement' could 'close the doors of the courts to a large group of parties who ha[ve] sufficient interest in the patent to challenge its validity,' [internal citation omitted] and thereby render Lear's prohibition of licensee estoppel—a prohibition that the Supreme Court held was required by strong public policy considerations—a dead letter."[85]

Importantly, while acknowledging that "the important policy interests favoring the settlement of litigation *may* support a different rule with respect to no-challenge clauses in settlements entered into after the initiation of litigation,"[86] the court held that "enforcing no-challenge clauses in pre-litigation settlements would significantly undermine the 'public interest in discovering invalid patents.'"[87] Despite the court's reference to the initiation of litigation, the court pronounced that the crucial watershed between enforceability and unenforceability is the conduct of discovery. No challenge clauses contained in a settlement agreement entered into after discovery would be enforceable, while those in a settlement agreement entered into prior to discovery would be void. To the court, discovery serves two important purposes:

> First, it suggests that the alleged infringer has had a full opportunity to assess the validity of the patent, and is therefore making an informed decision to abandon her challenge to its validity. Second, the fact that parties have conducted discovery is evidence that they had a genuine dispute over the patent's validity, and that the patent owner is not seeking to prevent its monopoly from being challenged by characterizing ordinary licensing agreements as settlement agreements.[88]

Because, as mentioned earlier, it is often impossible to draw the line between a pre-litigation settlement agreement and a licensing agreement,[89] the

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[84] *Id.* at 171.
[85] *Id.*
[86] *Id.* at 172.
[87] *Id.*
[88] *Id.*
[89] While the timing between a pre-litigation settlement agreement and a licensing agreement may be difficult to distinguish, one may argue that the two differ by the presence or absence of a licensing arrangement. There need not be a licensing arrangement in a settlement agreement; the alleged infringer may merely agree to cease infringing activities. Meanwhile, a licensing agreement by definition must contain a licensing arrangement. This attempt at differentiation

court's conclusion effectively means that no challenge clauses in licensing agreements are unenforceable.

The position on no challenge clauses in licensing agreements would have been quite clear but for the Federal Circuit's decision in *Baseload Energy, Inc. v. Roberts*.[90] The court stated in dicta that "[i]n the context of settlement agreements, as with consent decrees, clear and unambiguous language barring the right to challenge patent validity in future infringement actions is sufficient, even if invalidity claims had not been previously at issue and had not been actually litigated."[91] The court made this statement while trying to distinguish the facts of the instant case from a prior case, *Flex-Foot v. CRP*.[92] In *Flex-Foot*, the alleged infringer had challenged patent validity, had had an opportunity to conduct discovery regarding validity, and had agreed voluntarily to dismiss the suit with prejudice in a settlement agreement containing a clear and unambiguous no challenge clause.[93] In *Baseload Energy*, the Federal Circuit argued that the exact factual circumstances need not be replicated for a no challenge clause to be upheld.[94] The focus seems to have shifted from the existence of prior litigation and prior opportunity to conduct discovery, which would have aligned the Federal Circuit with the Second Circuit, to the existence of clear and unambiguous language barring future validity challenges. This opens the possibility that the Federal Circuit would uphold a clear and unambiguous no challenge clause contained in a licensing agreement in the absence of any pending or ongoing litigation.

3. No Challenge Clauses in Settlement Agreements

The appellate courts have gone in different directions in their treatment of no challenge clauses contained in a settlement agreement. There seems to be some consensus that the dividing line for enforceability is whether the settlement

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would be highly problematic for two reasons. First, settling parties that desire to enter into a licensing arrangement can easily circumvent the rule by inserting the no challenge clause in a settlement agreement while entering into a separate licensing agreement. Second, as a matter of policy, once one repudiates the rationale of licensee estoppel, it is unclear why the presence or absence of a licensing arrangement should have any bearing on the enforceability of a no challenge clause. Therefore, a better argument is that for the purpose of enforceability of no challenge clauses, pre-litigation settlement agreements and licensing agreements are to be treated the same.

[90] Baseload Energy, Inc. v. Roberts, 619 F.3d 1357 (Fed. Cir. 2010).

[91] *Id*. at 1363.

[92] Flex-Foot v. CRP, 238 F.3d 1362 (Fed. Cir. 2001).

[93] *Id.* at 1363-64.

[94] *Baseload Energy*, 238 F.3d at 1363.

agreement was entered into before or after discovery, or expense of substantial judicial resources. However, a number of cases deviate from this consensus. There are cases that held, or at least proclaimed, that no challenge clauses would be deemed unenforceable regardless of whether they are incorporated in a licensing agreement or a settlement agreement. There are also cases in which the court refused to enforce a no challenge clause, or at least something similar to it, contained in a settlement agreement entered into after discovery. Finally, there are also cases in which the court enforced a no challenge clause in a settlement agreement entered into prior to discovery.

A number of appellate decisions that have dealt with the enforceability of no challenge clauses in settlement agreements have upheld them so long as the settlement agreement was entered into after discovery. As mentioned, the Second Circuit in *Rates Technology* held that the dividing line for enforceability is discovery. In *Aro Corp. v. Allied Witan Co.*,[95] the Sixth Circuit enforced a no challenge clause in a settlement agreement entered into after discovery. Although the court did not explicitly designate discovery as the dividing line as the Second Circuit did in *Rates Technology*, it noted that *Lear* "cannot be interpreted so broadly as to condone a kind of gamesmanship, wherein an alleged infringer, after employing the judicial system for months of discovery, negotiation and sparring, abandons its challenge to validity, executes a license in settlement, and then repudiates the license and seeks to start the fight all over again in the courts."[96] The Federal Circuit has also consistently upheld no challenge clauses in settlement agreements that were entered into after discovery. *Hemstreet v. Spiegel, Inc.* did not concern an explicit no challenge clause.[97] It instead involved a provision that required the licensee to continue to pay royalty even after the patent had been otherwise invalidated, which in monetary terms functioned similarly as a no challenge clause. The Federal Circuit upheld the provision on the grounds of furthering settlement of lawsuits, despite the fact that the patent had been found unenforceable in a separate proceeding.[98] As noted earlier, in *Flex-Foot, Inc. v. CRP, Inc.*, the Federal Circuit upheld a no challenge clause in a settlement agreement entered into after discovery between two parties to an existing license.

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[95] Aro Corp. v. Allied Witan Co., 531 F.2d 1368 (6th Cir. 1976).

[96] *Id.* at 1373. The Court did not emphasize the fact that discovery gave the settling parties sufficient information to make an informed decision. Instead, the Court believed that defendant had taken up so much judicial resources that it should not be given a second chance. *Id.*

[97] Hemstreet v. Spiegel, Inc., 851 F.2d 348 (Fed. Cir. 1988).

[98] *Id.* at 350.

The three cases that do not conform to this rough consensus were Massillon-Cleveland-Akron Sign Co. v. Golden State Advertising Co., Warner-Jenkinson Co. v. Allied Chemical Corp.,[99] and Baseload Energy, Inc. v. Roberts. However, it is possible to reconcile the first two cases with the general rule that discovery is the dividing line for enforceability. In Massillon-Cleveland-Akron Sign Co., the Ninth Circuit did indicate in dicta that no challenge clauses would be deemed unenforceable regardless of whether they are incorporated in a licensing agreement or a settlement agreement.[100] It is nonetheless important to note that the no challenge clause at issue in the case, which the court refused to enforce, was contained in a settlement agreement entered into prior to the commencement of litigation.[101]

In *Warner-Jenkinson*, the Second Circuit struck down a clause that prohibited a licensee from terminating the license for two years on the grounds that the licensee should be able to terminate the license if she successfully challenges the patent's validity.[102] While the clause was contained in an agreement reached by the parties after discovery in a prior litigation, the Court nonetheless refused to uphold it. However, this does not mean that the Court's holding is inconsistent with the general rule. In fact, the Court noted that if the agreement had contained an explicit no challenge clause, the Court may have felt compelled to give effect to it.[103] The Court merely observed that the *Lear* decision cautions against reading an explicit no challenge clause into an ambiguous clause such as the one at issue in the case.[104] Therefore, one may perhaps treat this case as not being applicable to explicit no challenge clauses at all.

Perhaps the one true anomaly among the three cases is *Baseload Energy*. In this case, the declaratory judgment defendant sought to enforce a claim release clause, under which the plaintiff has relinquished all present and future claims against the defendant, against the plaintiff.[105] The Federal Circuit ruled against the

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[99] Warner-Jenkinson Co. v. Allied Chemical Corp., 567 F.2d 184 (2d Cir. 1977).

[100] Massillon-Cleveland-Akron Sign Co. v. Golden State Advertising Co., 444 F.2d 425, 427 (9th Cir. 1971).

[101] *Id.*

[102] *Warner-Jenkinson*, 567 F.2d at 188.

[103] *Id.*

[104] *Id.*

[105] Baseload Energy, Inc. v. Roberts, 619 F.3d 1357 (Fed. Cir. 2010).The parties had entered into a joint venture to develop some wind energy projects. The parties had reached an oral agreement concerning the terms of operation, but the joint venture broke down and one of the parties brought suit claiming breach of contract, fraud, and promissory estoppel. The parties settled the suit with an agreement which stipulated that both parties would release all claims

defendant, stating that the claim release clause did not specifically refer to invalidity issues and therefore could not be used to bar validity challenges.[106] However, in responding to the plaintiff's argument that the claim release clause should not bar its declaratory judgment action because the settlement agreement was not entered into after discovery and extensive court proceeding, the Court asserted that the absence of prior dispute or litigation as to invalidity is not dispositive of the enforceability issue.[107] If there was no prior dispute concerning invalidity, there clearly would have been no discovery on the issue. The Court implicitly noted that prior discovery on patent validity is not determinative of enforceability of no challenge clauses in settlement agreements.[108]

4. No Challenge Clauses in Consent Decrees

Given that this article will not focus on no challenge clauses in consent decrees, the discussion here will be brief. A few Federal Circuit cases can be interpreted as holding that a consent decree, which stipulates patent validity, bars future validity challenges absent express reservation of the right to launch such challenges. A majority of the appellate courts, however, have held that a consent decree (or a settlement agreement accompanied by a dismissal with prejudice) that stipulates patent validity and infringement precludes future validity challenges.[109]

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against each other arising from any aspect of the venture. Their relationship broke down again, and one of the parties brought a declaratory judgment action, claiming that the patent that was to form the basis of the venture was invalid.

[106] *Id.* at 1363 (holding that clause did not contain clear and unambiguous language barring future validity challenges).

[107] *Id.*

[108] *Id.* ("In the context of settlement agreements, as with consent decrees, clear and unambiguous language barring the right to challenge patent validity in future infringement actions is sufficient, even if invalidity claims had not been previously at issue and had not been actually litigated.")

[109] Wallace Clark & Co. v. Acheson Indus., 532 F.2d 846, 849 (2d Cir. 1976) ("We conclude that the interests of litigants and the public in general will be best served by according res judicata effect to consent decrees adjudicating a patent's infringement as well as its validity."); American Equipment Corp. v. Wikomi Manufacturing Co., 630 F.2d 544, 548 (7th Cir. 1980) (noting that enforcing no challenge clauses in consent decrees is "the most effective way to enforce the Lear policy of facilitating competitive access to ideas".); Schlegel Mfg. Co. v. USM Corp., 525 F.2d 775, 780 (6th Cir. 1975) (noting that "there is a significant difference between the effect of a consent decree and the doctrine of licensee estoppel" in upholding no challenge clauses in consent decrees); Kraly v. National Distillers & Chem. Corp., 502 F.2d 1366, 1370 (7th Cir. 1974) (noting that federal patent policy "must occupy a subsidiary position to the fundamental policy favoring the expedient and orderly settlement of disputes and the fostering of judicial economy").

In other words, a no challenge clause stipulated in such a consent decree would be enforceable.

5. Termination-Upon-Challenge Clauses

The courts' attitudes toward termination-upon-challenge clauses is similar to that toward general no challenge clauses, in that the Federal Circuit holds a more lenient position than the other circuits. In *Crane Co. v. Aeroquip Corp.*, the Seventh Circuit held termination-upon-challenge clauses to be unenforceable on the grounds that under *Lear*, "[d]efendant was within its rights to test validity after entering into the consent judgment of validity."[110] However, in *C.R. Bard, Inc. v. Schwartz*, the Federal Circuit implicitly held that a licensor can terminate the licensing agreement when a licensee sues to declare the patent invalid and ceases to pay royalty.[111] Despite the slightly complex facts in *Schwartz*, commentators have argued that in so ruling, "the Federal Circuit effectively held that license provisions which give licensors the right to terminate licenses are enforceable when licensees bring validity challenges and cease making royalty payments."[112] Taylor argues that Federal Circuit case law such as *Cordis Corp. v. Medtronic, Inc.* lends further support to the notion that termination-upon-challenge clauses should be enforceable.[113] The gist of the Federal Circuit's approach is that while *Lear* requires the courts to allow the licensee to challenge the validity of the patent, the licensee should not be spared of the consequences of a validity challenge.[114] The licensee should not be allowed to launch a validity challenge while continually enjoying the benefit of the licensing agreement. The implication would be that the patentee should be allowed to terminate the licensing agreement, at least when the licensee also ceases to pay royalty.[115] If termination-upon-challenge clauses are more likely to be upheld by the courts and are equally effective in deterring validity challenges, one may see them incorporated in licensing and settlement agreements more often, and they may end up featuring more prominently in antitrust cases.

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[110] Crane Co. v. Aeroquip Corp., 504 F.2d 1086, 1092 (7th Cir. 1974).

[111] C.R. Bard, Inc. v. Schwartz, 716 F.2d 874 (Fed. Cir. 1983).

[112] Taylor, *supra* note 22, at 249.

[113] *Id.* at 250-51.

[114] Miller & Gal, *supra* note 6, at 133.

[115] It would be interesting to see is whether a patentee can contractually stipulate a right to terminate the licensing agreement when a licensee launches a validity challenge while still paying royalty. That would give the patentee an unqualified right to terminate the licensing agreement, as opposed to under *Schwartz*, where the licensee could still try to maintain the licensing agreement by continuing to pay royalty.

B. The European Union

Unlike the U.S., the EU has dealt with no challenge clauses under competition law. Given the fact that patent law is still largely national law in the EU, relegating the treatment of no challenge clauses to patent law, like it has been done in the U.S., could result in a variety of approaches. A review of the EU approach to no challenge clauses entails an examination of both the case law of the European courts and the European Commission's TTBER. On the whole, it is fair to say that both the European courts and the European Commission have taken a fairly hardline approach toward no challenge clauses, even though their approaches, especially that of the Commission, have evolved over time.

1. The European Courts

The European Court of Justice (ECJ), now renamed the Court of Justice of the European Union (CJEU), encountered no challenge clauses in *Windsurfing International v. Commission*.[116] In that case, the patentee imposed an express no challenge clause on its licensees, which the European Commission challenged as being incompatible with Article 101(1) (then Article 85(1)) of the TFEU. The ECJ condemned the clause in summary fashion, without an examination of competitive effects. Although the court stopped short of ruling that no challenge clauses restrict competition by object, it did hold that no challenge clauses infringe Article 101(1) because of the overriding public interest in removing invalid patents, without any regard to possible competitive effects.[117] The court further concluded that the clause did not benefit from the exemption under Article 101(3).[118] Using U.S. antitrust parlance, commentators have remarked that the ECJ in *Windsurfing* condemned the no challenge clause as illegal per se.[119]

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[116] Case C-193/83 Windsurfing Int'l, Inc. v. Commission, 1986 E.C.R. 611.

[117] *Id.* at 663.

[118] The result in this case is all the more remarkable because the validity of the patent at issue had been closely examined by the German courts and no licensees had brought a validity challenge after the clause had been dropped in response to Commission action. Orstavik, *supra* note 7, at 103. In other words, the ECJ condemned a no challenge clause when the underlying patent was in all likelihood valid and when it was clear that none of the licensees had been prevented by the clause from bringing challenges as none had the incentive to do so. *Windsurfing Int'l*, E.C.R. 611 at 664. This is practically tantamount to saying that no challenge clauses are illegal even though their incorporation into a licensing agreement has no impact on eventual patent validity or licensee incentive to challenge.

[119] Orstavik, *supra* note 7, at 103; P. Sean Morris, *Patent Licensing and No Challenge Clauses: A Thin Line Between Article 81 EC Treaty and the New Technology Transfer Block Exemption Regulation*, 3 INTELL. PROP. Q. 217, 221-22 (2009).

