

FRAND AND ANTITRUST

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INTRODUCTION

Standard Setting Organizations (SSOs) create technology standards in order to ensure product or service quality, promote compatibility and interoperability of networked products, and facilitate the competitive development of new technologies.¹ Standard-setting in patent-rich environments often requires participants to disclose relevant patents that they own and license patents essential to the standard to all participants on fair, reasonable, and nondiscriminatory (FRAND) terms. A statement issued in December 2019 by three federal agencies acknowledges the value of FRAND commitments and described them as occurring:

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¹ On the role of the antitrust laws in standard setting, see 2 HERBERT HOVENKAMP ET AL., *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW*, § 35 (3d ed. 2015 & 2020 Supp.) [hereinafter HOVENKAMP ET AL., *IP AND ANTITRUST*]; 13 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶ 2230–35 (4th ed. 2019).

where a patent holder has voluntarily agreed to make available a license for the patent on reasonable and non-discriminatory (RAND) terms or fair, reasonable, and non-discriminatory (FRAND) terms while participating in standards-setting activities at a standards-developing organization (SDO).²

As the statement indicates, the essence of FRAND is that it is the product of a voluntary agreement among the participants, requiring them to make their patents available on FRAND terms.

Antitrust best achieves its purpose when it takes markets as it finds them, and then protects them from threats to competition. The antitrust tribunal must understand the market before it and the rationales and effects of its various rules. Then it considers whether a challenged restraint might operate anticompetitively so as to cause unnecessary consumer harm. For more than a century, antitrust jurisprudence has approached markets in this way. For example, Justice Brandeis's opinion in the *Board of Trade* case³ began by describing the Board's operation as a market. From that point the Court's job was to ascertain whether the challenged rule operated anticompetitively to undermine this purpose.⁴ In the *NCAA* case nearly seventy years later it did the same thing—acknowledging the valuable market created by this joint venture of colleges to promote amateur intercollegiate athletics. It condemned a restraint on competition that reduced output and harmed consumers and was not central to the NCAA's purpose.⁵ The list of cases in which the Supreme Court has followed this template so as to protect the competitive integrity of standard setting or other collaborative market processes is long.⁶

² UNITED STATES PATENT AND TRADEMARK OFFICE, NAT'L INST. STANDARDS TECH. & DEP'T OF JUSTICE, POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS 1 n.2 (2019), <https://www.uspto.gov/sites/default/files/documents/SEP%20policy%20statement%20signed.pdf> [<https://perma.cc/RR85-YZKT>] [hereinafter POLICY STATEMENT]. The terms "RAND" and "FRAND" today are usually used interchangeably.

³ *Chi. Bd. of Trade v. United States*, 246 U.S. 231 (1918).

⁴ *Id.* at 239–40 (explaining how the purpose of the challenged "call" rule operated to protect the integrity of the Board's price making). The Court dismissed the complaint.

⁵ *NCAA v. Board of Regents of Univ. of Okla.*, 468 U.S. 85 (1984) (striking down rule limiting the number of times a school could have its games televised).

⁶ *See, e.g., Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. 492 (1988) (anticompetitive agreement in context of building materials standard setting); *Am. Soc'y Mch. Eng'rs v. Hydrolevel Corp.*, 456 U.S. 556 (1982) (anticompetitive manipulation of standard setting process); *Goldfarb v. Va. State Bar*, 421 U.S. 773 (1975) (use of lawyer ethics rules to fix price of title search); *Radiant Burners, Inc. v. People's Gas Light & Coke Co.*, 364 U.S. 656 (1961) (sustaining allegation that

In a particularly myopic decision involving the FRAND process, the Ninth Circuit made no attempt to understand that process or how the antitrust laws could be used to protect it from anticompetitive restraints.⁷ That was not entirely the court's fault. Part of the blame lies with the Antitrust Division of the Justice Department, which intervened in the proceeding and seemed more intent on protecting Qualcomm than the competitive integrity of the FRAND process.⁸

While the FRAND process has been highly productive, it is also fragile. Firms are tempted to make commitments at the beginning when the incentive to join is large, but renege on them later when they can profit by doing so. At least in this particular case, private FRAND enforcement had not worked very well. Qualcomm had been able to violate FRAND commitments in order to exclude rivals and obtain higher royalties than FRAND would permit, largely with impunity. Other firms will very likely follow Qualcomm's lead. If that happens the FRAND system will fall apart, doing irreparable injury to the modern wireless telecommunications network or, at the very least, diminishing the leadership role of the United States in preserving effective network competition.

While governments can be heavily involved in standard setting,⁹ the implementation of technical standards in information technologies is largely the work of private actors. Government involvement is limited mainly to enforcement of contract, intellectual property, or antitrust law. As private actors, those involved in standard setting or compliance are fully subject to the federal antitrust laws.

This Article addresses one question: when is an SSO participant's violation of a FRAND commitment an antitrust violation, and if it is, of what kind and what are the implications for remedies? It warns against two extremes. One is thinking that any violation of a FRAND commitment is an antitrust violation

standard setting organization used process anticompetitively to exclude product without regard to merit); *United States v. Am. Med. Ass'n*, 317 U.S. 519 (1943) (government suit against AMA for standard opposing prepaid health care); see also *O'Bannon v. NCAA*, 802 F.3d 1049 (9th Cir. 2015), *cert. denied*, 137 S. Ct. 277 (2016) (striking down NCAA rule limiting athlete compensation); *Wilk v. Am. Med. Ass'n*, 719 F.2d 207 (7th Cir. 1983) (striking down AMA standard intended to exclude chiropractors).

⁷ *Qualcomm, Inc. v. FTC*, 969 F.3d 974, 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

⁸ See United States' Statement of Interest Concerning Qualcomm's Motion for Partial Stay of Injunction Pending Appeal, *Qualcomm, Inc.*, 2020 WL 4591476 (No. 19-16122), 2019 WL 3306496.

⁹ 2 HOVENKAMP ET AL., IP AND ANTITRUST, *supra* note 1, § 35.01[C][1].

as well. In the first instance FRAND obligations are contractual, and most breaches of contract do not violate any antitrust law. The other extreme is thinking that, because a FRAND violation is a breach of contract, it cannot also be an antitrust violation. The question of an antitrust violation does not depend on whether the conduct breached a particular agreement but rather on whether it caused competitive harm. This can happen because the conduct restrained trade under section 1 of the Sherman Act, was unreasonably exclusionary under section 2 of the Sherman Act, or amounted to an anticompetitive condition or understanding as defined by section 3 of the Clayton Act.¹⁰ The end goal is to identify practices that harm competition, thereby injuring consumers.

The Ninth Circuit's *Qualcomm* decision will make antitrust violations in the context of FRAND licensing much more difficult to prove, even in cases where anticompetitive behavior and consumer harm seem clear.¹¹ Indeed, in this case the court itself acknowledged the harm to consumers but appeared to think that they were not entitled to protection.¹² If this decision stands, FRAND obligations will to a larger extent have to be settled through private litigation and the federal antitrust enforcement agencies will have a diminished role. Anticompetitive behavior by one firm that is not effectively disciplined will lead others to do the same thing.

Not only did the Ninth Circuit reject application of the antitrust laws in this case, it also appeared to repudiate antitrust's consumer welfare principle, saying:

. . . [T]he district court correctly defined the relevant markets as “the market for CDMA modem chips and the market for premium LTE modem chips.” Nevertheless, its analysis of Qualcomm's business practices and their anticompetitive impact looked beyond these markets to the much larger market of cellular services generally. Thus, a substantial portion of the district court's ruling considered alleged economic harms to OEMs—who are Qualcomm's *customers*, not its competitors—resulting in higher prices to consumers. These harms,

¹⁰ See Clayton Act § 3, 15 U.S.C. § 14 (2018) (condemning certain sales “on the condition, agreement, or understanding” that the buyer will not deal in the goods of a competitor). Section 5 of the Federal Trade Commission Act is said to reach everything that the Sherman Act reaches plus some additional conduct, but we look mainly at Sherman and Clayton Act standards. 15 U.S.C. § 45; see *FTC v. Brown Shoe Co.*, 384 U.S. 316 (1966).

¹¹ See *Qualcomm Inc.*, 969 F.3d 974, 1003, 2020 WL 4591476 (declin[ing] to ascribe antitrust liability in . . . dynamic and rapidly changing technology markets without clearer proof of anticompetitive effect”).

¹² See discussion *infra* notes 13–14 and accompanying text.

even if real, are not “anticompetitive” in the antitrust sense—at least not *directly*—because they do not involve restraints on trade or exclusionary conduct in “the area of effective competition.”¹³

The quotation is from the Supreme Court’s decision in *Ohio v. American Express Co.*,¹⁴ where the Supreme Court said only that a relevant market is “the area of effective competition.” The Ninth Circuit panel apparently believed that antitrust harm could occur only to producers inside the relevant market, which typically excludes most customers. The Ninth Circuit did not quote the Supreme Court’s decision one year later in *Apple v. Pepper*,¹⁵ that “Ever since Congress overwhelmingly passed and President Benjamin Harrison signed the Sherman Act in 1890, ‘protecting consumers from monopoly prices’ has been ‘the central concern of antitrust.’”¹⁶

The very reason we condemn restraints under the antitrust laws is because they result in lower output and higher prices, harming consumers. The Ninth Circuit panel appeared to believe that higher prices for OEMs—that is, the manufacturer customers who purchase chips for inclusion in their devices—is not the kind of injury that concerns the antitrust laws. Rather, it must be harm to competitors.

Customers are often, even typically, not producers in the relevant market. Nevertheless, they are clearly antitrust’s protected class. For example, while exclusive dealing in the first instance might deny selling opportunities to a rival producer, we condemn it because it threatens price increases to their buyers and those who purchase from them. Indeed, the reason we have market power requirements in antitrust cases in the first place is to distinguish harms to rivals that are likely to result in market price increases from those that are not. Competitor exclusion in a competitive market is not an antitrust violation because, while it injures the competitor it does no consumer harm. That is the all-important difference between business torts and antitrust law.

Patent holders who participate in SSOs generally agree to provide timely disclosure of their patents or patent applications that are reasonably expected to read on the participants’ tech-

¹³ *Qualcomm*, 969 F.3d at 992 (emphasis in original) (citation omitted).

¹⁴ 138 S. Ct. 2274, 2285 (2018).

¹⁵ 149 S. Ct. 1514 (2019).

¹⁶ *Id.* at 1525 (quoting 2A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶1345, at 179 (4th ed. 2014)).

nology.¹⁷ They also agree in advance to license their patents thought to be essential to the standard on FRAND terms.¹⁸ The Patent Act itself does not impose this obligation. Patentees who are not involved in SSOs have no obligation other than market pressures to submit their patents to a standard or engage in FRAND licensing.¹⁹

In networked technologies, however, these market pressures can be substantial. For example, if a patentee refuses to commit its patented technology to an industry standard, the SSO is likely to adopt a different standard that is not believed to infringe those patents.²⁰ Or if a patentee refuses to commit to license a patent to all comers on a nondiscriminatory basis, then the SSO may respond by seeking an alternative standard.²¹ These actions are driven by the SSO's goal of competitive creation of a technology when interoperability among

¹⁷ On SSO members' duty to disclose, see, for example, *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1015–19 (Fed. Cir. 2008) (holding that Qualcomm breached its duty to disclose patents that reasonably might be necessary to practice the standard); *Apple Inc. v. Samsung Elecs. Co.*, 2012 WL 1672493, at *13 (N.D. Cal. May 14, 2012) (holding that Apple sufficiently pled that Samsung breached its duty to disclose intellectual property rights to the SSO); Joseph Farrell et al., *Standard Setting, Patents, and Hold-up*, 74 ANTITRUST L.J. 603, 628 (2007) (showing that SSOs may provide that “if members . . . do not ‘adequately and timely disclose’ essential patents, then those patents must be licensed royalty-free.”) (citation omitted); Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1919–21 (2002) (exploring the application of disclosure obligations and equitable estoppel in the SSO context) [hereinafter *Standard-Setting Organizations*]; Peter S. Menell, *Economic Analysis of Network Effects and Intellectual Property*, 34 BERKELEY TECH. L.J. 219, 301–02 (2019) (comparing two cases alleging that SSO members breached their disclosure duties);. However, establishing antitrust liability for failure to disclose has proven difficult. See, e.g., *Rambus Inc. v. FTC*, 522 F.3d 456, 469 (D.C. Cir. 2008) (finding no antitrust liability for failure to predispose that simply increased prices but did not exclude a known technology); *Wi-LAN Inc. v. LG Elecs., Inc.*, 382 F. Supp. 3d 1012, 1023 (S.D. Cal. 2019) (“Allegations of anticompetitive conduct based [on] a fraudulent FRAND declaration theory also must satisfy [a] heightened pleading standard.”).

¹⁸ Questions about measurement of FRAND royalties have produced significant case law and literature but are outside the scope of this Article. For good discussions, see Jorge L. Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 ANTITRUST L.J. 47, 78–87 (2013); Jorge L. Contreras, *Global Rate Setting: A Solution for Standards-Essential Patents*, 94 WASH. L. REV. 701, 713–22 (2019). See generally Norman V. Siebrasse & Thomas F. Cotter, *The Value of the Standard*, 101 MINN. L. REV. 1159 (2017).

¹⁹ See 35 U.S.C. § 271(d)(4) (2018).

²⁰ See D. Scott Bosworth et al., *FRAND Commitments and Royalties for Standard Essential Patents*, in *COMPLICATIONS AND QUANDARIES IN THE ICT SECTOR: STANDARD ESSENTIAL PATENTS AND COMPETITION ISSUES* 19, 26 (A. Bharadwaj et al. eds., 2018).

²¹ See *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 876 (9th Cir. 2012) (“Microsoft II”) (citing Lemley, *Standard-Setting Organizations*, *supra* note 17 at 1902, 1906).

diverse producers is a necessary component. Just as any producer, firms involved in the implementation of networked technology seek to minimize their costs by avoiding unnecessary or unnecessarily costly patents. Such avoidance is a socially valuable form of cost minimization.

The FRAND obligation generally requires patentees to license freely to all qualified participants, whether or not they are competitors of the patent holder.²² Further, they must settle royalty disputes in a reasonable manner—if necessary, through a third party, such as a court or arbitrator.²³ If reference to an arbitrator is contractually specified, such agreements may also be subject to compulsory arbitration under the Federal Arbitration Act.²⁴

The FRAND system facilitates competition by assuring new firms as well as existing ones that they will be able to operate on the networked technology. Royalties to the owners of these patents are generally measured by the value that the contrib-

²² The IP policy of the Telecommunications Industry Association: stated: “A license under any Essential Patent(s), the license rights which are held by the undersigned Patent Holder, will be made available to all applicants under terms and conditions that are reasonable and non-discriminatory.” *FTC v. Qualcomm, Inc.*, 2018 WL 5848999, at *3 (N.D. Cal. Nov. 6, 2018); *accord Microsoft II*, 696 F.3d at 876; *id.* at 885 (stating that FRAND obligation requires firm to license to “all comers”); *see also* *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031 (9th Cir. 2015) (“Microsoft III”) (“[A]n SEP holder *cannot* refuse a license to a manufacturer who commits to paying the RAND rate.”(emphasis added)); *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 671–72 (N.D. Cal. 2019) (“For example, under the intellectual property policy of the Telecommunications Industry Association (‘TIA’), a SSO, a SEP holder must commit to TIA that ‘A license under any Essential Patent(s), the license rights which are held by the undersigned Patent Holder, will be made available to all applicants under terms and conditions that are reasonable and non-discriminatory.’” (quoting *Qualcomm, Inc.*, 2018 WL 5848999, at *3).