The ECJ modified its position on no challenge clauses in a subsequent case, *Bayer v. Süllhöfer*.[120] The court began its discussion by rejecting the Commission's two arguments. First, the court rejected the argument that no challenge clauses are, in principle, to be considered a restriction of competition under Article 101(1). Second, the court disagreed with the Commission's argument that these clauses can be compatible with Article 101(1) if they are incorporated in a settlement agreement and some further conditions are met. The ECJ held that as far as no challenge clauses are concerned, it makes no difference whether they are in a licensing agreement or a settlement agreement.[121] Instead, the court held that one must take into account "the legal and economic context" in determining the legality of these clauses.[122] The court proceeded to enumerate two circumstances in which no challenge clauses would be permissible: (1) when the license that contains a no challenge clause is free, which means that the licensee does not suffer from the competitive disadvantage of royalty payment, and (2) "when the licence relates to a technically outdated process which the licensee undertaking did not use."[123]

In the more recent *Huawei Technologies v. ZTE Corp.* case,[124] the CJEU had another opportunity to discuss the importance of the right of a licensee to challenge the validity of the licensed patent. In this case, Advocate General Wathelet stated in his opinion that:

> [I]t is in the public interest for an alleged infringer to have the opportunity, after concluding a licensing agreement, to challenge the

[120] Case 65/86, Bayer AG v. Süllhöfer, 1988 E.C.R. 5249.

[121] *Id.* at 5286. However, the ECJ reserved the question of whether no challenge clauses are illegal if they are incorporated in a consent decree.

[122] *Id.*

[123] *Id.* The ECJ's articulation of the first exception reveals a misunderstanding of the competitive harm of no challenge clauses and represents a peculiar and unexplained departure from the rationale articulated in *Windsurfing* for condemning no challenge clauses. The ECJ seemed to believe that no challenge clauses harm competition because they prevent licensees from extricating themselves from a royalty payment obligation if the patent turns out to be invalid. They deprive the licensees of an opportunity to challenge the patent. However, that is not the reason why no challenge clauses harm competition. Instead, they harm competition because they allow the patentee artificially to maintain the market power that it may have obtained from an invalid patent, when the patentee should be entitled to no such market power. In *Windsurfing*, the rationale for invalidating no challenge clauses is the public interest in clearing the market of invalid patents. Here, the rationale seems to have shifted to protecting licensees from unjustified royalty payments.

[124] Case C-170/13, Huawei Technologies Co. v. ZTE Corp., 2015 Curia ECLI:EU:C:2015:477 (July 16, 2015).

> validity of an SEP (as ZTE did). As the Commission has pointed out, the wrongful issue of a patent may constitute an obstacle to the legitimate pursuit of an economic activity. Moreover, if undertakings supplying standard-compliant products and services cannot call into question the validity of a patent declared to be essential to that standard, it could prove effectively impossible to verify the validity of that patent because other undertakings would have no interest in bringing proceedings in that regard.[125]

This case has the added dimension of involving standard-essential patents ("SEPs"), which have more serious competitive implications because they tend to possess substantial market power. Echoing the U.S. Supreme Court's observation in *Lear*, Advocate General Wathelet speculated that licensees may be the only party with the incentive to challenge the validity of a patent.[126] The CJEU agreed with Advocate General Wathelet, and stated in its judgment that:

> [H]aving regard, first, to the fact that a standardisation body such as that which developed the standard at issue in the main proceedings does not check whether patents are valid or essential to the standard in which they are included during the standardisation procedure, and, secondly, to the right to effective judicial protection guaranteed by Article 47 of the Charter, an alleged infringer cannot be criticised either for challenging, in parallel to the negotiations relating to the grant of licences, the validity of those patents and/or the essential nature of those patents to the standard in which they are included and/or their actual use, or for reserving the right to do so in the future.[127]

Particularly noteworthy is the Court's observation that standard setting organizations ("SSOs") do not necessarily check the validity or essentiality of the patents seeking to be included in the standards.[128] In fact, most SSOs do not check the validity of the included patents.[129] Given the fact that standardization would

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[125] Case C-170/13, Huawei Technologies Co. v. ZTE Corp., 2014 Curia ECLI:EU:C:2014:2391 *95 (Nov. 20, 2014).

[126] *Id.* at *64.

[127] *Id.*

[128] Case C-170/13, Huawei Technologies Co. v. ZTE Corp., 2015 Curia ECLI:EU:C:2015:477 *69 (July 16, 2015).

[129] NATIONAL RESEARCH COUNCIL (U.S.) COMM. ON INTELL. PROP. MGM'T IN STANDARD-SETTING PROCESSES, PATENT CHALLENGES FOR STANDARD-SETTING IN THE GLOBAL ECONOMY: LESSONS FROM INFORMATION AND COMMUNICATIONS TECHNOLOGY § 7.2 (2013).

give patents a great deal of market power, the harm of allowing an invalid SEP to persist is much greater than for a non-SEP.

2. The European Commission

The European Commission has had significant influence over the licensing practices of European patent holders. Patentees usually try to steer clear of what the Commission deems to be impermissible licensing practices to take advantage of the legal certainty provided by the TTBER.[130] The Commission's view of no challenge clauses has evolved over time. In 2014, the European Commission issued the most recent set of TTBER.[131] In these regulations, the Commission revised its position on no challenge clauses, which continue to be an excluded restriction, meaning they will not automatically benefit from the block exemption and their compatibility with the Treaty will have to be individually assessed.[132] However, termination-upon-challenge clauses are now classified as an excluded restriction as well, which previously were not under the 2004 TTBER, except when incorporated in an exclusive license and the market share thresholds provided in Article 3 of the TTBER are met.[133] In the accompanying guidelines, the Commission asserted that no challenge clauses are likely to fall within Article 101(1) when the licensed technology is valuable, and therefore creates a competitive advantage for the licensees.[134] In such a case, a no challenge clause is unlikely to meet the conditions for Article 101(3).[135] This means that it would be outright illegal, which is reminiscent of the ECJ's position in *Windsurfing*. Finally, the Commission incorporated the two exceptions provided by the ECJ in *Bayer v. Süllhöfer*.[136]

In the 2014 TTBER, the Commission made two major changes to its position on no challenge clauses. First, it took a slightly more cautious approach to no challenge clauses in settlement agreements.[137] After repeating its previous

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[130] Lawrence, *supra* note 5, at 811.

[131] *Id*. at 810.

[132] 2014 TTBER, *supra* note 51, at art. 5(1)(b).

[133] *Id*. Article 3 provides that the exemptions provided in the TTBER apply when the aggregate market share of parties to an agreement which share a horizontal relationship is no more than 20%, and that of parties which share a vertical relationship is no more than 30%.

[134] Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements, 2015 O.J. C89/3, art. 114 [hereinafter "Guidelines on the 2014 TTBER"].

[135] *Id*. at 134.

[136] *Id.*

[137] It is important to note that the TTBER only applies to licensing agreements. Therefore, the TTBER would only apply to a settlement agreement that includes licensing provisions.

position that no challenge clauses in settlement agreements generally fall outside Article 101(1), it proceeded to caution that these clauses nonetheless could be anticompetitive under specific circumstances.[138] Second, the Commission included termination-upon-challenge clauses, except in exclusive licenses, as an excluded restriction. The Commission explained this change of position by saying that: "[s]uch a termination right can have the same effect as a non-challenge clause, in particular where switching away from the licensor's technology would result in a significant loss to the licensee … or where the licensor's technology is a necessary input for the licensee's production."[139] The key factor to consider is whether the loss of profit would act as a sufficient deterrent to challenges, which, according to the Commission, will need to be assessed on a case-by-case basis.[140]

C. China

1. Regulations and Draft Guidelines

Of the three jurisdictions surveyed in this article, China appears to take the strictest approach to no challenge clauses, as evidenced in the decisional practices of Chinese enforcement authorities. This may reflect a strategic concern that most of China remains a net importer of foreign technologies.[141] A more pro-licensee approach would stand to benefit Chinese companies. The three Chinese enforcement authorities, the NDRC, the SAIC, and the Ministry of Commerce,[142]

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[138] Guidelines on the 2014 TTBER, *supra* note 134, at 243. The Commission raised the example of when the intellectual property right was granted following the submission of incorrect or misleading information and when the technology rights are a necessary input in the licensee's production.

[139] *Id*. at art. 136.

[140] *Id*. As examples of such a possible case, the Commission mentioned situations when the patents being licensed are standard-essential and when the licensed technology has a very significant market position.

The Commission further justified the special treatment for termination-upon-challenge clauses in an exclusive licensing agreement on the grounds that "the incentives for innovation and for licensing out could be undermined if, for example, the licensor were to be locked into an agreement with an exclusive licensee which no longer makes significant efforts to develop, produce and market the product (to be) produced with the licensed technology rights." *Id*. at 139. An alternative to allowing termination-upon-challenge clauses is to allow the patentee to cancel the exclusivity provision, which would solve the problem of a patentee being locked in by an uncooperative licensee.

[141] Hejing Chen & John Whalley, *China's Post-1978 Growth Process and Earlier Growth Processes of Europe, US, Japan, and Korea, in* WORLD SCIENTIFIC REFERENCE ON ASIA AND THE WORLD ECONOMY VOL. 2, 44 (Manmohan Agarwal & John Whalley eds).

[142] MOFCOM is responsible for merger reviews and therefore probably has less to do with no challenge clauses. The NDRC and the SAIC share responsibility in conduct enforcement.

are reportedly drafting the IP-Competition Guidelines under the auspices of the Anti-Monopoly Commission, which is an advisory body in the State Council overseeing and coordinating enforcement activity by the three authorities.[143] This article will make reference to the approach to no challenge clauses in the consultative drafts released by the NDRC and the SAIC. It will also refer to the *Regulation on the Prohibition of Conduct Eliminating or Restricting Competition by Abusing Intellectual Property Rights* released by the SAIC in April 2015 ("the "SAIC Regulation").[144] The SAIC Regulation also contains some discussion of no challenge clauses.[145] Lastly, and most importantly, in February 2015, the NDRC found that Qualcomm had abused its dominance through a variety of licensing practices, including imposing no challenge clauses on its licensees.[146] Qualcomm was fined RMB6 billion (approximately USD1 billion).[147] An examination of the decision will shed light on the prevailing Chinese approach to no challenge clauses.

Article 10 of the SAIC Regulation stipulates that a business operator with a dominant market position should not, without legitimate reasons, prohibit transaction counterparties from raising doubts about the validity of its intellectual property rights, thereby eliminating or restricting competition.[148] Although the article uses the phrase "raising doubts about", it probably refers to launching a validity challenge. Otherwise, the language is so impermissibly broad that the SAIC could not have reasonably contemplated that interpretation.

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[143] The current approach is that each of the authorities will come up with its own draft and the Anti-Monopoly Commission will be responsible for combining them. As of the time of writing, the NDRC and SAIC have released consultative drafts, which are likely to be similar to their final drafts. The expectation is that the final combined product will be released in June.

[144] Provisions on Prohibiting the Abuse of Intellectual Property Rights to Exclude and Restrain Competition, *supra* note 53.

[145] *Id.* at art. 10.

[146] National Development and Reform Commission Administrative Penalty Decision [2015] No. 1, Feb. 9, 2015, http://jjs.ndrc.gov.cn/fjgld/201503/t20150302_666170.html (hereinafter "Qualcomm Decision").

[147] *Id.*

[148] *Id.* at art. 10. One notable feature about SAIC's approach to no challenge clauses is that instead of treating them as a potential restrictive agreement, the focus is on treating them as an abuse of dominance. The implicit recognition seems to be that no challenge clauses would not cause competitive harm unless they are imposed by a firm with substantial market power. Whether the amount of market power necessary to create competitive harm must reach the level of dominance is open to debate, but it will be clear from subsequent discussion that market power is necessary for no challenge clauses to inflict competitive harm.

A few distinctions are key to understanding Article 10. First, the provision refers to transactional counterparty and not licensee. Therefore, it probably has a broader reach than the EU TTBER, and could potentially cover buyers of products that incorporate the patented technology in addition to licensees. Second, the provision is worded in such a way that it seems to require a demonstration of a restriction of competition before a no challenge prohibition will be outlawed. If this is true, it appears that the SAIC has not adopted a per se approach to no challenge clauses, and may be more lenient with them than the European Commission. However, it is not clear how much importance should be attached to the language "elimination or restriction of competition". There have been cases in the past in which the enforcement authorities' guidelines indicated that the conduct at issue requires a showing of competitive effects, but the authorities did not make such a showing in their decisions. Third, the provision does provide for the possibility of justification by way of "legitimate reasons," even though it stops short of defining these reasons. This may be further evidence that the SAIC does not adopt a per se approach. Finally, the provision refers only to a prohibition of challenges by transactional counterparties. At least on a literal interpretation, it does not seem to cover provisions such as termination-upon-challenge clauses or higher royalty-upon-challenge clauses that stop short of outright prohibiting challenges, but merely create hurdles for them. The seventh consultative draft of the IP-Competition Guidelines issued by the SAIC by and large repeats the same language as the SAIC Regulation regarding no challenge clauses.[149]

The NDRC draft IP-Competition Guidelines ("NDRC Guidelines") provide more detail on no challenge clauses.[150] The first notable feature about these guidelines is that no challenge clauses are discussed under both the restrictive agreements section and the abuse of dominance section.[151] In the restrictive agreements section, the guidelines provide a relatively detailed discussion about these clauses. Article 2(1)(3) begins by acknowledging that no challenge clauses can serve the useful purposes of preventing excessive litigation and improving

[149] Guanyu Lanyong Zhishi Chanquan de Fanlongduan Zhifa Zhinan (Guojia Gongshang Zhongju Diqigao) (关于滥用知识产权的反垄断执法指南（国家工商总局第七稿）) [Guidelines on Anti-Monopoly Enforcement against Abuse of Intellectual Property Rights (SAIC Seventh draft) (released by State Admin. of Trade and Com., Feb 4, 2016) (on file with author).

[150] Guowuyuan Fanlongduan Weiyuanhui Guanyu Lanyong Zhishi Chanquan de Fanlongduan Zhinan (Zhengqiu Yijiangao) (国务院反垄断委员会 关于滥用知识产权的反垄断指南（征求意见稿) [State Council Anti-Monopoly Commission Anti-Monopoly Guidelines on Abuse of Intellectual Property Rights (consultative draft)] (released by Nat'l Dev. and Reform Comm'n, Dec. 31, 2015) (on file with author) (hereinafter "NRDC Guidelines").

[151] *Id.* at art. 2(1)(3) & art. 3(2)(4).

transactional efficiency.[152] The section then proceeds to assert that these clauses can also restrict competition, which is to be determined with reference to a number of factors, including: (1) whether the patentee imposes the no challenge clause on all licensees, (2) whether the underlying patent is being licensed for royalty and whether the patent may constitute entry barriers into the downstream market, (3) whether the underlying patent blocks the implementation of other competing patents, (4) whether the patentee obtained the patent by providing false or misleading information, and (5) whether the patentee compels the licensee to accept the no challenge clause through improper means.[153] In the abuse of dominance section, Article 3(2)(4) merely lists the prohibition of licensees from challenging the licensor's patent as a prohibited unreasonable licensing condition, without any explanation of the relevant factors to be considered.[154] It is not entirely clear what explains the different treatment of no challenge clauses in the two sections. It may mean that if these clauses are treated as an abuse of dominance, the analytical process is simpler and there is no need to resort to the factors listed in Article 2(1)(3). Alternatively, it may simply mean that the factors listed in Article 2(1)(3) are tacitly incorporated in Article 3(2)(4). The latter explanation seems to make more sense, as there is no reason why different analytical factors are considered when no challenge clauses are treated as a restrictive agreement as opposed to an abuse of dominance.

2. The NDRC Qualcomm Decision

Apart from the SAIC Regulation and these draft guidelines, there has been one enforcement action that concerns no challenge clauses. In the NDRC's decision against Qualcomm released in February 2015, one of the four claims raised by the NDRC is the imposition of unreasonable conditions on the sale of the baseband chips used in mobile communication terminals.[155] One of the unreasonable conditions is that Qualcomm will terminate the supply of chips if the licensee initiates litigation against it,[156] which the NDRC characterizes as a no challenge clause.[157] Because Qualcomm stopped short of outright prohibiting

[152] *Id*. at art. 2(1)(3).

[153] *Id.*

[154] Similar to the SAIC Regulation, Article 3(2)(4) of the draft NDRC Guidelines only refers to outright prohibition. Therefore, it is again not clear whether it encompasses challenge-penalty clauses. In contrast, Article 2(1)(3) refers to no challenge clauses in general. Although the NDRC Guidelines do not define no challenge clauses, the general reference means that it may encompass challenge-penalty clauses as well.

[155] Qualcomm Decision, *supra* note 146.

[156] *Id.*

[157] *Id.*

licensees from initiating litigation,[158] the provision was, at most, a challenge-penalty clause. However, the NDRC was convinced that cessation of supply was enough of a deterrent to Qualcomm's customers, the terminal manufacturers, and thus, practically functioned as an outright prohibition.[159] Qualcomm admitted to the imposition of no-challenge clauses in the licensing agreements, but argued that its conduct was justified. The NDRC did not detail what the justifications were, but dismissed them as insufficient. According to the NDRC, it is within the licensee's' right to challenge patent validity or institute litigation with respect to the licensing agreements.[160] Qualcomm's imposition of no-challenge clauses restricted, if not outright deprived, the licensees of this right. Moreover, the NDRC argued that competition was restricted when potential licensees that were unwilling to accept the no-challenge clauses were excluded from the market.[161]

The NDRC did not consider the competitive effects of no challenge clauses except by saying that licensees that are unwilling to accept the unreasonable licensing terms would be excluded from the market.[162] However, that would be tantamount to saying that any time Qualcomm turns away a potential licensee, there is restriction of competition. The NDRC's alternative argument that no challenge clauses infringe upon the licensee's right to challenge patent validity effectively means that these clauses are illegal on their face. It would therefore seem that the NDRC's approach to no challenge clauses is stricter than that manifested in the SAIC Regulation and possibly in line with the approach taken in the 2014 TTBER.

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[158] *Id.*

[159] *Id.*

[160] *Id.* (noting that initiating litigation over licensing agreement is licensee's right).

[161] This characterization of restriction of competition is highly problematic. Restriction of competition cannot be established simply on the grounds that Qualcomm offered some licensing terms which were unacceptable to some licensees. The corollary of this argument would be that Qualcomm would be expected to accept whatever terms its licensees are willing to offer. This certainly cannot be the case. What stops a potential licensee from arguing that competition is restricted when it fails to obtain a license because the licensee is unwilling to pay the license fee Qualcomm demands? Whether there is restriction of competition crucially depends on whether the licensing term demanded by Qualcomm is itself anticompetitive, which is what needs to be established in the analysis. The NDRC merely states that the clause denies the licensees their right to challenge the validity of the licensing agreements. Such a right-based argument fails to consider the competitive effects of the clause. The NDRC's analysis is thus found wanting.

[162] Qualcomm Decision, *supra* note 146 (noting that those unwilling to accept Qualcomm's licensing terms were excluded from market).

III
CONSUMER HARM OF NO CHALLENGE CLAUSES

In light of the differing approaches to no challenge clauses taken in these three jurisdictions, it is worth considering what the correct approach to these clauses should be. While the U.S. has largely regulated no challenge clauses under patent law, the EU and China have expressly subjected no challenge clauses to competition law. Nothing in U.S. antitrust law says that no challenge clauses are exempted from antitrust scrutiny. Nonetheless, as far as this author is aware, U.S. courts have not had the opportunity to rule on their legality under antitrust law. No challenge clauses also received no mention in the 1995 DOJ-FTC IP-Antitrust Guidelines.[163] There was brief mention of these clauses in the report issued by the DOJ and the FTC on IP-antitrust issues in 2007,[164] which states that "[i]nvalid patents impair competition, and as a matter of patent policy, challenges to their validity are encouraged."[165] It is noteworthy that the report cited to *Lear, Inc. v. Adkins* and *MedImmune Inc. v. Genentech, Inc.*, and not an antitrust case, as support for this statement. The report further refers to the Solicitor General's brief in *MedImmune* for the observation that "public policy strongly favors ridding the economy of invalid patents, which impede efficient licensing, hinder competition, and undermine incentives for innovation."[166] There is no allusion to consumer harm resulting from these clauses. Therefore, no challenge clauses are viewed through the lens of patent policy as opposed to antitrust policy. Meanwhile, the seemingly strict approach to no challenge clauses under EU and Chinese competition law would suggest that these two jurisdictions believe that these clauses can inflict considerable consumer harm that warrants the scrutiny of competition law.

Therefore, the first question to consider is whether no challenge clauses inflict harm on consumers. A short answer is that they do. Commentators have noted that no challenge clauses can create consumer harm under certain circumstances. Morris notes that "[t]he competitive harm associated with a no-challenge clause involves the risk that invalid intellectual property rights give their holders market power that is not justified by the policies underlying those rights.

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[163] US DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (1995), http://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/0558.pdf.

[164] US DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION (2007), http://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/222655.pdf.

[165] *Id*. at 90.

[166] *Id*. at 90-91.

Such concentration of market power may lead to higher prices or lower output."[167] Likewise, Orstavik observes that under a no challenge clause, a "licensee may be obliged to pay royalties when none are justified, or the agreement may contain other restrictions that continue to apply even if the original right is invalid, thus restricting competition. Because of the obligation to pay royalties, the no-challenge clause may contribute to an artificially high price level."[168]

A. A Comparison with Reverse Payments

Reverse payments, in which the infringement plaintiff agrees to pay the defendant compensation, usually a very large sum of money, to settle the infringement suit, share important similarities with no challenge clauses. They both arise in the context of patent settlements (in no challenge clauses, also in licensing agreements), both entail the infringement defendant acknowledging the validity of the contested patent, and the legality of both practices hinge on patent validity. There are admittedly crucial differences between them, one of which being that, while reverse payments entail a large transfer from the infringement plaintiff to the infringement defendant, that need not be the case with no challenge clauses.[169] Therefore, if reverse payments have been roundly perceived to have serious anticompetitive potential—in fact, notable commentators have urged that they be held presumptively illegal[170]—no challenge clauses should at least deserve some antitrust scrutiny.

While acknowledging the similarities between reverse payments in pharmaceutical settlements[171] and licensing agreements, which may contain no

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[167] Morris, *supra* note 119, at 220.

[168] Orstavik, *supra* note 7, at 102.

[169] Einer Elhauge & Alex Krueger, *Solving the Patent Settlement Puzzle*, 91 TEXAS L. REV. 283, 284 (2012)

[170] Herbert Hovenkamp, Mark Janis & Mark A. Lemley, *Anticompetitive Settlement of Intellectual Property Disputes*, 87 MINN. L. REV. 1719 (2003); Elhauge & Krueger, *supra* note 169; Michael A. Carrier, *Unsettling Drug Patent Settlements: A Framework for Presumptive Illegality*, 108 MICH. L. REV. 3 (2009).

[171] Reverse settlements, also known as pay-for-delay agreements, are settlement agreements, usually arising in the pharmaceutical industry, in which the patentee pays the potential infringer to settle the lawsuit. Because of the unusual direction of payment—one would usually expect the potential infringer to pay the patentee in a normal settlement agreements, reverse payments have received considerable attention from the courts and commentators over the years. The Supreme Court finally decided in *FTC v. Actavis* that reverse payments are subject to antitrust law and are to be analyzed under the Rule of Reason. Fed. Trade Comm'n v. Actavis, 570 U.S. 756 (2013). For academic commentary on the appropriate treatment of reverse payments under antitrust law, see Carl Shapiro, *Antitrust Limits to Patent Settlements*, 34(2) RAND J. ECON. 391 (2003);

challenge clauses, Miller and Gal justify their disparate treatment under antitrust law. They highlight a number of major differences between reverse payments and no challenge clauses that justify the hands-off approach of U.S. antitrust law to the latter. First, licensing agreements "are ongoing, they may further social welfare … , and they are generally based on the assumption that the patent is valid, at least when the contract is signed."[172] Second, their effect on competition is different in that "[l]icensees already operate in the market, albeit with restrictions contained in their licences, so the anticompetitive harm stems from restricting the entry of third parties into the market. By contrast, in pay-for-delay agreements [reverse payments] the harm includes the prevention of entry of the potential patent challenger."[173]

There are a number of problems with Miller and Gal's arguments. First, it is not clear how distinct reverse payment agreements are from licensing agreements containing no challenge clauses. Both types of agreements are ongoing, and their legal obligations persist for the duration of the agreements. The difference is that reverse payment agreements involve ongoing inaction, where the obligation is to abstain from the market, whereas licensing agreements with no challenge clauses involve ongoing action. Here, the ongoing activity is the commercialization of the patented technology through licensing and the ongoing obligation is to refrain from mounting a validity challenge. Even if licensing agreements could be construed as more more ongoing in nature than reverse payment agreements, it is not clear what the relevance of that is to consumer harm, so long as the harm is continuous under both agreements.

Second, licensing agreements may further social welfare by encouraging the commercialization of technology, whereas the only conceivable social benefit of reverse payments is the minimization of litigation. However, the correct comparison with reverse payments are not licensing agreements, but no challenge clauses. No challenge clauses themselves do not promote the commercialization of technology (unless one argues that the patentee will not license the technology absent these clauses, which will be addressed subsequently). The only purpose they serve, like reverse payments, is the minimization of disputes over patent validity.

Murat C. Mungan, *Reverse Payments, Perverse Incentives*, 27 HARV. J. L. & TECH. 1 (2013); Daniel A. Crane, *Exit Payments in Settlement of Patent Infringement Lawsuits: Antitrust Rules and Economic Implications*, 54 FLA. L. REV. 747 (2002); Thomas F. Cotter, Commentary, *Refining the "Presumptive Illegality" Approach to Settlements of Patent Disputes Involving Reverse Payments: A Commentary on Hovenkamp, Janis & Lemley*, 87 MINN. L. REV. 1789 (2003).

[172] Miller & Gal, *supra* note 6, at 136, n. 76.

[173] *Id*.

Furthermore, even if we were to compare licensing agreements and reverse payments, licensing agreements are not immune to anticompetitive uses. The patentee may intentionally disguise reverse payments in the form of a reduced royalty by undercharging the licensee.[174] While this mechanism would most likely be less effective than a lump sum transfer from the patentee, it has the advantage of being more difficult to detect and police. In order to show that there is a reverse payment, the court would need to establish what the royalty would be without the disguised reverse payment, which would be very difficult.[175] In the aftermath of *Actavis*,[176] we are already witnessing reverse payment agreements that eschew lump sum transfers but instead resort to complicated licensing, co-marketing, or delayed entry arrangements.[177]

Third, while it may be true that licensing agreements are generally premised on the validity of the underlying patent, what matters is not whether the practice at issue is premised on patent validity, which only pertains to the subjective state of mind of the parties, but whether the legality of the practice turns on patent validity. That is the relevant issue as far as antitrust analysis is concerned. The legality of reverse payments would turn on the validity of the underlying patent. Reverse payments are only objectionable as a matter of antitrust law if the underlying patent is invalid.[178] If the patent was invalid, the patentee would be effectively splitting with the potential infringer the monopoly profit, which she does not deserve. The patentee and the potential infringer are both better off than if the potential infringer enters the market after invalidating the patent. Monopolist profit

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[174] Crane, *supra* note 171, at 776.

[175] Damien Geradin, Douglas Ginsburg & Graham Safty, *Reverse Payment Patent Settlements in the European Union and the United States*, GEO. MASON U. LEGAL STUDIES RES. PAPER SERIES LS 15-22 8, http://www.law.gmu.edu/assets/files/publications/working_papers/LS1522.pdf.

[176] Fed. Trade Comm'n v. Actavis, 570 U.S. 756 (2013).

[177] William O. Kerr & Cleve B. Tyler, *Measuring Reverse Payments in the Wake of* Actavis, 28 ANTITRUST 29, 30 (2013). See also King Drug Co. of Florence, Inc. v. Smithkline Beecham Corp. d/b/a GlaxoSmithKline, et al., 791 F.3d 388 (3d Cir. 2015); *In re* Loestrin 24 Fe Antitrust Litig., 45 F.Supp.3d 180 (D.R.I. 2014). In King Drug, GSK, the branded manufacturer, and Teva, the generic manufacturer, reached a settlement agreement that permitted Teva to enter the market for lamotrigine chewables 37 months early and the market for lamotrigine tablets 6 months early. The former agreed to stay out of the authorized generic market for lamotrigine during Teva's exclusivity period from July 2008 to January 2009. In return, Teva dropped its challenge to GSK's Lamictal patents. In In re Loestrin, Watson, the generic manufacturer, agreed to halt its patent validity challenge and abstain from the market for a time in exchange for the branded manufacturer Warner Chilcott's promise that, when Watson finally did enter, Warner Chilcott would refrain from competing with its own authorized generic version for six months.

[178] Shapiro, *supra* note 171, at 397.

is always higher than the profit redounding to two competing duopolists.[179] Furthermore, invalidating the patent would expose the potential infringer to further entry by third parties. Meanwhile, if the patent were valid, the patentee would have no reason to pay the potential infringer anything, but would be free to split its monopoly profit as she sees fit. In this situation, the reverse payment may be irrational from the patentee's perspective, but certainly would not be illegal. The patentee is entitled to exclude a potential infringer by exercising its patent right anyway. Similarly, no challenge clauses are only problematic if the underlying patent is invalid. By protecting an invalid patent, no challenge clauses augment the likelihood that invalid patents persist in the market and cause supra-competitive prices. If, however, the underlying patent were valid, the only consequence of no challenge clauses would be to eliminate needless litigation that would result in affirmation of patent validity anyway. This would be a socially beneficial outcome.

Lastly, Miller and Gal argue that reverse payment agreements exclude both the potential infringer and third parties, whereas licensing agreements with a no challenge clause only restrict the entry of third parties into the market.[180] Whether a licensing agreement with a no challenge clause truly excludes third parties depends on whether the underlying patent is perceived to be valid. If the patent is perceived to be valid, third parties are excluded from the market, to the extent that access to the patented technology is essential to market entry. However, what excludes the third parties is not the licensing agreement or the no challenge clause, but the patent—or the perception of the patent—itself. If the patentee does not quantitatively restrict the number of licensees, nothing stops a potential market entrant from reaching a licensing agreement with the patentee and entering the market. If, however, the patent is perceived to be weak, third party entries are restricted to the extent that a third party entrant does not have the economic incentive or the requisite knowledge to challenge the patent. This could be because the litigation costs are prohibitively high in relation to the potential gains from market entry, or the knowledge required to launch a successful challenge can only be gained through commercialization of the technology, which can only take place after a licensing agreement has been reached. Otherwise, third parties would be free to challenge the patent despite the no challenge clause. Meanwhile, a reverse payment agreement will exclude both the potential infringer and third party entrants, especially under the Hatch-Waxman Act.[181]

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[179] Mungan, *supra* note 171, 30-31.
[180] Miller & Gal, *supra* note 6, at 136, n. 76.
[181] Hovenkamp, Janis & Lemley, *supra* note 170, at 1757.

While it may seem that reverse payment agreements are more anticompetitive because they exclude more rivals, this need not be the case. For example, if the patentee does not produce the final product and only licenses the technology to a licensee on an exclusive basis, there will be only one firm selling products incorporating the patented technology in the market. This arrangement is akin to when a patentee enters into a reverse payment agreement with a potential infringer. In the former case, if the technology grants the patentee monopoly power due to a lack of reasonable substitutes, the monopoly profit will be split through the royalty mechanism. The patentee presumably will only extract part of the monopoly profit through royalty, leaving some monopoly profit to the exclusive licensee. In the latter case, the patentee shares the monopoly profit with the licensee directly through a lump sum payment. In both cases, there is only one producer in the market. Competitive harm is not confined to situations in which the patentee only grants an exclusive license. Even if the patentee grants multiple licenses, she can still maintain its monopoly profit through a variety of licensing practices such as territorial exclusivity, customer exclusivity, or a GE-style price fixing arrangement.[182] Therefore, the number of excluded rivals is a poor proxy for the amount of consumer harm resulting from a patent exploitation practice. What determines whether a particular patent exploitation practice should fall within the ambit of antitrust law should not be the number of excluded rivals, but the amount of possible consumer harm that may result from the practice.

In sum, attempts to distinguish reverse payments and no challenge clauses, and conclude that the latter should be beyond the purview of antitrust law, fail. No challenge clauses can cause consumer harm under certain circumstances. There is no strong justification for excluding no challenge clauses from antitrust scrutiny, as Miller and Gal have argued. One may then wonder why U.S. antitrust law has not addressed no challenge clauses, contrary to the situation in the EU and China. One possible explanation is that the various Courts of Appeals have generally taken a fairly hostile attitude toward no challenge clauses in licensing agreements, notwithstanding the more lenient approach of the Federal Circuit. The Second, Seventh, and Ninth Circuits have by and large held no challenge clauses to be unenforceable as a matter of patent law.[183] Given that the case law suggests that it is usually licensees that challenge the validity of no challenge clauses, it would be more straightforward for the licensee to seek to invalidate the clause under patent law than to attempt to challenge it under antitrust law. This is particularly the case

[182] U.S. v. General Electric Co., 272 U.S. 476 (1926).
[183] See *supra* Section II.A.

given that the Rule of Reason, as opposed to the per se rule, most likely applies.[184] The relative attractiveness of patent law as an avenue for invalidating no challenge clauses probably explains the lack of case law under antitrust law.