²³ *See, e.g.*, *HTC Corp. v. Telefonaktiebolaget LM Ericsson*, 2019 WL 277479, at 3–5 (E.D. Tex. Jan. 22, 2019) (discussing duty to arbitrate), *appeal dismissed*, 2019 WL 4126536 (5th Cir. June 18, 2019); *Interdigital Tech. Corp. v. Pegatron Corp.*, 2016 WL 234433, at *10 (N.D. Cal. Jan. 20, 2016) (compelling arbitration); *ASUS Comput. Int’l v. InterDigital, Inc.*, 2015 WL 5186462, at *7 (N.D. Cal. Sep. 4, 2015) (similar); *see also* HOVENKAMP, ET AL., *IP AND ANTITRUST*, *supra* note 1, § 35.05; Jorge L. Contreras & David L. Newman, *Developing a Framework for Arbitrating Standard-Essential Patent Disputes*, 2014 J. DISP. RESOL. 23, 26–29 (2014); Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1152–60 (2013). *See generally* J. Gregory Sidak, *Mandating Final-Offer Arbitration of FRAND Royalties for Standard-Essential Patents*, 18 STAN. TECH. L. REV. 1 (2014) (discussing Lemley-Shapiro arbitration).

²⁴ 9 U.S.C. §§ 1–2 (2018); *see, e.g.*, *ASUS Computer*, 2015 WL 5186462, at *2–3 (discussing the Federal Arbitration Act). *See generally* Contreras & Newman, *supra* note 23, *passim* (same).

uted patent makes to the standard.²⁵ Importantly, tribunals seek to measure these values “ex ante,” or prior to the patent’s adoption into a standard and at a time when there is a fuller range of competitive alternatives.²⁶ Once the standard is adopted and implementers have incorporated it into their own technologies, a standard essential patent is likely to be in a much stronger position, approaching monopoly in some cases.²⁷ Patents that are committed in this way are described as “standard essential patents” (SEPs), or as being “FRAND encumbered.”²⁸ Qualcomm was able to evade this “ex ante” requirement by insisting on purchaser acceptance of a license on its own terms before it would sell chips.²⁹

Having a patent declared standard essential can increase its value considerably, mainly because the promise of a license at a reasonable rate steers developmental decision making in favor of that particular technology. When a firm makes a commitment to develop its products under a particular standard, it wants assurance that it will have a durable right to operate under that standard at reasonable royalty rates. This process naturally leads to the creation of considerable path dependence in standards. It encourages firms to develop their own technology in ways that ensure interoperability but that can be costly to reverse after the fact.³⁰

²⁵ See, e.g., *Microsoft III*, 795 F.3d at 1040 (considering “the objective value each [patent] contributed to each standard, given the quality of the technology and the available alternatives as well as the importance of those technologies to Microsoft’s business”); see also Thomas F. Cotter, Erik Hovenkamp & Norman Siebrasse, *Demystifying Patent Holdup*, 76 WASH. & LEE L. REV. 1501, 1507–08 (2019) (royalties generally reflect “the technology’s economic value”).

²⁶ See, e.g., *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1325 (Fed. Cir. 2009) (“The hypothetical negotiation tries, as best as possible, to recreate the *ex ante* licensing negotiation scenario and to describe the resulting agreement. In other words, if infringement had not occurred, willing parties would have executed a license agreement specifying a certain royalty payment scheme.”); *Microsoft Corp. v. Motorola, Inc.*, 2013 WL 2111217, at *17–20 (W.D. Wash. Apr. 25, 2013) (“This approach attempts to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began.”).

²⁷ See Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, 1 INNOVATION POLY & ECON. 119, 122–24. (2000).

²⁸ E.g., *FTC v. Qualcomm, Inc.*, 2017 WL 2774406, at *6 (N.D. Cal. June 26, 2017).

²⁹ See discussion *infra* text at notes 103–04.

³⁰ Cotter, Hovenkamp, & Siebrasse, *supra* note 25, at 1562–63. On path dependence, see Steven N. Durlauf, *Path Dependence*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS 10094 (3d ed. 2018); Douglas Puffert, *Path Dependence in Technical Standards*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS 10106, 10106–13 (3d ed. 2018). On standardization and path dependence, see generally

This phenomenon of increased value for SEPs also motivates patent owning firms to “over-claim”—that is, to assert that patents are standard essential when subsequent litigation or evaluation determines that they are not. While FRAND agreements require participants to declare relevant patents thought to be essential, the rate of actual declaration far exceeds any rational boundary. As many as one-third to more than half of declared SEPs are very likely not essential to the standard for which they were declared,³¹ and allegations about the practice of over-declaring are currently being litigated as potential antitrust violations.³² In fact, overall infringement rates for SEP patents are not materially different from those for non-SEP patents.³³ A declaration of non-infringement means that, although the patent might be valid, it does not in fact read on the defendant’s particular device or process. In effect, the patent is not a part of the defendant’s technology, and thus cannot be essential. The problem is exacerbated by the fact that, for the most part, SSOs have no process up front for reviewing or questioning individual participants’ declarations that a patent they are offering is in fact both valid and standard essential.³⁴

Ex ante, a patent may offer one of many alternative technological paths to a certain goal. However, ex post, after a standard has been adopted and others have developed their technologies in reliance, the range of acceptable alternatives

Joseph Farrell and Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70 *passim* (1985).

³¹ See Robin Stitzing, Pekka Saaskilahti, Jimmy Royer & Marc Van Audenrode, *Over-Declaration of Standard Essential Patents and Determinants of Essentiality* fig. 1 (Sept. 4, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2951617 [<https://perma.cc/B9BQ-EV9C>]; see also CYBER CREATIVE INST. CO., *EVALUATION OF LTE ESSENTIAL PATENTS DECLARED TO ETSI 19–21* (2013), <http://www.cybersoken.com/file/lte03EN.pdf> [<https://perma.cc/4VP6-264A>] (concluding that roughly 56% of patents declared essential to ETSI standard were in fact so and showing that there was also a wide range among individual companies). For good commentary, see Jorge L. Contreras, *Essentiality and Standards-Essential Patents*, in *THE CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS* 209, 226 (Jorge L. Contreras ed., 2017).

³² *Lenovo (United States), Inc. v. Interdigital Tech. (IDC)*, case 1:20-cv-00593-LPS (D. Del. April 9, 2020) (complaint, alleging over-declaring by IDC). See also <https://www.essentialpatentblog.com/2020/04/lenovo-motorola-file-antitrust-claims-against-interdigitals-standards-setting-participation-and-patent-licensing-practice-lenovo-v-interdigital/> (last visited Aug. 8, 2020) (discussing the case).

³³ Mark A. Lemley & Timothy Simcoe, *How Essential are Standard-Essential Patents?*, 104 CORNELL L. REV. 607, 627 (2019). The authors conclude that findings of infringement of SEP and non-SEP patents occur at about the same rate, roughly 30%. As a result, SEPs “don’t seem to be all that essential, at least when they make it to court.” *Id.* at 608.

³⁴ See *id.* at 610.

can decrease dramatically. As a result, the patent whose path is adopted becomes much more valuable.³⁵ In that case, a firm's ability to evade the FRAND obligation by charging selectively higher royalties to some licensees or conditioning licenses on the purchase of other technology can be extremely lucrative for the patentee but costly to implementers of the standard and disruptive of the SSO's developmental goals.³⁶ In its *Qualcomm* decision noted above, the Ninth Circuit did not indicate any awareness of these motivations or their potential for harm.³⁷

In general, the goal of FRAND is to make patents available to participants at a price equivalent to what the patent would have been worth in the more competitive market prior to the time it was declared essential. The relevant question is what was the value of the patent's contribution to the standard at a time when competitive alternatives may have been available, as opposed to a later time when other firms have dedicated themselves to the standard?³⁸

This approach is simply a variant of the proposition that even a monopoly market can be made competitive if we require competing firms to bid for the opportunity to be the monopolist.³⁹ Even though a natural monopoly entity such as a public utility has the market power of any monopolist, someone must still choose who gets to be the monopolist.⁴⁰ The winner will be the firm that promises the most competitive behavior, provided that it can be held to that commitment. Once the auction is over and the winner has been selected, however, it will have an incentive to renege on its auction promise and charge whatever

³⁵ See Jay P. Kesan & Carol M. Hayes, *FRAND's Forever: Standards, Patent Transfers, and Licensing Commitments*, 89 IND. L.J. 231, 233–35 (2014); William F. Lee & A. Douglas Melamed, *Breaking the Vicious Cycle of Patent Damages*, 101 CORNELL L. REV. 385, 404–09 (2016); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1994–2010 (2007).