B. Probabilistic Patents and Patent Validity

Having established that no challenge clauses should fall within the ambit of antitrust law, it remains to be determined exactly under what circumstances these clauses cause consumer harm A concept highly relevant to the determination of legality of no challenge clauses is the "probabilistic patent." The idea is that unlike real property such as land, where there is much less uncertainty as to the boundary or even the existence of the property right, the validity and scope of a patent are often shrouded in uncertainty.[185] This uncertainty is underscored by statistics that show the failure rate of patentees in defending their patents. Allison and Lemley find that 46% of patents that were litigated to judgment were found to be invalid.[186] A later study found that patentees have their patents invalidated approximately 70% of the time.[187] In the specific context of litigation between generic manufacturers and branded manufacturers, it was found that the patentee loses 48% to 73% of the cases.[188] This is despite the fact that, under the Patent Act, a patentee is entitled to a presumption of validity and a challenger must show by clear and convincing evidence that the patent is invalid.[189] In fact, the success rate is even lower for patent assertion entities, otherwise known as "patent trolls."

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[184] As the Supreme Court stated in *Topco Associates*, "[i]t is only after considerable experience with certain business relationships that courts classify them as per se violations…" U.S. v. Topco Assoc., 405 U.S. 596, 607-08 (1972). Given that the antitrust courts have had so little experience with no challenge clauses, and that these clauses are not so obviously anticompetitive and lacking in redeeming virtues that they should be summarily condemned, it is highly unlikely that courts would apply the per se rule to no challenge clauses.

[185] The uncertainty of the boundary, or scope, of patent rights is extensively discussed in JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 46-72 (2008).

[186] John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998).

[187] Paul M. Janicke & LiLan Ren, *Who Wins Patent Infringement Cases?*, 34 AIPLA Q.J. 1, 20-22 (2006).

[188] SUSAN DESANTI ET AL., FED. TRADE COMM'N, GENERIC DRUG ENTRY PRIOR TO PATENT EXPIRATION: AN FTC STUDY vi (2002); ADAM GREENE & D. DEWEY STEADMAN, PHARMACEUTICALS: ANALYZING LITIGATION SUCCESS RATES 1, RBC CAPITAL MKTS. (2010).

[189] Patent Act, 35 U.S.C. § 282 (2011).

According to one study, patent trolls win only 8% of the cases in which patent validity is litigated to judgment.[190]

A number of commentators have noted the probabilistic nature of patent rights. Pittman notes that "patent validity is an extremely slippery concept. Because the criteria regarding patent validity are so subjective, it is often unclear whether a patent is valid."[191] To underscore the uncertain nature of patent rights, Carl Shapiro famously asserted that a patent does not confer the right to exclude, but only the right to try to exclude.[192] In fact, the U.S. Supreme Court itself expressed skepticism toward the the strength and prevalence of patents.[193]

There are a number of implications from the probabilistic nature of patents. First, a patent is a "bundle of uncertain and imperfect rights,"[194] which are "typically far less valuable than would be idealized 'ironclad' patent rights."[195] This means that patent rights should be calibrated to reflect the probability that a patent will be held valid and infringed, which in turn depends on the scope of the patent.[196] Second, recall that whether no challenge clauses result in consumer harm crucially depends on whether the underlying patent is valid. If the patent is valid, all that a no challenge clause does is to eliminate needless litigation. If, however, the patent is invalid, a no challenge clause may help bolster an invalid patent and preserve the market power and monopoly profit that a patentee does not deserve. Therefore, it would seem that an assessment of the legality of no challenge clauses from an antitrust perspective would require a determination of patent validity. This would introduce a great deal of complexity to antitrust proceedings and would need to be addressed with care. Nevertheless, commentators have discussed the relevance of patent validity to legality under antitrust law at length in the context of reverse payment agreements.[197] Given the apparent similarity between no challenge clauses and reverse payment agreements, this discussion will shed light on how the issue of patent validity should be dealt with in the context of no challenge clauses.

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[190] John R. Allison et. al., *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO. L.J. 677, 694 (2011).

[191] Pittman, *supra* note 47, at 347-48.

[192] Shapiro, *supra* note 171, at 395.

[193] *See* Dreyfuss & Pope, *supra* note 16, at 972, 980 n. 44 (noting that Supreme Court either reversed or vacated Federal Circuit decisions in favor of patentee between 2006 and 2007).

[194] Shapiro, *supra* note 171, at 395.

[195] *Id.*

[196] Hovenkamp, Janis & Lemley, *supra* note 170, at 1761.

[197] *See, e.g.*, *id.*; Elhauge & Krueger, *supra* note 169; Carrier, *supra* note 170.

C. No Challenge Clauses and Consumer Harm

1. Direct Consumer Harm

No challenge clauses, on their own, do not distort competition or inflict harm on consumers. Only when combined with the right to exclude of a patent and the various competition-distorting licensing practices permissible under patent law do no challenge clauses raise antitrust concerns. As mentioned earlier, if the underlying patent is valid, the patentee is entitled to the supra-competitive prices and the various licensing practices as permitted by patent law.[198] These may result in consumer harm, but this is part of the bargain struck under patent law to sacrifice short-run consumer welfare for long-run dynamic efficiency gains. Antitrust law should accept the implications of the bargain and not intervene. However, if the underlying patent is invalid, then the patentee does not deserve the supra-competitive prices and other profits that may result from the various licensing practices. This is where antitrust law should intervene.

Patent law gives a patentee the right to exclude, or at least the right to try to exclude. This right to exclude, however, need not result in higher prices for consumers if there are reasonable substitutes available in the relevant market. There was a time when the ownership of a patent created a presumption of market power.[199] But that presumption was overturned by the Supreme Court in *Illinois Tool Works, Inc. v. Independent Ink, Inc*. in 2006.[200] This decision stemmed from a realization that where there are reasonable substitutes in the market for the patented product, the patent will not wield market power, and the patentee will not be able to charge supra-competitive prices.[201] And without supra-competitive prices, the no challenge clause will not create consumer harm. Therefore, the patentee possessing market power is a prerequisite for antitrust intervention against no challenge clauses.[202]

The main problem with no challenge clauses is that they prevent licensees from challenging the validity of the patent. The preclusion of licensee challenge

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[198] HOVENKAMP ET AL., *supra* note 34, at § 1.3.

[199] Int'l Salt Co. v. United States, 332 U. S. 392, 398 (1947).

[200] Ill. Tool Works, Inc. v. Independent Ink, Inc., 547 U.S. 28, 31 (2006) (The question presented to us today is whether the presumption of market power in a patented product should survive as a matter of antitrust law despite its demise in patent law. We conclude that the mere fact that a tying product is patented does not support such a presumption.).

[201] HOVENKAMP ET AL., *supra* note 34, at § 4.2.

[202] Elhauge & Krueger, *supra* note 169, at 323 ("Further, there can be no harm to consumer welfare without market power, which is by definition the power to raise prices above competitive levels.").

would not be of such grave concern if third party challenges were equally probable and likely to succeed. However, there are many reasons to think that licensees are often best positioned to mount a validity challenge, as the Supreme Court noted in *Lear*.[203] Not only do licensees, for myriad reasons, have greater economic incentives to mount a validity challenge, but they also enjoy an advantage in knowledge that increases the likelihood of success of their challenges.[204] First, licensees have more economic incentives than third parties because they are currently paying royalties; which can be avoided if the patent is invalidated. Second, third parties do not have as much incentive to enter the market as licensees because the market is already populated by the existing licensees. The market would be quite competitive by the time they enter, after invalidation of the patent. Third parties also do not have first mover advantage, which gives a competitor cost and marketing advantages over late comers to the market. In a market with homogeneous product and Bertrand competition, even a firm that is equally efficient as existing licensees would not enter the market.[205] Lastly, third party challengers would suffer from the free-rider problem. Each potential third party challenger would want to wait for someone else to shoulder the costs of challenge, because once a patent has been invalidated, it is invalid vis-à-vis all parties.[206] Of course, licensees may also suffer from the same problem. However, licensees have an advantage in overcoming the free-rider problem because they are aware of each other's identity, and can organize more easily to share litigation costs. In contrast, potential third party challengers may not even be aware of each other and may have greater difficulty coordinating.

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

[204] It should be noted that licensees also suffer from some specific financial disadvantages in mounting validity challenges. Licensees may be subject to the various penalties stipulated in the licensing agreement over validity challenges. And if the agreement provides for automatic termination upon challenge, licensees may be exposed to trebled damages if they continue to produce and the infringement is found to be willful. Given that the licensees have already invested heavily in the production process, it would be very costly for the licensees to cease production. Lastly, licensees have to bear reputation costs, especially as a repeat player in the industry.

[205] Shapiro, *supra* note 171, at 406. This is because the market price post-entry would be driven down to the marginal cost. Given the fixed costs of entry, no entry would occur. Only if the entrant enjoys a significant cost advantage would entry occur. The cost advantage would not only need to enough to allow the entrant to recoup the fixed costs of entry, it would also need to allow the entrant to cover the litigation costs of invalidating the patent.

[206] Blonder-Tongue Labs. v. U. of Ill. Found., 402 U.S. 313 (1971).

Licensees also have an informational advantage over potential third party challengers. They may have gained special knowledge about the patented technology through the license negotiation process,[207] and commercialization of the technology.[208] This is, in no small part, because the licensees will have physical possession of the patented invention, which significantly aids in their understanding of the technology.[209] Licensees will likely also have a good understanding of the prior art based on their experience with the industry in general, and will likely have dealt with similar technology or products in the past.[210] With respect to the specific requirements of patentability, "[a] licensee is likely able to understand, based on its own use, whether the invention falls within the broad scope of patentable subject matter and has a specific and substantial utility. The licensee's use similarly provides a better understanding of whether the patent's written description fully describes the invention and is sufficient to enable one to make and use it without undue experimentation."[211] Therefore, licensees should be better positioned to furnish evidence to challenge patent validity.

If the underlying patent is invalid, no challenge clauses, by precluding licensee challenges, may artificially prolong the exclusion period of a patent, and compel consumers to pay supra-competitive prices for longer than necessary.[212] Therefore, to determine whether a no challenge clause has resulted in consumer harm, one needs to compare the "licensing exclusion period,"[213] that would obtain under the licensing agreement with a no challenge clause, with the "expected exclusion period"[214] that would materialize if the licensing agreement did not contain a no challenge clause.

Under normal circumstances, the licensing exclusion period would be at most the duration of the license, as most no challenge clauses last for the length of

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[207] Orstavik, *supra* note 7, at 101.

[208] Morris, *supra* note 119, at 220.

[209] Nicholas Roper, *Limiting Unfettered Challenges to Patent Validity, Upholding No-Challenge Clauses in Pre-Litigation Patent Settlements Between Preexisting Parties to a License*, 35 CARDOZO L. REV. 1649, 1675 (2014).

[210] Miller & Gal, *supra* note 6, at 137.

[211] Roper, *supra* note 209, at 1676.

[212] Elhauge & Krueger, *supra* note 169, at 288.

[213] Despite the term, the same concept obviously also applies when the no challenge clause is contained in a settlement agreement. For ease of reference, this Article will use licensing exclusion period to refer to the exclusion period under licensing agreements and settlement agreements. Consent decrees are excluded from this discussion because, as it has been argued earlier, it is inappropriate to apply antitrust scrutiny to an agreement that has been judicially approved.

[214] Elhauge & Krueger, *supra* note 169, at 290.

the license itself. However, it is possible for the no challenge clause to last longer than the length of the license. An example is the licensing agreement in *Bendix Corp v. Balax Inc.*, which prohibited the licensee from ever challenging the validity of the patent, even after the agreement has lapsed.[215] In this case, the maximum licensing exclusion period would be the remainder of the patent term. The situation would be more complicated if the patentee has entered into a range of licensing agreements whose terms vary, or if the patentee, for some reason, has only imposed a no challenge clause on some licenses and not others. In this case, the licensing exclusion period will need to be weighted by the likelihood that a licensee not subject to a no challenge clause will bring a validity challenge. Licensees are not the only source of validity challenges. Unrelated third parties can also launch a validity challenge, which, if successful, will put an end to the patent term and hence the licensing exclusion period. This is likely the major source of uncertainty regarding the licensing exclusion period, as the main reason beyond the parties' control that a license may end prematurely is a third party challenge to the patent. The exclusion period for a settlement agreement would similarly depend on the term of the agreement. If the settlement agreement is meant to remain in force in perpetuity, then the exclusion period would be again the remainder of the patent term plus taking into account third party challenges.

The "expected exclusion period" refers to the exclusion period that would be obtained absent a no challenge clause. Without a no challenge clause, there will be two sources of challenges: the licensees and unrelated third parties. The likelihood that these two groups will bring validity challenges will most likely be different, as explained above. In a world without licenses, the likelihood of a challenge would chiefly depend on the perceived validity of the patent and the resources at the disposal of the potential challengers. Once licensing agreements come into the picture, they affect the economic incentives of parties to bring challenges. When deciding whether to launch a validity challenge, a licensee will compare what she currently earns in the market as opposed to what she would earn in the post-challenge market. One main difference between the two markets is that the licensee would no longer need to pay royalties in the post-challenge market. The state of competition among the licensees may also differ due to current licensing restrictions imposed by the patentee, such as a GE-style price fixing arrangement, output restriction, or territorial exclusivity. Without a valid patent, these restrictions would most likely be illegal and dismantled.[216] A GE-style price fixing arrangement or output restriction would help to maintain supra-competitive prices,

[215] *See* Bendix Corp. v. Balax, Inc., 471 F.2d 149, 153 (7th Cir. 1972).
[216] *See* Hovenkamp, Janis & Lemley, *supra* note 170, at 1746-49.

which benefit the licensees. Territorial exclusivity effectively creates regional monopolies and also benefit the licensees. Without these restrictions, a licensee would have access to the entire market, free from price, output or territorial restrictions imposed by the patentee. However, whether a licensee will stand to gain from such a situation depends on its comparative advantage vis-à-vis other licensees. If a licensee was a more efficient producer of the product due to cost advantages or superior production techniques, she would stand to capture market share from other licensees and would therefore benefit from the dismantling of the license restrictions. But if a licensee was a less efficient producer, she would be better off under the protection of license restrictions, which prevent its competitive disadvantage from being exposed by competitive pressure.

The most obvious difference between the pre-challenge market and the post-challenge market, regardless of the existence of license restrictions, is the entry of third parties. In the pre-challenge market, third parties would be deterred from entering the market to the extent that they are deterred by a perceivably valid patent, or the litigation costs or knowledge requirements of bringing a validity challenge. Once a licensee brings a validity challenge and prevails, the floodgates open for third parties to enter the market. Whether a licensee would achieve a net gain from the removal of the patent depends on its savings from the royalty payment and its competitive advantage vis-à-vis third party entrants. If the licensee was a more efficient producer than the third party entrants, she would worry less about them and would probably achieve a net gain from the removal of the patent. However, if a licensee was a less efficient producer than third party entrants, she would be better off under the existing license restrictions.

The next question is whether third parties would have the same incentives to challenge the patent with and without the no challenge clause. If they do, then the main difference between the licensing exclusion period and the expected exclusion period would be attributed to the licensees. One would think that the third parties' incentive to challenge the patent would be the same with or without the no challenge clause. After all, the no challenge clause does not apply to them, it only affects the licensees. However, it is possible that the no challenge clause will have a signaling effect to potential third party challengers.[217] Such a challenger may think that if all these licensees are willing to accept a no challenge clause, it must

[217] Note, however, that in *Jack Winter, Inc.*, the Court held that the fact that the defendant in that case extended its indemnification program to its customers to cover potential infringement suits from the patentee, even though the defendant had reasons to doubt the validity of the patent, does not render an agreement an unreasonable restraint of trade. Jack Winter, Inc. v. Koratron Co., Inc., 375 F. Supp. 1, 54 (N.D. Cal. 1974).

mean that the licensees are fairly confident that the patent is valid. Otherwise, the licensees would not have agreed to pay royalty and give up their rights to challenge the validity of the patent. This would especially be the case if the licensees are perceived to be firms with intimate knowledge of the technology and would be in the best position to evaluate the validity of the patent. A third party challenger may be deterred from launching a challenge by the fact that a host of knowledgeable firms have willingly accepted a no challenge clause. The third party challenger may be right to put credence in the signaling effect of the licensees' acceptance of the no challenge clause if the licensees have accepted the clause in good faith, after careful examination of the patent. If, however, it turns out that the no challenge clause is the result of a conspiracy between the patentee and the licensees, whereby the licensees would refrain from challenging a highly questionable patent and the patentee will split part of the monopoly profit with the licensees, then the no challenge clause will serve a plainly anticompetitive purpose. Unfortunately, third parties probably cannot distinguish the two situations. Therefore, whether or not the licensees accepted the no challenge clause on good faith, the mere existence of the no challenge clause would somewhat deter a potential third party challenger.