³⁶ See, e.g., *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 785–87 (N.D. Cal. 2019) (finding that defendant attempted to leverage higher royalty rates by taking advantage of ex post SEP status plus its threat to withhold products from licensee who challenged the higher rates).

³⁷ See discussion *supra* notes 7–10 and accompanying text.

³⁸ See Cotter, Hovenkamp & Siebrasse, *supra* note 25, at 1517–29.

³⁹ See Erik Hovenkamp, *Tying, Exclusivity, and Standard-Essential Patents*, 19 COLUM. SCI. & TECH. L. REV. 79, 90 (2017); Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55, 58 (1968); Richard A. Posner, *The Appropriate Scope of Regulation in the Cable Television Industry*, 3 BELL J. ECON. & MGMT. SCI. 98, 110–11 (1972); Oliver E. Williamson, *Franchise Bidding for Natural Monopolies—In General and with Respect to CATV*, 7 BELL J. ECON. 73, 76–77 (1976).

⁴⁰ On whether the large internet platforms are natural monopolies, see Herbert Hovenkamp, *Antitrust and Platform Monopoly*, 130 YALE L.J. (forthcoming 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3639142.

price its newly acquired monopoly status provides. FRAND creates similar incentives, as the *Qualcomm* case illustrates.

Alternative proposals to the effect that the FRAND patentee and the licensee should split the difference between value to the patentee and value to the implementer⁴¹ improperly take an ex post rather than ex ante view of value and asks the royalty tribunal to divide evenly the difference between the seller's (patentee's) willingness to accept and the buyer's (licensee's) willingness to pay *after* FRAND status has been established. That may be a useful way of thinking about price in a bilateral monopoly,⁴² but only after the bilateral monopoly has formed. The competitive solution is to give the seller the price it would have obtained in a competitive market, which is manifestly not an even division of the surplus. Rather, it is a competitive return to the seller.⁴³

The SEP process has produced several disputes. Often these are simply about the size of the royalty and how it must be measured. However, patentees may also attempt to evade the general FRAND requirements that a SEP must be licensed without condition to all users of the standard and on nondiscriminatory terms. Some owners of SEPs who also make products that practice them may prefer not to license a particular patent to anyone. Or they may impose exclusive dealing or loyalty discount requirements on licensees.⁴⁴ Alternatively, the owner of a FRAND-encumbered patent may tie it to an unregu-

⁴¹ See, e.g., J. Gregory Sidak, *What Makes FRAND Fair? The Just Price Contract Formation, and the Division of Surplus from Voluntary Exchange*, 4 CRITERION J. INNOVATION 701, 727–31 (2019) (analyzing difference surplus splits).

⁴² The traditional solutions to the bilateral monopoly problem are ones in which output is joint maximizing but price is indeterminate within a significant range. See Roger D. Blair, David L. Kaserman, & Richard E. Romano, *A Pedagogical Treatment of Bilateral Monopoly*, 55 S. ECON. J. 831, 834 (1989). However, Nash-Cournot bargaining theory predicts that under a wide range of assumptions bargaining will lead to an even split of the difference. That makes it critical that the proper beginning parameters of bargaining be settled. The split prior to a SEP declaration will occur at a lower place than it will ex post because the patentee's (seller's) reservation price will be lower. See Gordon C. Rausser, Johan Swinnen, & Pinhas Zusman, *The Nash Solution to the Bargaining Problem*, in POLITICAL POWER AND ECONOMIC POLICY: THEORY, ANALYSIS AND EMPIRICAL APPLICATIONS 30–49 (2011). For a comprehensive empirical survey of experimental tests, see Po-Hsuan Lin et al., *General Economic Principles of Bargaining and Trade: Evidence from 2000 Classroom Experiments* (Sept. 15, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3250495.

⁴³ E.g., Demsetz, *supra* note 39, at 65; Posner, *supra* note 39, at 111 (stating that franchise bidding leads to “a price that will not include any monopoly toll”).

⁴⁴ On these practices when involving SEPs, see Erik Hovenkamp, *Tying, Exclusivity*, *supra* note 39, at 107–09; A. Douglas Melamed & Carl Shapiro, *How Antitrust Law Can Make FRAND Commitments More Effective*, 127 YALE L.J. 2110, 2126–28 (2018).

lated device. While FRAND license rates are determined by a third-party tribunal, product prices are not. By tying a patent license to its own manufactured device, the patentee might be able to obtain its full post-commitment monopoly return. In that case the seller can obtain an overcharge on the device that operates to offset the reduced FRAND royalty. This use of tying in this way to avoid regulated rates is well known in antitrust.⁴⁵ The owner of a FRAND patent may also refuse to license it to competitors in the market for devices that practice the patent, once again in violation of its FRAND obligation to license to all qualified users on nondiscriminatory terms.⁴⁶ The result is reduced competition in the downstream market for devices or processes that employ the patent at issue, and in extreme cases even the creation of monopoly.

While these various attempts to evade FRAND obligations very likely breach the patentee's contractual obligations, only a subset also constitute antitrust violations. This does not mean that the standard-setting and FRAND process in which the conduct occurred is irrelevant to antitrust analysis. To the contrary, as in any antitrust case, it forms part of the market environment in which conduct must be evaluated. In her 2019 *Qualcomm* decision, Judge Lucy Koh addressed tying and exclusive dealing claims under general antitrust principles, and refusal to deal claims under the standards that the Supreme Court had developed in its *Aspen*⁴⁷ and *Trinko*⁴⁸ decisions.⁴⁹ Although her opinion devoted considerable space to the importance of standard essential patents and the relevance of FRAND commitments, she addressed the antitrust claims by applying well established antitrust principles that require a showing of restraint of trade or anticompetitive exclusion.⁵⁰ Nevertheless, anticompetitive effects become more transparent when one views the extent to which they undermined an output- and innovation-enhancing joint enterprise whose social value was not being called into question.

⁴⁵ On the use of tying arrangements for rate regulation avoidance, see 9 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 1715b, (4th ed. 2018). On this use in the context of FRAND, see Hovenkamp, *supra* note 39, at 102–105; Melamed & Shapiro, *supra* note 44, at 28.

⁴⁶ See *supra* note 22.

⁴⁷ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985).

⁴⁸ *Verizon Comm'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP* 540 U.S. 398 (2004).

⁴⁹ *FTC v. Qualcomm Corp.*, 411 F. Supp. 3d 658, 696–97 (N.D. Cal. 2019).

⁵⁰ See *infra* text accompanying notes 98–107; see also 2 HOVENKAMP ET AL., *IP AND ANTITRUST*, *supra* note 1, § 35.05.

SSOs operated by multiple firms are joint ventures.⁵¹ For bona fide joint ventures that are not simply fronts for cartels, the purpose of the antitrust laws is not to destroy the venture or undermine its purpose, but rather to evaluate how the challenged restraint operates within the venture and condemn unreasonably harmful restraints.⁵² For example, when the Supreme Court struck down the NCAA joint venture's limitation on nationally televised football games, the purpose and effect were to make the NCAA behave more competitively, in the process increasing its output.⁵³ SSOs should be addressed in the same manner. The goal of the standard setting venture is to facilitate competitive operation and entry, interoperability, as well as preserve appropriate competitive incentives for research and development.

Antitrust analysis necessarily involves testing conduct against these goals, but only to the extent of looking for practices that are anticompetitive. This means it must identify practices that reduce market wide output unreasonably and increase prices, or that are unnecessarily exclusionary or harmful to consumers in other ways.

A firm's violation of its FRAND commitment is very likely a breach of contract, as several decisions have held.⁵⁴ The FRAND contract is incomplete, in the sense that not every term is specified in detail. But participants are subject to a contractual duty to bargain in good faith, with some terms being filled in by courts or other tribunals as necessary. The breach of contract question does not depend on whether the conduct reduced market output or excluded a rival unreasonably. It certainly does not depend on the existence of any party's market power. Remedies are ordinarily contract damages or an injunction. Nonparties to the contract will typically be able to obtain relief only to the extent that they are third-party beneficiaries. However, the courts have had little difficulty concluding that participating members of the SSO are third-party

⁵¹ For treatment of SSOs as joint ventures, see 13 AREEDA & HOVENKAMP, *supra* note 1, Ch. 22B, 22C; Melamed & Shapiro, *supra* note 28, at 2119.