So far, we have only focused on the likelihood of challenges from various sources. A missing piece of the puzzle in determining the licensing exclusion period and the expected exclusion period is the probability that the patent will be upheld when challenged. Formally, the licensing exclusion period should equal the base exclusion period, here the full length of the licensing agreement (and if the no challenge clause prohibits the licensee from ever launching a challenge, it would be the remainder of the patent term),[218] adjusted by the expected invalidity factor, which in turn equals the probability that a third party challenge will be launched times the probability that the challenge will succeed. Let T_{LE} stand for the licensing exclusion period, T_L stand for the duration of the licensing agreement, θ_T stand for the probability of a third party challenge, and θ_{IT} stand for the probability that a third party challenge will succeed. The licensing exclusion period would be represented by:

$$T_{LE} = (1- \theta_T * \theta_{IT}) T_L$$

Likewise, the expected exclusion period needs to take into account the probability that the patent will be held invalid. Formally, the expected exclusion period should equal the duration of the licensing agreement reduced by the expected invalidity factor. This is calculated by multiplying the probability of a third party challenge by the probability that the challenge will succeed, plus the

[218] The same would be true for a settlement agreement without a finite term.

probability of a licensee challenge multiplied by the probability that the challenge will succeed. For reasons discussed previously, licensee challenges may be systematically more likely to succeed than third party challenges,[219] Thus it is important to distinguish them. The base exclusion period in this instance is also the duration of the licensing agreement, and not the full patent term, unless the licensing agreement, or the settlement agreement, lasts for the full term of the patent.[220] Let T_{EE} stand for the expected exclusion period, θ_L stand for the probability of a licensee challenge, and θ_{IL} stand for the probability of success for a licensee challenge. The expected exclusion period is represented by:

$$T_{EE} = [1- (\theta_T * \theta_{IT} + \theta_L * \theta_{IL})] T_L$$

The comparison will be slightly different if the no challenge clause is unenforceable in a particular jurisdiction, as in some of the circuits in the U.S.[221] If the no challenge clause is unenforceable, the licensing exclusion period and the expected exclusion period should in theory be the same, as the licensees are free to challenge patent validity. It would then seem that the no challenge clause inflicts no consumer harm. This would be true if the licensees truly deem themselves not bound by the no challenge clause.[222] It is possible, however, that despite the unenforceability of the no challenge clause, the licensees voluntarily agree not to challenge the validity of the patent, perhaps because the licensees have been offered preferential licensing terms in exchange for a promise not to challenge. In that case, the licensing exclusion period would be the same as if the no challenge clause were binding and enforceable. This would amount to a non-binding agreement by the licensees not to challenge a patent, probably in exchange for some benefit.[223] This possibility has been recognized by commentators. Miller and

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[219] *See* discussion *supra* Section II.C.1.

[220] This is because the purpose of the exercise is to compare the exclusion period that is affected by the no challenge clause versus the but-for exclusion period. If the full patent term is used as the base exclusion period, then a patentee can easily game the rule by adopting very short licenses, in which case the expected exclusion period will almost always be longer than the licensing exclusion period.

[221] *See, e.g.*, Rates Tech., Inc. v. Speakeasy, Inc., 685 F.3d 163 (2d Cir. 2012); Massillon-Cleveland-Akron Sign Co. v. Golden State Advert. Co., 444 F.2d 425 (9th Cir. 1971); Bendix Corp. v. Balax, Inc., 421 F.2d 809 (7th Cir. 1970).

[222] Even then, there could still be a difference between the licensing exclusion period and the expected exclusion period if third parties are nonetheless deterred by the existence of a no challenge clause from challenging the patent.

[223] While one may argue that a licensee accepting a no challenge clause where such a clause is enforceable is also an agreement by the licensee not to challenge the patent, there is a difference between the two situations. In the former situation, the right to challenge a patent is something that could legally be bargained away. In the latter situation, a bargain over the right to

Gal note that "no-contest clauses may provide a method for parties to cartelize the market based on a patent that was wrongly granted."[224] Hovenkamp, Janis, and Lemley remark that "[t]here is some risk that a patentee may seek to insulate its patent from antitrust challenge by co-opting the most likely challengers with licenses. Where co-option is a problem, the antitrust risks of a settlement are greater than where other potential defendants are likely to challenge the validity of a patent."[225]

Where a no challenge clause is unenforceable, an agreement by the licensees to refrain from challenging the patent would be strongly indicative of a conspiracy between the patentee and the licensees to protect a questionable patent and split the monopoly profit between them, as in the case of illegal reverse payments. One may surmise that the licensees must be generously compensated in order to forego a right that they cannot bargain away under patent law. In addition, one might question why the patentee is willing to offer such generous compensation but for the fact that the patent is of highly questionable validity. The degree of consumer harm inflicted by such a conspiracy, however, would be the same as under an enforceable no challenge clause, because consumer harm is determined by the market power of the patent.[226] Regardless of the enforceability of the no challenge clause, where an agreement not to challenge patent validity exists between the patentee and the licensees, the circumstances under which such a clause would create consumer harm and the degree of consumer harm would be the same. The same analysis applies, but there would be serious reasons to question the validity of the patent.

Based on the foregoing discussion, the following factors should be considered when analyzing whether a no challenge clause results in consumer harm: (1) market power conferred by the patent, (2) the probability of a licensee challenge, which will depend on the licensee's net gain from bringing a challenge, which in turn depends on the market structure, the licensee's comparative advantage, the existence of further licensing restrictions, and third party entrants' comparative advantage, (3) the probability of success for a licensee challenge, (4) the probability of a third party challenge, which may be lowered by the signaling effect of a no challenge clause, and (5) the probability of success for a third party

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challenge a patent is something that the patent law will not enforce. The licensee will be free to renege on its earlier promise as it sees fit. For the licensee to give up such a right probably requires more generous compensation.

[224] Miller & Gal, *supra* note 6, at 156.

[225] Hovenkamp, Janis & Lemley, *supra* note 170, at 1743.

[226] HOVENKAMP ET AL., *supra* note 34, at § 3.1.

challenge. The probability of a third party challenge and its likelihood of success will be formulated as an affirmative defense in the proposed framework in this Article and will be discussed in Section VI.A. The other three factors will be examined in detail in next Section. If the variables in the two expressions above can be accurately calculated, then a direct comparison between the licensing exclusion period and the expected exclusion period can be made. Otherwise, a qualitative assessment of the various variables will be needed.

2. Impairment of Innovation Incentives

Before moving to a more detailed examination of each of these factors, it is important to discuss some theories of harm that are premised on the impact of no challenge clauses on blocking patents and cumulative innovation. Recall that in the NDRC Guidelines, one of the factors to be considered is whether the underlying patent blocks the implementation of competing patents.[227] Presumably the concern is that if the underlying patent blocks another patent, and the underlying patent is protected by a no challenge clause, exploitation of the blocked patent will be retarded. Obviously if the underlying patent were invalid, then the impediment of the exploitation of the blocked patent would be socially wasteful. However, unless the owner of the blocked patent is itself subject to a no challenge clause, nothing prevents the owner from bringing a validity challenge. If the blocking patent is invalid, the block will be removed. If the underlying patent is found to be valid, then the block stems from the right to exclude of the underlying patent, and not the no challenge clause. The owner of the blocked patent would need to negotiate for a license from the owner of the original patent. If the owner of the blocked patent turns out to be an existing licensee subject to a no challenge clause, one would have expected the licensee to have negotiated for a cross license when entering into the initial licensing agreement. The only scenario in which no challenge clauses would hinder the implementation of a blocked patent is if the licensee subject to a no challenge clause only came up with the technology covered by the blocked patent after entering into the licensing agreement. The no challenge clause would be particularly damaging if the existence of this blocked patent increases the licensee's incentive to challenge the patent, either because the invention process gave him or her new information about the patentability of the blocking patent, or

[227] *Id.* at §34.2 ("Patents may be said to be in a blocking relationship when there is a product or set of products that infringes at least one claim of one party's patent while also infringing at least one claim of another party's patent."); SUZANNE SCOTCHMER, INNOVATION AND INCENTIVES 127-132 (2004) (cumulative innovation refers to innovation that builds on other previous innovation).

the potential to commercialize the blocked patent provides new financial incentives to bring challenges.

The same argument can be made about cumulative innovation. If a cumulative innovation is premised on the underlying patent and cannot be used without a license to the patent, one may be tempted to think that exploitation of the cumulative innovation is retarded when the patent is protected by a no challenge clause. Again, the answer to this argument is that so long as the developer of the cumulative innovation is free to challenge the patent, the no challenge clause should not have any restrictive effect on cumulative innovation. However, that may not always be the case. It is entirely possible, and in fact likely, that the cumulative innovation comes from one of the licensees that developed the improvement during the process of commercialization of the patented technology. However, given that existing licensees already have a license to the patented technology, the innovating licensee should face no obstacles in making use of its improvement (even though the patentee will probably request a license for the improvement), unless the existing license has restricted uses. Therefore, in general, implementation of the cumulative innovation should not be hindered by the existence of a no challenge clause.[228]

D. Factors to Consider When Assessing Consumer Harm

This section examines four factors in determining the likelihood of consumer harm of no challenge clauses. The first factor is what constitutes a no challenge clause for the purpose of antitrust; that is, whether the myriad variations of no challenge clauses should be treated the same in the eyes of antitrust, and whether the kind of agreement which contains the clause alters the analysis. After defining the proper object of analysis, this section moves on to the second factor, market power, which is a prerequisite for consumer harm. A no challenge clause that applies to a patent with no market power will not cause consumer harm. This

[228] Even though no challenge clauses probably will not hinder the deployment of cumulative innovation, there is a scenario in which the emergence of cumulative innovation will increase the licensee's incentive to challenge the original patent. This is if the cumulative innovation is valuable and patentable, but the licensee has serious doubt that the original technology is not patentable. In that case, the licensee can basically take over the exclusivity of the original patentee over the market by patenting its cumulative innovation while invalidating the original patent. The license would thus have significant incentives to challenge, but will be blocked by the no challenge clause. However, consumers are likely to be indifferent between the two scenarios as what will transpire is essentially one patent monopoly replacing another one. If both the original technology and the cumulative innovation are valued by consumers and do not face significant competition in the market, the consumers will have to pay a supra-competitive price either way.

section then examines the factor of patent validity. A no challenge clause will not cause consumer harm if the underlying patent is valid. Lastly, this section analyzes the factor of market structure. Market structure creates different incentives for the licensees to challenge or not to challenge the patent. Licensee incentives matter for two reasons. First, they serve as a proxy for patent validity. A patentee that is unsure about a patent may want to offer the licensees more incentives not to challenge. Second, they tell us how much harm is being done by the no challenge clause; that is,how many potential challenges are being blocked.[229] If no challenge would be forthcoming from the licensees anyway, the no challenge clause would be relatively harmless.

1. Types of Agreements

The first question to consider is whether the analysis should differ based on the type of agreement at issue, be it licensing or settlement, and on the kind of clause at issue, whether it is an outright prohibition, termination-upon-challenge, or other kinds of challenge-penalty clauses.

A number of commentators have correctly observed that there should be no difference between a licensing agreement and a settlement agreement as far as antitrust analysis is concerned.[230] Shapiro observes that "a wide range of commercial arrangements involving intellectual property can be regarded as settlements of intellectual property disputes, either literally or effectively. Virtually every patent license can be viewed as a settlement of a patent dispute: the royalty rate presumably reflects the two parties' strengths and weaknesses in patent litigation in conjunction with the licensee's ability to invent around the patent."[231] While a settlement agreement that is reached after litigation has commenced is clearly consummated in the shadow of ultimate judicial findings on patent validity and infringement, a settlement agreement that is entered into after a dispute has arisen but before litigation has begun likewise falls within the same shadow, albeit a slightly longer one. As Shapiro further notes, "both types of settlements raise the same antitrust issues."[232]

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[229] If we know the validity of the patent, the amount of potential challenges being blocked would not matter. If we know that the patent is valid, the inquiry would end. However, because we do not know patent validity, every potential challenge is an opportunity to unearth an invalid patent, and by extension consumers' needlessly paying supra-competitive prices. Every potential challenge blocked therefore increases the probabilistic consumer harm of the no challenge clause.

[230] *See* Orstavik, *supra* note 7, at 107; Roper, *supra* note 209, at 1678.

[231] Shapiro, *supra* note 171, at 392.

[232] *Id*.

There is no qualitative difference between a pre-litigation settlement agreement and a licensing agreement, especially one that incorporates a no challenge clause, which suggests that patent validity was within the parties' contemplation and represents an implicit concession of validity on the part of the licensee. The Supreme Court has held in *FTC v. Actavis*, 570 U.S. 756 (2013), that settlement agreements are not immunized from antitrust scrutiny.[233] Recall that the *Rates Technology* court noted that if no challenge clauses in pre-litigation agreements were enforceable, parties could easily circumvent the ban on no challenge clauses in licensing agreements through creative drafting.[234] This is a tacit acknowledgement that the line between pre-litigation settlement agreements and licensing agreements is very thin, if not non-existent.

What about the distinction drawn by some courts concerning the enforceability of no challenge clauses in a settlement agreement that depends on whether discovery on patent merit has taken place? The argument made by those courts is that after discovery on patent merit, the parties have the ability to make a well-informed decision.[235] Presumably, the settling party would not accept a no challenge clause in the settlement agreement if it has grounds to doubt the validity of the patent. If the issue is enforceability of the clause, this argument should carry great weight. However, if the issue is whether the clause is anticompetitive, whether the parties entered into the agreement with full information should not be dispositive. There remains the possibility that the parties have entered into a conspiracy to split the monopoly profit despite both having serious doubts about the validity of the patent, and such an agreement can be anticompetitive even in the absence of a reverse payment.[236] The most that the courts could infer from a post-discovery settlement agreement is that there is a greater probability that the patent is valid.

Whether various kinds of no challenge clauses should be treated differently depends on whether the clause at issue creates a sufficient deterrent to the licensee to mount a challenge. This is because the effectiveness of a no challenge clause is determined by the deterrent effect it creates. Recall that even an outright prohibition in the agreement will only result in damages for breach of contract unless the court enforces it with an injunction.[237] Therefore, most of these clauses

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[233] *See* Fed. Trade Comm'n v. Actavis, 570 U.S. 756 (2013).

[234] *See* Rates Tech., Inc. v. Speakeasy, Inc., 685 F.3d 163, 171 (2d Cir. 2012).

[235] *See, e.g.*, *Rates Tech.*, 685 F.3d at 171-72; Flex-Foot Inc. v. CRP, Inc., 238 F.3d 1362, 1369-70 (Fed. Cir. 2001).

[236] Elhauge & Krueger, *supra* note 169, at 312-19.

[237] *See* discussion *supra* Section I.B.

ultimately operate on financial incentives, and only differ in degree. That is certainly true of the challenge-penalty clauses. For example, the liquidated damages clause in *Rates Technology* probably provided a powerful deterrent to challenge even though it stopped short of being an outright prohibition.[238] Meanwhile, if the challenge penalty is insubstantial, the deterrent effect will be smaller, and the courts may not want to analyze the clause as an outright prohibition.

The controversy regarding the enforceability of termination-upon-challenge clauses notwithstanding, the practical consequence of termination of a licensing agreement is likely to be coercive enough on a licensee that it functions as an outright prohibition. So long as the licensee has made a substantial investment to commercialize the technology, and has not recouped its investment, the licensee is unlikely to be willing to cease production, which it would be required to do upon termination of the agreement. If the licensee has already recouped its investment and the fixed costs of production are not high, the licensee may be willing to cease production, but probably not for a long period of time. Given that a patent infringement suit can easily last for years, cessation of production is unlikely to be a viable option for most licensees. The alternative would be to keep producing and risk an infringement suit should the patent prove to be valid. If the damages are substantial enough—as they will be if willful infringement is proved—the licensee would only launch a validity challenge if she is highly confident of invalidity.