⁵² See 7 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW, Ch. 15 (4th ed. 2017).

⁵³ See *NCAA v. Bd. of Regents of the Univ. of Okla.*, 468 U.S. 85, 120 (1984).

⁵⁴ *E.g.*, *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 889 (9th Cir. 2012); *In re Innovatio IP Ventures, LLC Patent Litig.*, 921 F. Supp. 2d 903, 923 (N.D. Ill. 2013); see also *Realtek Semiconductor Corp. v. LSI Corp.*, 946 F. Supp. 2d 998, 1005, 1008 (N.D. Cal. 2013) (holding that FRAND commitment was an enforceable contract precluding patentee from bringing ITC claim for infringement before it offered a license).

beneficiaries of FRAND commitments.⁵⁵ In all events, challengers will not be able to obtain antitrust law's treble damages unless they can prove an antitrust violation.

Whether a firm's breach of a FRAND commitment also violates the antitrust laws depends on whether the conduct in question causes competitive harm of a sort that the antitrust laws recognize.⁵⁶ In the case of section 1 of the Sherman Act⁵⁷ this requires a showing of a relevant agreement that is likely to reduce market output. If the conduct is reasonably ancillary to other arguably procompetitive activity, the court must also assess market power and anticompetitive effects. In the case of section 2 of the Sherman Act or section 3 of the Clayton Act, which reach mainly tying and exclusive dealing, it will require a showing of market power plus conduct that is unreasonably exclusionary.

The antitrust harm results, not from the breach of the FRAND obligation *per se*. Rather, it results from the creation of monopoly and higher prices for consumers. The Ninth Circuit got this issue precisely wrong, holding that the district court incorrectly focused on downstream harm to buyers when it should have looked at harm to rivals.⁵⁸ That confuses contract or tort law with antitrust law.

I

FRAND VIOLATIONS AND ANTITRUST

A few FRAND violations that might also be challengeable as antitrust violations involve royalty disputes or entitlement to an injunction.⁵⁹ Many fall into the general category of refusals to deal or discriminatory dealing. These come in many kinds, and the differences are important for antitrust purposes. Unilateral refusals—where one firm acting alone refuses to deal—

⁵⁵ See, e.g., *Realtek Semiconductor Corp.*, 946 F. Supp. 2d at 1005–06 (holding that product developer was third-party beneficiary entitled to enforce FRAND obligation); *Microsoft Corp. v. Motorola, Inc.*, 864 F. Supp. 2d 1023, 1032–33 (W.D. Wash. 2012) (similar); *Apple, Inc. v. Motorola Mobility, Inc.*, 2012 WL 5416941, at *4 (W.D. Wis. Oct. 29, 2012) (similar).

⁵⁶ E.g., *McGlinchy v. Shell Chem. Co.*, 845 F.2d 802, 813 (9th Cir. 1988) (finding that the supplier's breach of contract was not an antitrust violation because it did not cause competitive harm); *Orion Pictures Distribution Corp. v. Syfy Enters.*, 829 F.2d 946, 949 (9th Cir. 1987) (finding that although defendant's conduct was a breach of contract, it did not violate the antitrust laws in the absence of market power).

⁵⁷ 15 U.S.C. § 1 (2018).

⁵⁸ *Qualcomm, Inc. v. FTC*, 969 F.3d 974, 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

⁵⁹ See *infra* text accompanying notes 69–72.

are found to be antitrust violations less frequently than concerted refusals to license, or boycotts, which occur when two or more firms acting in concert refuse to deal.⁶⁰ In addition, refusals to deal can be both simple and conditional.⁶¹ Discriminatory dealing occurs when a firm deals under different terms with different contracting partners, such as competitors and noncompetitors, in a way that harms competition. FRAND nondiscrimination requirements are significantly stronger than those imposed by the antitrust laws alone and prevent firms from licensing FRAND-encumbered patent selectively to noncompetitors.

A. Refusals to Deal

Although the Patent Act has provisions relevant to refusals to license,⁶² in general a refusal to license a patent is simply a subset of refusals to deal. A simple refusal is one where the holder refuses to deal no matter what, or where the refusal is conditioned on a firm's status that cannot readily be changed. For example, a firm might agree to sell to competitors but not noncompetitors. The only way a competing firm could obtain a deal in that case would be to exit from the market in which it was competing.

By contrast, conditional refusals to deal are actions in which the rights holder expresses a willingness to deal only if some condition is met. The basis for antitrust attacks on conditional refusals is much broader than for unconditional refusals. Tying and exclusive dealing are two common examples. Section 3 of the Clayton Act, the provision historically used to condemn tying and exclusive dealing, makes it unlawful to sell something only on the "condition, agreement, or understanding" that the purchaser not deal in the goods of a competitor.⁶³ In the only place where the Sherman and Clayton Acts mention patents, this provision makes clear that its refusal-to-deal rule applies to things "whether patented or unpatented."⁶⁴ Nevertheless, section 3's coverage is limited to "goods, wares, merchandise, machinery, supplies, or other commodities."⁶⁵ Because FRAND obligations by design are not tied to any particular good, section 3 of the Clayton Act does not cover the

⁶⁰ On concerted refusals to deal, see generally 13 AREEDA & HOVENKAMP, *supra* note 1, ¶¶ 2201–05.

⁶¹ See *infra* text accompanying notes 63–66.

⁶² See *infra* text accompanying notes 69–70.

⁶³ 15 U.S.C. § 14.

⁶⁴ See *id.*

⁶⁵ *Id.*

conditional refusal to license a FRAND patent, unless the condition in question is tied to “goods, wares,” etc.⁶⁶

In any event, these same requirements have largely been read into the more general language of the Sherman Act which contains no limitation on its coverage. This explains why cases such as *Qualcomm*, dealing with refusal to license FRAND patents, proceed largely under the Sherman Act,⁶⁷ or in the case of FTC proceedings under section 5 of the FTC Act.⁶⁸ Just as the Sherman Act, that statute’s prohibition of unfair methods of competition contains no limitation respecting patents, and it reaches all practices that are covered by the Sherman Act.

When the subject of the deal is a patent, the Patent Act itself may also be relevant. The Patent Act does not create an antitrust immunity for unilateral refusals to license, although it does immunize certain “misuse” claims. The Patent Misuse Reform Act provides that:

No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent⁶⁹

Patent “misuse” is a judge-made set of rules that emanated entirely from the Patent Act. While many of these resembled antitrust rules, they often reached beyond antitrust law.⁷⁰ The quoted provision, which is part of the 1988 Patent Misuse Reform Act,⁷¹ was intended to limit the reach of patent misuse.

⁶⁶ The full language of section 3 of the Clayton Act makes clear that, in the case of tying, *both* the tying and tied products must be “goods, wares, merchandise,” etc.: “It shall be unlawful for any person . . . to lease or make a sale or contract for sale of goods, wares, merchandise, machinery, supplies, or other commodities, whether patented or unpatented, . . . on the condition, agreement, or understanding that the lessee or purchaser thereof shall not use or deal in the goods, wares, merchandise, machinery, supplies, or other commodities of a competitor or competitors” *Id.*

⁶⁷ *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 683 (N.D. Cal. 2019).

⁶⁸ 15 U.S.C. § 45.

⁶⁹ 35 U.S.C. § 271(d)(4) (2018).

⁷⁰ On patent “misuse,” see 1 HERBERT HOVENKAMP ET AL., *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW*, Ch. 3 (3d ed. 2017 & Supp.); 10 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶ 1781–1782 (4th ed. 2018); DARYL LIM, *PATENT MISUSE AND ANTITRUST LAW: EMPIRICAL, DOCTRINAL AND POLICY PERSPECTIVES* 18–37 (2013). On the reach of misuse beyond antitrust law, see, for example, *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661, 670–71 (Fed. Cir. 1986) (holding that tying arrangement could constitute misuse and be a defense to an infringement claim even though it did not constitute an antitrust violation).