While it is possible to offer some predictions about the potential coercive effect of some of these challenge-penalty clauses and termination-upon-challenge clauses, in the end, whether a certain clause amounts to an outright no challenge clause will require a case-by-case analysis. This will be the first step in the analysis by a court facing these clauses.

2. Market Power

As explained previously, no challenge clauses will only harm consumers if they allow the owner of an invalid patent to continue to charge supra-competitive prices at the expense of consumers. A patentee will only be able to charge supra-competitive prices if the patent confers market power, which requires there to be few or no reasonable substitutes for the patented product. While determining whether a patent confers market power requires case-by-case analysis, a distinction can be made based on the correspondence between the scope of the patent and product boundary. Patent and antitrust law has long proceeded on the assumption

[238] *See Rates Tech.*, 685 F.3d at 166 (agreement provides for liquidated damages of $12 million).

that one patent results in one product, and hence there is a one-on-one correspondence between patent and product boundary.[239] While that may be true in the pharmaceutical industry, where the final drug product may only incorporate one patent, this is certainly not true in other sectors such as information technology, where products often incorporate hundreds, if not thousands, of patents.[240] The market power analysis will need to be conducted differently in these two scenarios. In the latter case, even if there were no reasonable substitutes for the final product, the market power of that product could not be facilely attributed to a single patent at issue in a case.

In fact, Sidak has gone one step further and argued that no challenge clauses applicable to standard-essential patents ("SEPS") in a patent portfolio are never anticompetitive. This is because the presence of a handful of invalid patents in the portfolio will be inconsequential, and no challenge clauses in such a situation only serve to reduce transaction costs and deter opportunistic behavior by licensees.[241] According to Sidak, the socially optimal number of invalid patents in a portfolio of SEPs is not zero.[242] When the patentee and a licensee negotiate for a license to a portfolio of SEPs, both parties are aware that some of the patents in the portfolio, which may number in the hundreds or the thousands, may be invalid.[243] Parties do not invest the time or the resources to verify the validity of each patent in the portfolio because that would be too costly from a transaction cost perspective.[244] Instead, the parties will assess the value of the portfolio as a whole.[245] The final royalty will reflect the fact that some of the patents may be invalid.[246] Given that the existence of a handful of invalid patents may not make much of a difference to the overall market power of the portfolio,[247] a no challenge clause will not artificially protect the market power of the patentee, and there will be no consumer harm. Meanwhile, allowing licensees to challenge the validity of the patents in the portfolio will give rise to opportunistic behavior:

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[239] Hovenkamp, Janis & Lemley, *supra* note 170, at 1739.

[240] Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1590-91 (2003).

[241] *See* J. Gregory Sidak, *Evading Portfolio Royalties for Standard-Essential Patents through Validity Challenges*, 39 WORLD COMPETITION (forthcoming 2016), https://www.criterioneconomics.com/docs/evading-portfolio-royalties-for-seps.pdf.

[242] *Id.* at 3.

[243] *Id.* at 10.

[244] *Id.*

[245] *Id.*

[246] *Id.*

[247] *Id.* at 12-13.

> After extensive negotiations, the licensee signs the portfolio license agreement but nonetheless challenges the validity of a few licensed SEPs and refuses to pay the agreed-upon portfolio royalty until the court decides the validity of the challenged SEPs. After the court decides the validity of the few disputed SEPs, the licensee challenges the validity of *another* handful of licensed SEPs and postpones even further its payment of the portfolio royalty. Suppose the licensee repeats this process again and again. That course of action would allow the licensee to postpone its portfolio royalty payments indefinitely and deprive the SEP holder of fair and timely compensation for its innovative contribution.[248]

If this strategy succeeds, the patentee will be denied the royalty it is due. This would impair patentees' innovation incentives in the future, which would be especially damaging for cash-strapped patentees. Therefore, according to Sidak, no challenge clauses in the context of SEP portfolios do not create consumer harm and instead serve the useful purpose of preventing opportunistic behavior.[249] Thus no challenge clauses should be per se legal in the context of SEP portfolios.[250]

There are two key problems in Sidak's arguments. First, in asserting that having a handful of invalid patents is unproblematic, he implicitly assumes that the patents in the portfolio are equally important or valuable, which may not be the case. It is entirely possible for a patent portfolio to be built upon a handful of key patents, and a large number of patents that are either dispensable or can be invented around with relative ease. In such a case, the validity of the key patents would be of central importance to the continual market power of the portfolio. If it turns out that these patents are invalid, the licensees may decide to revoke the license and invent around the remainder of the patents or seek alternatives. Therefore, a categorical statement that having a handful of invalid patents in a portfolio is inconsequential is inaccurate.

Second, Sidak's depiction of the opportunistic behavior by licensees assumes that a licensee can stop paying royalty upon launching a validity challenge. Under existing U.S. case law, it is not at all clear that licensees can stop paying royalties while maintaining the licensing agreement. In *MedImmune Inc. v. Genentech, Inc.*, the Supreme Court explained that in *Lear*, "we rejected the argument that a repudiating licensee must comply with its contract and pay

[248] *Id.* at 14.
[249] *Id.* at 13-15.
[250] *Id.* at 15-16.

royalties until its claim is vindicated in court. We express no opinion on whether a nonrepudiating licensee is similarly relieved of its contract obligation during a successful challenge to a patent's validity".[251] In other words, if a licensee repudiates the licensing agreement, she is free to stop paying a royalty, but she will lose the benefit of the agreement if the patent turns out to be valid. If the licensee continues to use the patent during the litigation, the patentee will be able to sue the licensee for infringement and claim damages, including possibly trebled damages. If the patentee chooses not to terminate the agreement upon the cessation of royalty payment, the patentee will be entitled to recover all the royalty accrued during litigation.

This interpretation of *Lear* is echoed by the Federal Circuit in *Cordis Corp. v. Medtronic, Inc.*, in which the court interpreted Lear as saying that while a licensee is free to stop paying royalty during the pendency of a validity challenge, the licensee is not free from facing the consequences of a cessation of payment.[252] If a licensee wishes to continue to invoke the protection of its licensing agreement, she should be required to continue paying royalty to the patentee. If the licensee stops royalty payment, she runs the risk of a breach of contract and liability for damages. Given the importance of these SEP portfolios, it is improbable that the licensee will repudiate the licensing agreement upon challenging the validity of a handful patents in order to save on royalty. The licensee will still need access to the remainder of the patents in the portfolio. Many of the cases in which the courts dealt with the issue of licensor rights and licensee obligations during a validity challenge concerned only a single or a handful of patents.[253] It would be highly unlikely for the courts to hold that a licensee can suspend royalty payment for an entire portfolio of hundreds or thousands of patents simply because she is challenging the validity of a handful of patents. This would be doubly so if the

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[251] MedImmune, Inc. v. Genetech, Inc., 549 U.S. 118, 124 (2007).

[252] Cordis Corp. v. Medtronic, Inc., 780 F.2d 991, 995-96 (Fed. Cir. 1985). In ruling that a licensee could not avoid facing the consequences of its breach of its license agreement in the course of bringing a patent challenge, the *Cordis* court echoed the view previously expressed in *Morton-Norwich* that "permitting the licensee to unilaterally and offensively ignore his contract obligation to make payments required under the contract, and at the same time denuding the licensor of the remedy of declaring a breach and seeking relief against the licensee as an infringer, . . . does violence to contract principles" in a manner that "might encourage more validity litigation, but at too high a price." Morton Norwich Prods v. Int'l Salt Co., 183 U.S.P.Q. 748, 750 (N.D.N.Y. 1974).

[253] *See, e.g.*, Precision Shooting Equip. Co. v. Allen Archery, Inc. 646 F.2d 313 (7th Cir. 1981); *Cordis Corp.*, 780 F.2d 991; Gen-Probe v. Vysis 359 F.3d 1376 (2004); *MedImmune*, 549 U.S. 118.

courts observe a pattern of repeated challenges over time with the goal of delaying royalty payment.[254]

While a rule of per se legality for no challenge clauses in the context of an SEP portfolio is unwarranted, it remains true that a patent, or a handful of patents, in a portfolio is less likely to wield market power than an entire portfolio of patents. Whether that is indeed the case will need to be determined on a case-by-case basis. Therefore, when facing a no challenge clause applicable to a patent portfolio, the court should first determine whether the portfolio as a whole wields market power. If it does, the court should next examine whether there is a considerable number of patents in the portfolio that are equally important or whether only a handful of patents are important. If the former is the case, then it is unlikely that the no challenge clause will contribute to artificially maintaining the market power of the portfolio, unless the licensee can prove that most of these important patents are of questionable validity. Otherwise, the clause should not be subject to antitrust scrutiny. But if the latter is the case, no challenge clauses could be problematic and antitrust scrutiny should continue.

3. Patent Validity

The legality of no challenge clauses would have been a straightforward question if patents had certain validity and scope. As no challenge clauses would only cause consumers to suffer unnecessary supra-competitive prices if the patent were invalid, and would be perfectly legitimate attempts to eliminate needless litigation if the patent were valid, legality of no challenge clauses would boil down to patent validity. Even though the issue falls under antitrust, the answer must be sought under patent law. Hovenkamp, Janis, and Lemley propound a classification of intellectual property settlement agreements into three categories.[255] The first two categories are relatively straightforward. Unfortunately, no challenge clauses fall within the third category as the competitive harm of these clauses depends on the

[254] *See* Sidak, *supra* note 241, at 15. Sidak's characterization of holders of SEP portfolios as cash-strapped is also unlikely to reflect the reality. Many of the holders of SEP portfolios, at least in the ICT industry where SEPs have the greatest salience, are the likes of Nokia, Ericsson, Motorola, Apple, Samsung, Qualcomm, and Google. These companies are hardly cash-strapped. Moreover, if a company is able to invest in the enormous volume of innovation in order to build an SEP portfolio, it is unlikely to be cash-strapped or otherwise liquidity constrained. It should have no problem borrowing from the capital markets while riding out the opportunistic behavior by licensees.

[255] Hovenkamp, Janis & Lemley, *supra* note 170, at 1720-21. The three categories are (1) agreements that are legal even if the patent is invalid and not infringed, (2) agreements that are illegal even if the patent is valid and infringed, and (3) agreements whose legality depend on the validity of the patent.

validity of the patent. What makes matters more complicated is that the determination of patent validity alone does not answer the question of legality. No challenge clauses are not anticompetitive if the patent is valid, but the opposite is not true. It is not necessarily the case that no challenge clauses are anticompetitive whenever the underlying patent is invalid. Even if the patent is invalid, no challenge clauses would only be anticompetitive if the patent wielded market power, which in turn depends on a host of issues such as the patent-product boundary correspondence and the availability of reasonable substitutes.

This still presents a difficult issue to resolve with respect to patent validity, which is whether it should be assessed from an ex ante perspective at the time the agreement is entered or from an ex post perspective when the no challenge clause is challenged in courts. This is important because if the patentee can demonstrate that the underlying patent is valid, she should be absolved from liability. In the context of reverse payments, most commentators who have expressed a view on this issue have argued that patent validity should be assessed from an ex ante perspective.[256] An ex ante approach makes sense because if patent validity was assessed on an ex post basis, it risks penalizing patentees that in good faith believed its patent was valid and having the courts second-guess the patentee with the benefit of hindsight. This would inflict particular hardship on patentees given the often-unpredictable nature of patent trials.

Having settled on the ex ante perspective, it remains to be decided whether it should be the patentee's subjective perception of patent validity or some objective assessment of what a reasonable patentee would believe in light of the information available to it. The former test is probably easier to administer in that it boils down to simple evidentiary proof of what the patentee herself thought. However, it would be susceptible to abuse. Once patentees know that their contemporaneous statements about patent validity would determine the legality of the no challenge clauses they want to impose, they would inflate their expectations.[257] The latter test will avoid this problem as it does not rely on the party's subjective assessment. It will require an assessment of what a reasonable patentee's belief about validity would be in light of the information at its disposal. For example, if the patent turns

[256] Hovenkamp, Janis, and Lemley assert that reverse payments should be presumptively illegal unless the defendant can show, among other things, that "the ex ante likelihood of prevailing in its infringement lawsuit is significant". *Id.* at 1759. Crane argues the same. Crane, *supra* note 171, at 750. The Department of Justice also shares a similar view. Brief for the United States in Response to the Court's invitation at 10, 22, 28-32, *Ark. Carpenters Health & Wealth Fund*, 604 F.3d 98 (2d Cir. 2010) (Nos. 05-2851-cv(L), 05-2852-cv (CON), 05-2863-cv (CON)), 2009 WL 8385027, at *10, *22, *28-32.

[257] Elhauge & Krueger, *supra* note 169, at 289.

out to be invalid because of anticipation by prior art, which the patentee could not have discovered after reasonable search effort, but otherwise the patent looks valid, it would be reasonable for the patentee to believe ex ante that the patent is valid. This approach would probably entail some inquiry into the objective merits of the patent that Elhauge and Krueger warn against.[258] However, it should avoid a full-fledged trial on the merits of the patent that can be extremely costly and cumbersome.[259]

4. Market Structure at the Licensee Level

The extent of competition among licensees will shed light on the prospect of consumer harm resulting from a no challenge clause. The first issue to confront is whether there is only one exclusive licensee or multiple licensees. This is important for a variety of reasons. First, assuming that the patent provides the patentee with monopoly profit, it would be the easiest for the patentee to share its monopoly profit with one licensee, especially if the patentee does not herself engage in production.[260] The patentee and the licensee will simply negotiate for a split of the monopoly profit by structuring the royalty payment. If, however, there are multiple licensees, and the patentee is unable to restrict competition among them, the monopoly profit can be easily competed away and there would be little to share with the licensees. Therefore, an exclusive license is more conducive to profit sharing between a patentee and a licensee. An exclusive license would be especially suspicious if the no challenge clause is unenforceable under the patent law of the jurisdiction, which means that the agreement is more likely than not a conspiracy between the patentee and the licensee to split profit from a questionable patent.

A related point is whether the patentee also competes in the downstream market; in other words, whether the agreement between the patentee and the licensee is purely vertical or also contains a horizontal element. If the relationship is purely vertical, the licensee may have fewer incentives to challenge the patent,

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[258] *Id*.

[259] *Id*. at 288.

[260] If the patentee itself also engages in production of the final product, the patentee must be able to coordinate output with the licensee to maintain output at the monopolist level. Otherwise, excess production will pushes prices below the monopolist level. This would not be too difficult to achieve if the patentee produces the key input incorporating the technology itself and the input is used at a fixed ratio to the final product. In that case, the patentee can control the final product output level of the licensee by restricting the supply of the input. If, however, these two fairly restrictive conditions do not hold, the patentee may need to impose some sort of direct restriction on the final output level, which may run afoul of antitrust law.

as she will have less to gain from the patent invalidation. In that case, a no challenge clause may not do much harm. If the licensee and the patentee do compete, the licensee will have greater incentives to challenge the validity of the patent, especially when the licensee does not enjoy a sufficient cost advantage to offset the royalty payment, which means that the licensee's products will always be at a cost disadvantage in the market. Invalidating the patent will thus help to remove this cost disadvantage. In that case, a no challenge clause could preclude a likely challenge. Commentators have gone so far as to argue that it may be a good idea to exempt no challenge clauses in purely vertical relationships.[261] This may be taking the argument too far, as no challenge clauses can produce anticompetitive effects even in purely vertical relationships. Nonetheless, it remains true that the harm of a no challenge clause is likely to be smaller in a purely vertical relationship.

Having multiple licensees means that the post-invalidation market will be more competitive by virtue of the greater number of competitors. It blunts whatever comparative advantage or first-mover advantage that the licensees may enjoy over third party entrants.[262] Licensees will have less to gain in the event of a successful challenge and fewer incentives to mount a validity challenge, resulting in a lower θ_L. Accordingly, the licensing exclusion period is less likely to exceed the expected exclusion period. A no challenge clause in the presence of multiple licensees is hence less likely to result in consumer harm. On a related point, if there are multiple licensees, the patentee may be tempted to forestall competition among them through licensing restrictions such as price, output, or territorial restrictions. These restrictions will help to preserve the monopoly profit and will also increase the loss to a licensee in the event of a successful validity challenge. By bolstering the profit of the licensees, the patentee will discourage a licensee from mounting a validity challenge. This may suggest that the patentee has greater doubts about the validity of the patent and therefore the no challenge clause may be more suspect.

If there are no license restrictions imposed on the licensees and the licensees are highly competitive with each other, then there is less concern about the supra-competitive prices imposed by the patentee. A supra-competitive royalty would only result in higher final product prices for consumers if the market for the licensees was uncompetitive. In a competitive market, the licensees would be forced to absorb the extra cost and would not be able to pass it on to consumers.

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[261] Orstavik, *supra* note 7, at 108.
[262] Miller & Gal, *supra* note 6, at 149.

Competition among licensees will be particularly keen if the final product is homogeneous and Bertrand competition prevails among them.[263] Consumers will also benefit more from third party entry if the market is characterized by Bertrand competition.[264] In contrast, if the final product is heterogeneous and the market is characterized by Cournot competition, the licensees will be better able to pass the royalty burden on to consumers, and the no challenge clause would be a greater concern.[265]

Moreover, the royalty structure would also have an impact on the extent to which the royalty burden will be passed on to consumers. If the patentee charges a one-time lump-sum payment, the royalty would be a one-time fixed cost that will not be passed on to consumers. It is only when the royalty is charged on a percentage basis of output, revenue, or profit that it constitutes a variable cost that will be possibly passed on to consumers.[266]

Licensee incentives to challenge may be fueled by economic incentives resulting from market structure. As mentioned earlier, licensee incentives to challenge may also be determined by advantages of a technical, cost, or commercial kind of a particular licensee over other licensees and third parties. If a particular licensee has a marked advantage over other licensees, she may benefit more from unfettered competition in a post-invalidation market. Likewise, if a licensee has an advantage over third parties, she may be less deterred by the

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[263] Daniel F. Spulber, *Bertrand Competition When Rivals' Costs Are Unknown*, 43 J. INDUS. ECON. 1 (1995).

[264] *See* Shapiro, *supra* note 171, at 401. Bertrand competition refers to an oligopolistic market in which firms produce homogenous product and compete on price. Competition will eventually drive the price to the level of marginal cost and firms earn no supra-competitive profit. DAVID BESANKO & RONALD R. BRAEUTIGAM, MICROECONOMICS 533-34 (4th ed. 2010).

[265] Cournot competition refers to an oligopolistic market in which firms produce differentiated products and compete on output level. Prices will exceed marginal cost and firms will exhibit some market power. BESANKO & BRAEUTIGAM, *supra* note 264, at 535-40.

[266] A final remark is in order. The foregoing discussion may seem to exhibit a degree of inconsistency in that in some instances, a reduced incentive to challenge as a result in market conditions points to legality, while in some other instances it suggests illegality. The reason this is the case is because one needs to look deeper to see what are the reasons for the reduced incentive. If the reduced incentive is due to sharing or bolstering of monopoly profit by the patentee, for example, by way of favorable royalty or license restrictions, it suggests that the patentee has serious doubts about the validity of the patent and needs to induce licensees to accede to a no challenge clause with increased profit. In that case, reduced incentive points to illegality. If, however, the reduced incentive is due to competitive pressure in the market, for example, because of the existence of multiple licensees or a homogeneous product in the market, then reduced incentive is a positive indication that the no challenge clause does not foreclose likely challenges. In that case, reduced incentive to challenge suggests legality.

prospect of post-invalidation third party challenges from mounting a validity challenge. In both circumstances, the licensee will have strong incentives to challenge, and a no challenge clause will be harmful by blocking likely challenges. A third party may also enjoy an advantage in technical know-how, cost, or commercial attributes. To the extent that a third party enjoys such an advantage, it will be more likely to challenge the patent, in which case the no challenge clause will not inflict much harm by precluding licensee challenges.

IV
JUSTIFICATIONS FOR NO CHALLENGE CLAUSES

A host of arguments, some based on innovation incentives, and some on transaction costs, have been offered to justify the upholding of no challenge clauses across the board. This section examines these arguments and concludes that none of them justifies a blanket approval of no challenge clause, regardless of potential harm to consumers.

A. Dynamic Efficiency Justifications

1. Prohibiting No Challenge Clauses Would Cause Patentees Not to License the Patent

Some argue that if no challenge clauses were prohibited, patentees would be discouraged from engaging in licensing at all, which would have adverse welfare consequences.[267] It is widely agreed that licensing can be welfare enhancing.[268] A patentee may choose to license its technology to a third party producer because that producer has lower costs of production, a better distribution network, or an otherwise superior ability to commercialize the product.[269] If the patentee is forced to forego this option, she may do one of the following three things. First, she may choose to commercialize the product on her own, even though she may have to do so at higher costs. Second, she may have to choose an inferior downstream producer which may for one reason or another be less likely to challenge the patent. And the comparative advantage of licensees and their incentives to challenge are often correlated.[270] Lastly, if the technology is difficult to reverse

[267] *See* Miller & Gal, *supra* note 6, at 148, Taylor, *supra* note 22, at 233.

[268] Morris, *supra* note 119, at 229.

[269] *See id.*

[270] Miller & Gal, *supra* note 6, at 148 (The patentee may choose to license the patent to a less efficient licensee "that does not have the resources, stamina, or knowledge to challenge the patent. In particular, P may choose a firm that lacks a significant comparative advantage over other potential producers, since it is often the comparative advantage that propels a licensee to challenge the patent and capitalize on first-mover status.").

engineer, she may choose to rely on trade secret protection instead. Society would be worse off in this case because without the disclosure mandated by the patent system, it may never benefit from the knowledge following from the invention.[271]

In a regime where no challenge clauses are prohibited if the patent is of questionable validity ex ante, prior to making the decision to license its invention, the patentee will perform the following analysis. She will examine its patent closely and decide how strong it is. If she believes that the patent is strong, she first would have much less to worry about from validity challenges. In any case, the legal framework proposed in the previous section would allow this patentee to impose a no challenge clause, so long as the belief in patent validity is reasonable. The patentee can safely proceed to license its patent. If she believes that the patent is weak, she will have to decide whether she wants to take a chance, especially when she knows that licensees will learn more about the technology from the commercialization process and be in a better position to challenge. Patentees are uniquely placed to evaluate their own patents as they may have access to unique information pertaining to patent validity.[272] They should be able to make this choice in a very well informed manner. If we allow the owner of a weak patent to impose a no challenge clause, the patentee will be able to enjoy the double benefit of profiting from a patent of questionable validity and doing so in the most cost-effective manner by deploying the most efficient downstream producers. There are good reasons to question whether owners of such a patent should be afforded such an advantage.

A related concern is whether it is fair to allow licensees to use information provided by the patentee or otherwise gleaned from the commercialization process to launch a validity challenge. A possible objection is that it is unfair to allow the licensees to use information provided by the patentee against the patentee. There are two reasons that this should not be a serious concern. First, the extent to which this is a concern is inversely related to the strength of a patent. The owner of a strong patent is unlikely to be too worried about such a challenge. Second, the patentee has control over what information to disclose, so she could presumably choose to hide incriminating information from the licensees. If it turns out that it is impossible to impart sufficient technical knowledge to the licensees to commercialize the technology without also revealing incriminating information, it would suggest that the flaw in the patent is quite fundamental. One wonders

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[271] *Id.*

[272] Dreyfuss & Pope, *supra* note 16, at 991. For example, only the patentee is likely to know the true date of invention and the identity of the inventor.

whether the law should provide assistance to facilitate the continual validity of such a patent.

2. Prohibiting No Challenge Clauses Would Allow Patentees to Protect Themselves from Erroneous Invalidation by the Courts

Due to the probabilistic nature of patents, patents may be erroneously struck down by the courts and therefore patentees are entitled to use no challenge clauses to guard against that risk. Some say that it is in the "interest" of patentees to shield their patents from challenges.[273] Others assert that "[a]n increased rate of challenges to patent applications might create a super-optimal number of false negatives … That, in turn, could lead to sub-optimal investment in innovation."[274] Of course it is in the interests of patentees to protect their patent rights, just like it is in the interests of competitors to fix prices. However, the question is whether this is an interest worthy of protection under antitrust law. These arguments betray a fundamental misunderstanding of the probabilistic nature of patent rights. These rights are uncertain because of the various requirements of patentability, which do not lend themselves to application with mathematical precision, and because of the need to delineate the boundary of a patent by interpreting its claims, which has an element of subjectivity like every other interpretation exercise. Inherent in this uncertainty are two elements: (1) the same fact may be subject to different, but equally reasonable and valid, interpretations that may produce different results, (2) and the conclusion may simply be wrong. For example, reasonable people may differ on whether a particular invention is novel enough to warrant patent protection, which falls within the first kind of uncertainty. Meanwhile, whether the invention was in public use more than a year before the date of the application falls within the second kind of uncertainty, for which there is usually a definitive answer. In the ideal world, we would like to eliminate the second source of uncertainty while preserving the first, for the first source of uncertainty is inherent in the nature of patents. However, no one has devised a mechanism that will allow us to do that. No challenge clauses remove the second source of uncertainty, but unfortunately also eliminate the first.

The elimination of the first source of uncertainty results in overcompensation for the patentees. Patentees are entitled to rewards in the form of a royalty or supra-competitive prices. However, this reward should be adjusted by the probability that the patent will be held invalid. Patentees were never meant to

[273] Orstavik, *supra* note 7, at 101.
[274] Crane, *supra* note 171, at 756.

be entitled to receive a risk-free reward for their inventions.[275] As Hovenkamp, Janis, and Lemley argue, "[a]ssertions that patentees are entitled to treat their patents as free from uncertainty, or that they will not receive the proper incentives unless allowed to exclude competitors on the basis of dubious patents, simply misunderstand the structure of the patent system."[276] The corollary of the assertion that patentee reward is by nature risk-adjusted, is that patentees are not entitled to expunge the risk in its reward by imposing no challenge clauses.

Moreover, susceptibility to the second source of uncertainty is not unique to patents. Every property right or other kinds of economic entitlement that require court adjudication are susceptible to false negatives. No one has argued that owners of these economic entitlements, such as contractual rights, should be allowed to shield themselves from erroneous adjudication by barring legal challenges. There are no obvious reasons that patentees should be given special treatment.

3. Prohibiting No Challenge Clauses Would Reduce Incentives to Innovate

Another argument related to the one described immediately above is that prohibiting no challenge clauses and allowing licensees to mount indiscriminate challenges would bring uncertainty to patentee reward and undermine innovation incentives.[277] For the quid pro quo underlying the patent system to function properly, "inventors need to be confident that their rights will be secure. Such confidence is fundamental to providing this incentive to innovate."[278] The same argument used to dismiss the concern about false negatives in patent validity applies with equal force here. Patentees should only be entitled to risk-adjusted reward for their invention.[279] So long as they receive such a reward, innovation incentives will be properly maintained. In fact, if all patentees, regardless of the strength of their patents, receive a risk-free reward, there will be over-compensation for weak patents.[280] Weaker patents may be less novel and have less technical merit that deserves less compensation from society. Since weak patents are presumably easier and less costly to come up with (perhaps because they are less novel or more obvious), potential inventors will rationally gravitate toward investing in inventions of more questionable merit. Because no challenge clauses

[275] Shapiro, *supra* note 171, at 435.

[276] Hovenkamp, Janis & Lemley, *supra* note 170, at 1761.

[277] Crane similarly argued that prohibiting reverse payments would undermine innovation incentives. *See* Crane, *supra* note 171, at 751.

[278] Roper, *supra* note 209, at 1662.

[279] Shapiro, *supra* note 171, at 395.

[280] Elhauge & Krueger, *supra* note 169, at 294.

produce greater consumer harm when the patent is weak, the concern that the prohibition of no challenge clauses will hamper innovation incentives is unfounded.

Other scholars raise a slightly different argument. No challenge clauses will not result in invalidation of questionable patents but will simply result in less return to patentees.[281] They describe the chain of events as follows. "At the time of a challenge, the risk that the patent will be invalidated could lead the patent holder to settle on highly unfavorable terms. In such cases, the patent will remain in force. Accordingly, society will not gain free access to the invention. The patent holder will, however, lose revenue, leading to an impairment of patent value and a decrease in incentives to invent."[282] At first glance, this argument appears to undermine the premise that at least under some circumstances, prohibiting no challenge clauses will result in invalidation of questionable patents. Upon closer analysis, however, these arguments are unsupported. This argument poses two issues: the wealth transfer from patentees to licensees and the lack of invalidation of questionable patents. In regards to the first issue, wealth transfers between patentees and licensees are of no concern to antitrust law as long as they do not inflict harm on consumers. Wealth transfer from the patentee presumably will reduce innovation incentives, and the decrease in innovation incentives argument has been addressed above. In regards to the second issue, the lack of invalidation of questionable patents is of course a serious concern, but the problem is overstated. First, if the patent is so weak, it is unlikely that the patentee can recruit the licensee to settle the invalidity suit without offering some substantial financial incentives,[283] such as reverse payments. So long as reverse payments are carefully scrutinized by the Agencies and the courts—as they are—the patentee will have limited ability to settle these suits. Second, one would expect that if patentees are constantly forced to share a substantial portion of their surplus to get a licensee to agree to settle the invalidity suit, the return for investing in such weak patents will decrease over time and fewer and fewer patentees will pursue these patents.[284] This is likely to be beneficial to society in the long run.

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[281] Dreyfuss & Pope, *supra* note 16, at 974.

[282] *Id.*

[283] How substantial the financial incentives will be will depend on how lucrative the market is and how much market power the patent wields.

[284] Elhauge & Krueger, *supra* note 169, at 294.

B. Transaction Costs-Based Justifications

1. No Challenge Clauses Protect Patentees from Wasteful and Vexatious Litigation

One commonly invoked justification for no challenge clauses is that they protect patentees from wasteful and vexatious lawsuits from licensees.[285] Litigation costs are transaction costs in the patent system that can be avoided by no challenge clauses. There are two layers in this argument. First, the litigation costs incurred in these invalidity suits are wasteful and to be avoided if possible. Second, patentees may sometimes need no challenge clauses to protect themselves from aggressive or bad faith licensees. It is a common misconception that patentees must hold greater bargaining power than the licensees, and patentees coerce the licensees to accept oppressive contract terms. For example, in *MedImmune*, the Supreme Court "mistakenly characterized a licensing situation as inherently 'coercive' and akin to government regulatory action." [286] On the contrary, patentees that are thinly capitalized or in emerging sectors such as biotechnology may suffer from power asymmetry problems and have poor bargaining power.[287] Occasionally, there are bad faith licensees who enter into a licensing agreement simply to challenge patent validity.[288] According to Alfaro, "licensees will [after MedImmune] seek to enter into license agreements in an attempt to cap their exposure to infringement liability and then seek a declaratory judgment on the validity of the patent in an attempt to avoid that exposure altogether."[289]

Although an invalidity suit brings about litigations costs, these costs are not necessarily wasteful. As has been acknowledged in this article, if it was known a priori that the patent is valid, then invalidity suits would indeed be needless and wasteful, and no challenge clauses would serve a useful function. However, there is no way to know the validity of a patent until it has been adjudicated in court. Therefore, such litigation expenses are the necessary consequence of probabilistic patents and the imperfections of the patent examination system administered by the Patent and Trademark Office.[290] Moreover, not every patent will be examined judicially. Only patents that are economically valuable will be so examined. And if a patent is valuable—perhaps because it commands market power—then it may not

[285] Taylor, *supra* note 22, at 216, 227.
[286] Ritchie, *supra* note 14, at 142.
[287] Dreyfuss & Pope, *supra* note 16, at 988.
[288] Taylor, *supra* note 22, at 216.
[289] Alfaro, *supra* note 32, at 1304.
[290] Allison & Lemley, *supra* note 186, at 205.

be a bad idea for society to expend some resources to ensure that the supra-competitive prices are not borne in vain.

As for protection from bad faith or aggressive licensees, one cannot argue against protection from vexatious lawsuits, especially for patentees that have poor bargaining power or are otherwise unable to protect themselves. Such lawsuits serve no useful purpose in society and merely incur needless costs. Patentees, weak or strong, deserve protection from them. However, an invalidity lawsuit is only groundless if the validity of the patent is strong. For patents of questionable validity, such suits can no longer be called vexatious. They do in fact serve a useful social purpose. The framework proposed in this article concedes that no challenge clauses would be permissible if a reasonable patentee, ex ante, would believe that the patent is valid in light of the information available to her. Therefore, no challenge clauses would only be subject to antitrust scrutiny if the patent was of questionable validity ex ante. For such patents, invalidity suits would no longer be vexatious, and patentees should then not be shielded from them.

2. Prohibiting No Challenge Clauses Will Reduce Licensees' Incentive to Scrutinize Patent Validity before Entering into a Licensing Agreement

It has also been argued that if no challenge clauses are allowed and enforced, they will merely force licensees to undertake careful scrutiny of the patents in advance and bring up any dispute before they enter into a licensing agreement.[291] Such validity disputes will be more easily settled when the licensees have not invested in commercializing the technology, and the patentee and the licensee are not entangled in a licensing relationship. Licensees also avoid paying unnecessary royalties. Society will be better off if invalid patents are weeded out early.