⁷¹ 35 U.S.C. § 271(d).

Today patent misuse is in sharp decline and there are few recent cases finding misuse.⁷²

Whether this provision of the Patent Misuse Reform Act should additionally be read to confer an antitrust immunity is doubtful. More realistically, it should be interpreted as an attempt to narrow misuse liability so as to bring it more in line with antitrust principles.⁷³ When Congress wants to create an antitrust immunity it knows how to do so. Several statutes provide that the antitrust laws “do not apply” to a particular type of conduct, or that particular conduct “shall not be unlawful under the antitrust laws.”⁷⁴ Here, by contrast, the statutory language removes liability for “misuse or illegal extension of the patent right,”⁷⁵ which is classical misuse language. Given the principle that immunities are construed narrowly, the statute should be construed as narrowing misuse doctrine but not antitrust rules.⁷⁶

In any event, this statutory limitation applies only to *un*-conditional refusals to license. The very next subsection of the same statute, passed at the same time, also states that misuse should not apply to a firm that:

(5) *condition[s]* the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.⁷⁷

Far from exonerating conditional refusals, this subsection of the statute requires that conditional refusals involving tying be condemned only upon a finding of market power in the product upon which the condition is imposed—that is, the ty-

⁷² See AREEDA & HOVENKAMP, *supra* note 70, ¶ 1781.

⁷³ See Richard Calkins, *Patent Law: The Impact of the 1988 Patent Misuse Reform Act and Noerr-Pennington Doctrine on Misuse Defenses and Antitrust Counterclaims*, 38 DRAKE L. REV. 175, 220–28 (1989) (making this argument).

⁷⁴ See, e.g., Charitable Donation Antitrust Immunity Act, 15 U.S.C. § 37(a) (“[T]he antitrust laws . . . shall not apply to charitable gift annuities . . .”); Confirmation of Antitrust Status of Graduate Medical Resident Matching Programs, 15 U.S.C. § 37b(2) (“It shall not be unlawful under the antitrust laws to sponsor . . .”); see also 1B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 249–51 (4th ed. 2013) (discussing other federal statutes with express immunity provisions).

⁷⁵ 35 U.S.C. § 27(d)(4).

⁷⁶ See, e.g., *Brown v. Pro Football, Inc.*, 518 U.S. 231, 258 (1996) (Stevens, J., dissenting); *Grp. Life & Health Ins. Co. v. Royal Drug Co.*, 440 U.S. 205, 231 (1979) (“It is well settled that exemptions from the antitrust laws are to be narrowly construed.”).

⁷⁷ 35 U.S.C. § 271(d)(5) (emphasis added).

ing product. In its *Illinois Tool Works* decision the Supreme Court held that this provision, written as a limitation on the reach of misuse law, also served to undermine the notion that the market power requirement for antitrust tying law is established simply by showing that the tying product was patented.⁷⁸ With the misuse law of tying having been narrowed by requiring conventional proof of market power, it would be perverse to have antitrust reach more broadly.⁷⁹ As a result, the Court held market power could not be presumed in an antitrust tying case from the bare existence of a patent.⁸⁰ Nothing in *Illinois Tool Works* suggested that patent ties should simply be legal per se.

Suppose the owner of a FRAND-encumbered patent conditions a license on some agreement or understanding that antitrust law deems anticompetitive or else refuses to license it under any circumstances? The first of these is a conditional refusal; the second is an unconditional refusal.

1. *Conditional Refusals to License FRAND-encumbered Patents*

An unlawful conditional refusal occurs when the defendant refuses to sell or license some interest unless the buyer agrees to a condition that is determined to be anticompetitive. Conditional refusal challenges usually involve tying, exclusive dealing, or a variety of practices sometimes described as “quasi” exclusive dealing, including conditional discounts, loyalty discounts, bundled discounts, most-favored nation clauses, and the like.⁸¹ The purely vertical conditional refusal is addressed under ordinary rule of reason antitrust principles, which require a showing of market power and anticompetitive effects. The immediate target of such practices is typically a rival, but the end game, as for any antitrust violation, is reduced output

⁷⁸ *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 42–46 (2006).

⁷⁹ *See id.* at 38–39, 42.

⁸⁰ *Id.* at 42 (“[G]iven the fact that the patent misuse doctrine provided the basis for the market power presumption, it would be anomalous to preserve the presumption in antitrust after Congress has eliminated its foundation” (citing 10 AREEDA & HOVENKAMP, *supra* note 70, ¶ 1737c)).

⁸¹ On tying, see 9 AREEDA & HOVENKAMP, *supra* note 45, ch. 17; 10 AREEDA & HOVENKAMP, *supra* note 70, ch. 17. On exclusive dealing, see 11 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW*, Ch. 8 (4th ed. 2018). For a discussion of conditional discounts and other practices sometimes analogized to tying or exclusive dealing, see 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 749 (4th ed. 2015) (bundled discounts); 11 AREEDA & HOVENKAMP, *supra* ¶ 1807 (various discounts conditioned on exclusivity or preferential treatment).

and higher prices to consumers. These requirements apply whether any patents in question are FRAND encumbered or, indeed, whether there are any patents at all.⁸²

In speaking of Qualcomm's practices targeting Apple, as well as other OEMs, the district court concluded that in 2013 Qualcomm gave Apple rebates "in exchange for Apple's effective commitment to purchase modem chips exclusively from Qualcomm."⁸³ It was particularly important for Qualcomm to secure Apple's exclusive business, the court concluded, because of Apple's scale and prestige.⁸⁴ This condition foreclosed competitor Intel and other unnamed rivals from working with Apple for approximately three years.⁸⁵ That practice falls literally within Clayton Act section 3's prohibition of anticompetitive tying and exclusive dealing of products, even though the case at hand was brought under section 5 of the FTC Act.⁸⁶ The Sherman Act condemns this conduct under more or less the same standard.⁸⁷

Modern interpretations of the law of exclusive dealing and quasi-exclusive dealing look to foreclosure of rivals as the primary tool of competitive harm.⁸⁸ "Foreclosure" is the idea that a vertical contract imposed by a dominant firm either drives a rival out of a market or else makes its business more costly. As Judge Koh observed in *Qualcomm*, the requirement for illegality is "not total foreclosure, but whether the challenged practices bar a substantial number of rivals or severely restrict the market's ambit."⁸⁹

The judicially developed foreclosure requirements under section 1 of the Sherman Act differ from those under section 2. Section 1 does not require that the actor have substantial monopoly power but is more categorical about what constitutes

⁸² See *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 743–44 (N.D. Cal. 2019) (holding that conditional market share discounts in exchange for chip purchase commitments violated antitrust laws when in some cases, Qualcomm conditioned chip sales on patent licenses at supracompetitive rates), *rev'd*, 969 F.3d 974, 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

⁸³ *Qualcomm*, 411 F. Supp. 3d at 730.

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ See *id.* at 680.

⁸⁷ See 11 AREEDA & HOVENKAMP, *supra* note 81, ¶ 1800c4 (noting divisions among the lower courts as to whether the test of illegality is the same under the two statutes).

⁸⁸ See 9 AREEDA & HOVENKAMP, *supra* note 42, ¶¶ 1720–1730 (tying, under both per se rule and rule of reason); 11 AREEDA & HOVENKAMP, *supra* note 81 ¶¶ 1802, 1821 (exclusive dealing).