This argument would be valid if licensees had the same knowledge and economic incentives to challenge the patent before and after entering into the licensing agreement, but they do not. Pre-licensing evaluations of patent validity are unlikely to be perfect due to licensee inability to acquire information uniquely in the hands of the patentee and perhaps also third parties.[292] Licensees may acquire important information about the technology in the process of commercialization. The informational advantages of licensees over third parties discussed previously would put licensees in a much better position to challenge the patent after, as opposed to before the agreement is reached.[293] Licensees may also want to hold off mounting a challenge until they have acquired a first mover advantage in the

[291] Dreyfuss & Pope, *supra* note 16, at 988.
[292] *See supra* note 269.
[293] *See* discussion *supra* Section I.A.

market.[294] After the patent is invalidated, the market will likely become competitive, and a licensee with a first mover advantage will have a significant edge over potential new entrants. Recall that in a market with homogeneous product and Bertrand competition, even a firm that is equally efficient as existing licensees would not enter the market. Therefore, pre-licensing challenges are no substitute for post-licensing challenges.

C. Other Justifications

1. Prohibiting No Challenge Clauses Will Result in Higher Royalty

A number of commentators have argued that, contrary to intuitive belief, prohibiting no challenge clauses would not only fail to bring down prices for consumers, but could result in higher royalties, which could result in higher prices for consumers.[295] Their argument is that when a patentee can impose a no challenge clause, she is more assured that the patent will not be challenged, and its royalty income stream will continue.[296] However, when the no challenge clause is deemed unlawful, the patentee would charge a higher royalty for the higher risk she now assumes. This would be a very damaging charge, as it essentially predicts that antitrust regulation of no challenge clauses would be counterproductive.

This argument should not shield no challenge clauses from antitrust scrutiny for two reasons. First, not every patentee can pass on the extra risks she assumes in the form of higher royalty. This depends on the bargaining power of the patentee, which in turn depends on its market power.[297] Not every patentee wields market power ,so not every patentee will be able to pass on the extra risks to the licensees. Second, and more importantly, the effect of antitrust scrutiny should be evaluated from an aggregate perspective. In some instances, consumers may have to pay higher royalty indirectly through higher product prices when certain patentees cannot employ no challenge clauses. While in other instances, they would benefit when the absence of no challenge clauses allows licensees to challenge invalid patents and royalties are removed for technologies covered by these patents. Prices for products incorporating these technologies would presumably drop. It is difficult to conclude a priori that consumers are necessarily worse off in this new state of affairs. It is entirely possible that consumers may benefit more from the elimination of royalties in some products while suffering from slightly higher

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[294] Miller & Gal, *supra* note 6, at 153.

[295] *Id.* at 150; Taylor, *supra* note 22, at 233; Brenner, *supra* note 47, at 58, 66-68.

[296] Miller & Gal, *supra* note 6, at 150; Taylor, *supra* note 22, at 233; Brenner, *supra* note 47, at 58, 66-68.

[297] Dreyfuss & Pope, *supra* note 16, at 987.

royalties in other products, especially when the patentee is unable to pass on the full costs of the extra risks to the licensees. Therefore, it is inaccurate to say that antitrust regulation of no challenge clauses would be counterproductive.

V
PROPOSED ANALYTICAL FRAMEWORK

A. The Proposed Framework

In light of the foregoing discussion, this article proposes a new analytical framework for determining the legality of no challenge clauses. However, first it is important to clarify the implications of the algebraic expressions for the licensing exclusion period and the expected exclusion period. As explained previously, whether a no challenge clause inflicts consumer harm entails a comparison of two periods. If the licensing exclusion period exceeds the expected exclusion period, the no challenge clause should be deemed illegal. By simply looking at the two expressions, it would be obvious that under almost all circumstances, the licensing exclusion period would be longer than the expected exclusion period due to the presence of the term ($\theta_L * \theta_{IL}$) in the expression for the expected exclusion period. The two periods would only be the same if this term equals zero, which is highly unlikely if there is a more than negligible chance that licensees would bring successful challenges. The implication would be that no challenge clauses should be illegal across the board.

Two clarifications are in order. First, no challenge clauses would only be an antitrust concern if the patent wields market power. Therefore, the comparison between these two expressions would not be undertaken at all for many no challenge clauses. Second, it is highly unlikely that an actual calculation of these two periods will be attempted in judicial proceedings. Many of the variables in these two expressions are difficult to ascertain and any offer of estimation results for these variables is likely to be challenged by the opposing party. In practice, judicial proceedings will likely boil down to a qualitative evaluation of the various indicators of the probability and likelihood of success of challenges and hence consumer harm. No challenge clauses are unlikely to be condemned unless they substantially increase the licensing exclusion period above the expected exclusion period.

Four factors have been enumerated for consideration in determining the likelihood of consumer harm: types of agreement, market power, patent validity, and market structure at the licensee level. Two of them can be dealt with here. For the purpose of the legality of no challenge clauses, no distinction should be drawn between licensing agreements and settlement agreements. Meanwhile, consent

decrees should be beyond the reach of antitrust law. Whether the myriad variations of no challenge clauses should be treated the same depends on the deterrent effect on challenges wrought by the clause at issue. This would entail a case-by-case analysis. The foregoing discussion should make it clear that, unsurprisingly, no challenge clauses should be subject to the Rule of Reason, and not a per se treatment.[298] The extent of consumer harm of these clauses is so circumstance-specific that an individual examination is necessary. One cannot categorically say in advance that they are always legal or illegal. And as no challenge clauses will not create consumer harm absent market power, the first part of the analytical framework would be a market power screen.[299] If the plaintiff fails to show that the patent at issue wields market power, the case should be dismissed right away.[300]

Another feature to be considered early in the analysis is whether the no challenge clause is enforceable in the jurisdiction at issue, to the extent that it can be ascertained. This is relevant because if no challenge clauses are unenforceable, but licensees still voluntarily agree to abide by them, it is valid to question why the licensee would do so. However, it may not be possible to tell whether a licensee refrains from challenging because of a conspiracy between itself and the patentee or because the licensee genuinely believes that the patent is valid. It then becomes important to examine whether the licensee has been offered unusually generous licensing terms or other financial incentives. One obvious reason that the patentee will offer such generous incentives is because she wants to protect a weak patent.

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[298] HOVENKAMP, *supra* note 34, at § 5.6.

[299] Recall that under the NDRC draft guidelines, no challenge clauses are treated as both a potential restrictive agreement and an abuse of dominance. Transposed to the U.S., it means they would fall under both Section 1 and Section 2 of the Sherman Act. Given the necessary existence of an agreement, no challenge clauses would definitely fall under Section 1. No challenge clauses could probably qualify as a monopolization offense under Section 2 provided monopoly power. However, given the substantially higher market power threshold under Section 2, in reality, it is likely that most plaintiffs would invoke Section 1 rather than Section 2, just as in the case of tying and exclusive dealing (although in the case of the latter, Section 3 of the Clayton Act is also invoked).

[300] The application of this market power screen would be more complicated if the case concerns a portfolio patents, and as is often the case, a portfolio of SEPs. If the case concerns an SEP portfolio, on one level it is simpler because market power is obvious. On another level, it is more complicated because no challenge clauses will only have an anticompetitive potential with respect to a patent portfolio if it can be shown that there are a small number of highly important patents in the portfolio while the rest are subsidiary. Otherwise, if the patents in the portfolio are of roughly equal importance, Sidak was right that the invalidation of a handful of patents would not make much of a difference. Therefore, if the case concerns a patent portfolio, it is incumbent on the plaintiff to show that the invalidation of a small number of patents will have a decisive impact on the amount of market power wielded by the portfolio.

Therefore, the unenforceability of the clause together with unusually generous financial incentives could be viewed as a strong indication of likely consumer harm. Of course, if the agreement is accompanied by generous reverse payments by the patentee to the licensee, it should attract antitrust scrutiny, as it would under *Actavis*.[301] However, even in the absence of a reverse payment, the licensee could still be offered an advantageous royalty rate, which may indicate an attempt by the patentee to recruit the licensee into a conspiracy.

Next, the defendant should be given the opportunity to offer two affirmative defenses. The first is based on the notion that no challenge clauses will not inflict harm on consumers if the patent turns out to be valid because the clauses only serve to avoid needless litigation expenses. Therefore, if the defendant can prove that a reasonable patentee with the information accessible to the defendant ex ante would believe that the patent is valid, the case should be dismissed. The second is premised on the idea that a no challenge clause would not help to defend an invalid patent if in spite of it, a third party with a similar level of knowledge as the licensees was likely to launch a validity challenge. This defense is necessary because the remainder of the analysis focuses on the licensee challenges. This is the only place in the analytical framework where third parties are considered. This defense has two components: the probability of a third party challenge and the probability of success of a third party challenge. Recall from previous discussion that two of the factors that need to be considered in analyzing the extent of consumer harm of no challenge clauses are the probability of a third party challenge, and the probability of success for a third party challenge.[302] These factors are the focus of this second affirmative defense.

Determining the probability of a third party challenge necessitates a consideration of the signaling effect of no challenge clauses in licensing agreements; that is, the extent to which third parties are deterred from mounting validity challenges due to the existence of no challenge clauses. Another relevant factor is whether a third party enjoys technical, cost, or commercial advantages over the licensees and other third parties that it would be likely to bring a challenge. The proof of a similar level of knowledge is important because licensees usually enjoy informational advantages over third parties in mounting validity challenges. The level of knowledge serves as a proxy for the probability of success of a third party challenge. The probability of third party challenge and the probability of success required can be adjusted depending on the magnitude of probable consumer harm. If the patent wields a substantial degree of market power

[301] Fed. Trade Comm'n v. Actavis, 570 U.S. 756 (2013).

[302] There was also market power, which has already been dealt with.

or perhaps even is monopolistic, the courts should only let a defendant off if a third party challenge is highly probable and likely to succeed. If the magnitude of probable consumer harm is lower, showing a lower degree of likelihood and probability of success may suffice. This defense admittedly may be difficult to establish given the knowledge requirement. However, this requirement is necessary to ensure that the challenge that may materialize would be effective.

If the plaintiff manages to prove market power and the two affirmative defenses are unavailable, then the analysis moves to a holistic assessment of the relationship between the patentee and the licensees and the market structure at the licensee level. These are relevant for determining what kind of economic incentives are present, which determines the probability of a licensee challenge.[303] As discussed earlier, economic incentives are relevant because they tell us both how hard the patentee is trying to entice the licensees not to challenge and how much harm is being done by the no challenge clause as indicated by how likely challenge is being blocked. If the assessment shows that the market structure is such that licensees have substantial incentives to challenge, then the no challenge clause will be blocking a probable challenge. Likewise, if there are indications that the patentee is offering licensees substantial financial incentives, then there are grounds to question the validity of the patent, which means that the no challenge clauses do artificially extend the period during which consumers are saddled with supra-competitive prices. In both cases, the no challenge clause should be struck down. One final aspect of the market structure to consider is whether competition is keen at the licensee level. If it is so, then the licensees would have limited ability to pass on the royalty payment onto the final consumers, in which case consumers suffer little harm even if the patent turns out to be invalid. Lastly, one also needs to consider whether a licensee enjoys technical, cost or commercial advantages over other licensees such that she has strong incentives to bring a challenge. If such a licensee exists, a no challenge clause will be more damaging.

Finally, to account for the competitive harm of no challenge clauses in hindering the exploitation of a blocked patent, the plaintiff should be required to show that the blocked patent is commercially valuable and was only created after the second inventor had entered into a licensing agreement with a no challenge

[303] (2) is not examined in this analytical framework because whatever the probability of success for licensee challenges is, it represents the best chance we have to invalidate the potentially invalid patent. It is important to consider the probability of third party success because we need to ensure that third party challenges can serve as a substitute for licensee challenges. But given the licensee challenges are the best chance we have, the analysis will simply have to take it as a given depending the factual circumstances of each case.

clause with the initial patentee. The proof of commercial value is important because blocking a patent of little commercial value will not result in significant harm to consumers.

B. An Evaluation of the Approaches Taken by the Three Jurisdictions

It should be obvious that none of the three jurisdictions surveyed currently take a suitable approach to no challenge clauses. To the extent the lack of case law on these clauses in the U.S. is a reflection of per se legality under antitrust law, the current standard is clearly too lenient. It has been amply illustrated in this article that no challenge clauses can cause consumer harm under certain, albeit somewhat narrow, circumstances. Therefore, a per se legality approach is unwarranted.

Meanwhile, the EU approaches (to the extent that the Commission's approach under the TTBER differs from the court's approach) in some places are fairly consistent with the analysis in this article. Arguably the part of the EU jurisprudence on no challenge clauses most consistent with the reasoning in this article is *Bayer v. Süllhöfer*, in which the ECJ declared that there is no reason to treat licensing and settlement agreements differently and a determination of the legality of these clauses entails an examination of the legal and economic contexts.[304] This is consistent with the general direction of this article's framework that there needs to be a Rule of Reason-type analysis of the economic incentives created by the market structure. The European Commission's approach is stricter than warranted by the economics of no challenge clauses. There are no good reasons to treat no challenge clauses as an excluded restriction, at least not without a proof of market power. The Commission's continual permissive attitude toward no challenge clauses in settlement agreements is unjustified, but its increasingly cautious attitude is a step in the right direction. Meanwhile, by saying that the focus is on whether the loss of profit would serve as a sufficient deterrent to licensee challenges, the Commission was spot on in its analysis of termination-upon-challenge clauses.

To the extent that the reference to "eliminate or restrict competition" in Article 10 of the SAIC Regulation entails a detailed analysis of competitive effects and market conditions, the SAIC's approach would be consistent with the analysis in this article.[305] The NDRC has manifested two approaches to no challenge clauses, one in its draft guidelines and the other in the *Qualcomm* decision. The enumeration of a number of factors to be considered in Article 2(1)(3) of the draft

[304] Case 65/86, Bayer AG v. Süllhöfer, 1988 E.C.R. 5249.

[305] Provisions on Prohibiting the Abuse of Intellectual Property Rights to Exclude and Restrain Competition, *supra* note 53, at art. 10.

guidelines is a step in the right direction, especially in comparison to the practically per se approach taken in the *Qualcomm* case. However, the factors listed are not exactly the relevant factors and fail to focus on the economic incentives of the licensees to challenge, which may depend on the market structure on the licensee level among other factors. The NDRC approach taken in the *Qualcomm* case is clearly problematic in light of the foregoing analysis. The NDRC's focus on the right of the licensees to challenge is misguided. And the complete lack of attention to the fact that the no challenge clauses in that case were applied to an SEP portfolio may have overstated the practical impact of these clauses. It is entirely possible that the invalidity of a handful of patents in Qualcomm's portfolio would make no difference to its market power. In that case, the claim should have been dismissed.

CONCLUSION

This article examines a patent licensing practice that has long escaped the attention of U.S. antitrust law. It analyzes the circumstances under which no challenge clauses can cause consumer harm and rejects the approach prevailing in Europe and in U.S. patent law that no challenge clauses are harmful because they frustrate the public policy of the removal of invalid patents. If that were the main policy consideration behind the analysis of no challenge clauses, it would result in a per se rule against them, which would be unduly harsh. Instead, it proposes an analytical framework that would allow the courts to approach these clauses in a systematic manner, giving due regard to the fact that many no challenge clauses do not pose consumer harm. The framework provides for a number of devices and defenses to help screen out cases in which consumer harm is unlikely, so that courts only need to get to the complex Rule of Reason analysis when it is truly necessary and likely to be fruitful. This article further explains how different elements in the market structure should illuminate the analysis and makes the important observation that market structure is relevant because it affects the economic incentives of licensees to challenge the patent. Importantly, this article rejects a number of dynamic efficiency-based justifications for no challenge clauses, and illustrates that not every licensing practice that enhances patentee reward is justified from an innovation incentives perspective.

Finally, this article provides an overview of how the approach to these clauses in the major jurisdictions diverges from each other and from the analysis in this article. This divergence could be problematic because licensing is often done on a global basis, and divergent rules will result in a patchwork of licensing practices. This is doubly unfortunate, as this means that the applicable rules will instead be determined by the location of the licensees, even though most of the

goods produced by them are traded globally. This will result in an unnecessary distortion in the global market for many technological goods, an unfortunate outcome that is wholly avoidable by greater convergence in the regulation of patent licensing practices.