⁸⁹ *Qualcomm*, 411 F. Supp. 3d at 696 (quoting *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 191 (3d Cir. 2005)).

the requisite foreclosure. Judge Koh suggested minimum foreclosure on the order of 40% to 50% of the relevant market.⁹⁰ Stated as a minimum, that number seems high, particularly in a market where interoperability is crucial to success.⁹¹ In any event, when the defendant has a dominant position in its own market, then the foreclosure requirement is less categorical.⁹² First, it may be established on lower foreclosure numbers.⁹³ Secondly, the court may look at other factors such as the exclusion of specific important rivals.⁹⁴ The duration of the agreements is important, and at least some of the Qualcomm agreements, those involving Apple, stretched for five years.⁹⁵ Finally, the quality of the entity or entities from which rivals are foreclosed is also significant: one impact of exclusive dealing can be to relegate rivals to inferior market alternatives, thus raising rivals' costs.⁹⁶ The court also concluded that Qualcomm attempted to—and largely succeeded in—denying rivals market access to Apple, a highly preferred purchaser.⁹⁷

The court also found that Qualcomm's various actions cutting off customers' (OEMs') chip supply unless they agreed to chip exclusivity effectively foreclosed these OEMs from purchasing chips from Qualcomm's rivals.⁹⁸ Further, it conditioned the sale of modem chips to Apple on its agreement not to use a competing standard that Intel was supporting.⁹⁹

⁹⁰ *Id.* at 764 (citing *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 996 (9th Cir. 2010); *Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1031 (N.D. Cal. 2015)).

⁹¹ See *United States v. Microsoft Corp.*, 253 F.3d 34, 69–70 (D.C. Cir. 2001) (suggesting 40% to 50%). The *Draft Vertical Merger Guidelines* promulgated by the Department of Justice and FTC would permit challenges on foreclosures of as little as 20%. See DEPT OF JUSTICE AND FEDERAL TRADE COMMISSION, DRAFT VERTICAL MERGER GUIDELINES § 3, <https://www.ftc.gov/public-statements/2020/01/joint-vertical-merger-guidelines-draft-released-public-comment> [<https://perma.cc/NA24-ZL8R>].

⁹² On these differences between exclusive contracting under sections 1 and 2 of the Sherman Act, see 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 768 (4th ed. 2015).

⁹³ See *Qualcomm*, 411 F. Supp. 3d at 764.

⁹⁴ *Id.* at 765 (quoting *ZF Meritor, LLC v. Eaton Corp.*, 696 F.3d 254, 266 (3d Cir. 2012) (quoting 11 AREEDA & HOVENKAMP, *supra* note 81, ¶ 1802c (2d ed. 2002))).

⁹⁵ *Id.* at 770.

⁹⁶ See 11 AREEDA & HOVENKAMP, *supra* note 81 ¶ 1821d; see also, e.g., *Microsoft*, 253 F.3d at 70 (finding that Microsoft's actions foreclosed Netscape's access to the most efficient distribution channels).

⁹⁷ See *supra* text accompanying notes 83–85.

⁹⁸ *Qualcomm*, 411 F. Supp. 3d at 698.

⁹⁹ *Id.* at 723 (also mentioning other unspecified exclusive deals with Apple); see also *id.*, at 730, 737 (“Thus, Qualcomm's exclusive deals, which delayed Intel's ability to sell modem chips to Apple until September 2016, foreclosed Intel

Qualcomm eventually forced Apple to stop doing business with Intel.¹⁰⁰

Foreclosure concerns are heightened in networks where compatibility standards and interoperability are essential to competitive supply. The FRAND process ensures that all participating firms have access to a common technology so that they can operate on a network where interconnection is essential. As a result, foreclosure can be much more harmful in a networked industry than elsewhere. The Ninth Circuit reversed the district court,¹⁰¹ concluding that while the agreements in question were a type of exclusive dealing, they were in fact *de minimis* because Apple, the intended target, was the only customer in play, and the only rival chip maker was Intel. But foreclosure must be measured as a proportion of the market that is excluded by the deal. The fact that the market has only two competitors exacerbates rather than diminishes the effects of foreclosure. In a footnote the Ninth Circuit conceded:

Of note, the agreements did not just provide substantial discounts to Apple in exchange for Apple “purchas[ing] a high percentage of [its] . . . requirements from” Qualcomm. *Allied Orthopedic*, 592 F.3d at 996. Instead, they sought to “prevent[] the buyer [Apple] from purchasing a given good [CDMA modem chips] from any other vendor,” *id.*, by making volume discounts (or “incentive funds”) contingent on exclusivity. Nor were these agreements “easily terminable,” even though Apple did, in fact, terminate them. *See id.* at 997 (noting that “[t]he ‘easy terminability’ of an exclusive dealing arrangement ‘negate[s] substantially [its] potential to foreclose competition’” (quoting *Omega Envtl.*, 127 F.3d at 1163–64)). Clearly, the requirement that Apple forfeit or reimburse Qualcomm millions of dollars in incentive funds was a strong deterrent to termination.

The footnote contradicts the statements that the court made in the text of its opinion. Section 3 of the Clayton Act applies its prohibition against exclusive dealing even when the

and other rivals from benefits including: (1) a revenue boost critical to funding research and development and acquiring technology (as Intel did with VIA); (2) exposure to Apple’s “best-in-class” engineering resources; (3) a foothold at Apple for future handsets; (4) business opportunities with other OEMs; (5) enhanced standing in SSOs; and (6) opportunities to conduct early field testing and prototyping with network vendors and operators.”).

¹⁰⁰ *See id.* at 766 (showing that Qualcomm’s exclusive deals with Apple “foreclosed a substantial share of the market”); *id.* at 766–67 (showing the foreclosure of other rivals).

¹⁰¹ *FTC v. Qualcomm, Inc.*, 969 F.3d 974, 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

defendant offers “a discount from, or rebate upon” a price in exchange for an exclusive dealing or tying agreement.¹⁰² That is, the fact that a firm may subsequently be shown to be capable of buying itself out of an exclusivity provision does not negate its anticompetitive effect. The standard under FTC Act §5 should be at least as aggressive.

The Ninth Circuit made a similar error with respect to Qualcomm’s “no license, no chips” policy, under which Qualcomm refused to sell chips to an OEM unless it also agreed to take a Qualcomm license. One important goal of that policy, as the district court had found, was to enable Qualcomm to evade FRAND-determined royalties, which would have been significantly lower than the royalties that Qualcomm was actually able to obtain.¹⁰³ The Ninth Circuit characterized this as “chip neutral” because it could apply to anyone’s chips, not just Qualcomm’s. But the fact is that Qualcomm had a dominant market share in chips, and tying law usually finds competitive significance in markets shares in the range of 30% to 40%. In sum, the practice both amounted to classical tying and FRAND royalty avoidance.¹⁰⁴

In any event, FRAND obligations reach much more broadly than do antitrust obligations. For example, a refusal to license a FRAND patent to a qualified licensee unless that person also purchases the IP owner’s hardware would very likely violate a FRAND commitment “per se,” as a simple breach of contract. Breach of the agreement would be unlawful without any showing of higher prices, market power, a minimum foreclosure amount, or another anticompetitive effect such as raising a rival’s costs.

In the case of a FRAND violation alone, the remedy could be a nonantitrust penalty for breach of contract, as well as a mandatory or prohibitory injunction.¹⁰⁵ Absent a finding of an

¹⁰² 15 U.S.C. § 14 (2018).

¹⁰³ See *FTC v. Qualcomm, Inc.*, 2017 WL 2774406 (N.D.Cal. June 26, 2017) at *13. The court stated:

Qualcomm’s “no license-no chips” policy prevents OEMs from resorting to a neutral arbiter to determine a reasonable royalty rate, an OEMs’ bilateral licensing negotiations with Qualcomm do not occur “in the shadow of the law,” and thus do not adequately reflect a reasonable FRAND royalty rate.

Id.

¹⁰⁴ For further analysis, see HOVENKAMP ET AL., IP AND ANTITRUST, *supra* note 1, § 35.05[B] (2020 Supp.).

¹⁰⁵ See, e.g., *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006) (holding that the right to an injunction should be established by traditional equity principles, namely that “(1) that [the plaintiff] has suffered an irreparable injury; (2) that remedies available at law . . . are inadequate to compensate for that injury;

antitrust violation, however, it would not be amenable to anti-trust's treble damages.¹⁰⁶ Nor would a simple breach of a FRAND obligation be governed by the provisions that govern private equity relief from antitrust violations.¹⁰⁷ It would also not be governed by the very broad provision that gives the Attorney General the authority to obtain an injunction against an ongoing antitrust violation without making the usual showing that equitable principles favored the requested relief.¹⁰⁸ That provision does not contain the limitation that appears in most statutory authorizations for an injunction that empowers the court to grant them "in accordance with the principles of equity."¹⁰⁹

Although the fact that a patent is FRAND-encumbered does not determine antitrust liability in either direction, it is hardly irrelevant. On the market power question, the fact that a patent has been declared standard essential and subjected to FRAND requirements is certainly important. Depending on the degree of path dependence, a patent may have become essential to practicing a particular standard, or implementers may have invested substantial sunk costs into the technology it covers.¹¹⁰ In that case, extraction may be more costly than simply paying more, or else the firm may exit from the market.¹¹¹ These are all fact questions, but they can weigh heavily in a determination of market power.

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

¹⁰⁶ 15 U.S.C. § 15 (2018).

¹⁰⁷ Articulated in 15 U.S.C. § 26:

Any person, firm, corporation, or association shall be entitled to sue for and have injunctive relief . . . against threatened loss or damage by a violation of the antitrust laws, . . . when and under the same conditions and principles as injunctive relief against threatened conduct that will cause loss or damage is granted by courts of equity, under the rules governing such proceedings, and upon the execution of proper bond against damages for an injunction improvidently granted and a showing that the danger of irreparable loss or damage is immediate, a preliminary injunction may issue. . . .

Id. § 26.

¹⁰⁸ 15 U.S.C. § 25 (authorizing government to “prevent and restrain” future antitrust violations without a separate showing of public interest or the usual language in equity statutes that grants the authority).

¹⁰⁹ See, e.g., 35 U.S.C. § 283 (patent infringement); 15 U.S.C. § 1116 (allowing injunction to prevent trademark infringement—“according to the principles of equity”); 29 U.S.C. § 160 (2018) (empowering federal courts of appeal to enforce orders of the NLRB “as [they] deem[] just and proper”).

¹¹⁰ See Cotter, Hovenkamp, & Siebrasse, *supra* note 25, at 1509–10.

¹¹¹ See FTC, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 60–61 (2011); Jorge L. Contreras, *Much Ado About Hold-up*,

We suggest that FRAND status creates a presumption of sufficient market power, which can be defeated by a showing that firms operating under the SSO can find a suitable substitute for the FRAND-encumbered patent in question, readily and at low cost. For example, the presumption would likely be defeated by a finding that firms operating under the standard are not infringers, which is simply another way of saying that the patent has been mis-declared as standard essential.¹¹²

Questions about the market power of individual SEP patents are also heavily derivative of questions about the power of the SSO for which the patent is essential. If a patent is truly essential, then it has whatever power is enjoyed by the standard to which it is essential. Most large SSOs that employ SEPs and dominate their industries have significant power. In that case, a properly identified SEP can be presumed to have market power as well. In many other settings, however, standards are less likely to confer substantial power for the simple reason that the organization is only one of many alternative standard setting organizations, or else because compliance with a standard is not all that valuable.¹¹³ For example, the Blu-ray Disc Association (BDA) is an SSO for those involved in developing technology and manufacturing under the Blu-ray format for compact discs.¹¹⁴ However, the Blu-ray format has been in sharp decline in recent years, losing ground to alternative video formats as well as streaming.¹¹⁵ In that case, determining the lock that any particular patent or technology has on the Blu-ray standard will not necessarily dispose of the market

2019 U. ILL. L. REV. 875, 882; Anne Layne-Farrar, Gerard Llobet & A. Jorge Padilla, *Preventing Patent Hold Up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting*, 37 AIPLA Q.J. 445, 455 (2009); see also Melamed & Shapiro, *supra* note 44, at 2116–17.

¹¹² See *supra* text accompanying notes 69–70.

¹¹³ See, e.g., *Brookins v. Int'l Motor Contest Ass'n*, 219 F.3d 849, 852–54 (8th Cir. 2000) (explaining that defendant IMCA was one out of many racing bodies and its standard lacked power over the general market for oval track automobile racing); *Sanjuan v. Am. Bd. of Psychiatry & Neurology*, 40 F.3d 247, 250–51 (7th Cir. 1994) (reasoning that physicians excluded from specialized professional association could still practice their profession without difficulty where membership in the association was not necessary to practice); *Clamp-All Corp. v. Cast Iron Soil Pipe Inst.*, 851 F.2d 478, 484 (1st Cir. 1988) (association that graded and approved underground plumbing fixtures lacked power when it appeared that few market participants paid much attention to their recommendations).

¹¹⁴ See *Welcome to the Blu-Ray Disc Association*, BLU-RAY DISC, <http://www.blu-raydisc.com/en/index.aspx> (last visited Feb. 2, 2020) [<https://perma.cc/8LEB-NJAP>].

¹¹⁵ See Sean Hollister, *Samsung Quits Making New Blu-ray Players*, VERGE (Feb. 17, 2019, 5:04 PM), <https://www.theverge.com/2019/2/17/18228584/samsung-stops-producing-blu-ray-players> [<https://perma.cc/YY2F-NJDU>].

power question. A patent that is essential to manufacturing an obsolete product may not be worth all that much.

SEP status is also important to questions about the breadth of a relevant antitrust market. For example, once a patent has been designated standard essential, substitute patents that are not essential are typically poor alternatives for technology operating on that network. This is simply a special case of the proposition that regulatory requirements or accepted business practices can serve to narrow the scope of relevant markets, thus giving firms greater power. If compliance with a standard is necessary to doing business in a market, then the market will be limited to complying producers.¹¹⁶

To be sure, a particular patent may have been mis-declared and not be essential at all to practice under a certain standard.¹¹⁷ But given that declaration is a voluntary act of the patentee it seems wise at the onset to take the patentee at its word and presume that a SEP-declared patent is essential and thus confers significant power. Important evidence that it is not essential is a finding that the implementers' technology, while practicing the standard, does not infringe the patent. Such a patent may have no more power than the general run of non-SEP patents.

The market power query considers whether a firm (or cartel) has sufficient power to increase price to supracompetitive levels without losing so many sales that the increase is unprofitable.¹¹⁸ Any factor that limits substitution, including SEP status, can result in a narrower market definition. To illus-

¹¹⁶ *E.g.*, *United States v. Phillipsburg Nat'l Bank & Trust Co.*, 399 U.S. 350, 361–62 (1970) (showing that the local regulatory requirements in effect at the time served to reduce the size of geographic markets); *see also* *E. I. du Pont de Nemours & Co. v. Kolon Indus., Inc.*, 637 F.3d 435, 442–43 (4th Cir. 2011) (noting relevance of regulatory requirements in determining size of geographic antitrust market); *Hosp. Corp. of Am. v. FTC*, 807 F.2d 1381, 1387 (7th Cir. 1986) (noting that the “certificate of need” requirement served to protect incumbent hospitals from new competition). For example, the 2010 Horizontal Merger Guidelines call for narrower markets in cases where some products but not others have regulatory approval. *See* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 4.2.2 (2010), <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010> [<https://perma.cc/HJ8G-FN32>]; *see also* 2B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW, ¶ 572b (4th ed. 2015) (discussing regulatory requirements as narrowing markets to as to include the range of products approved by the regulator). Barriers to entry, which enhance market power, also include regulatory requirements that give an advantage to incumbents. *See* *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307 (3d Cir. 2007); *Rochester Drug Co-op., Inc. v. Braintree Labs.*, 712 F. Supp. 2d 308, 315 (D. Del. 2010).

¹¹⁷ On the phenomenon of over-declaring standard essential patents, *see supra* text accompanying notes 31–34.

¹¹⁸ *See* 2B AREEDA & HOVENKAMP, *supra* note 116, ¶ 501.

trate, absent an industry standard, builders might regard steel and plastic (PVC) conduit for electric wiring as effective substitutes. However, once a standard with market force approves only steel conduit, as happened in the *Allied Tube* case, a sole producer or cartel of producers of that conduit could have significant power and need not be concerned about competition from PVC.¹¹⁹

In sum, while violation of a FRAND commitment on a SEP is not necessarily an antitrust violation, two important antitrust requirements, power and anticompetitive effects, can be heavily affected by SEP status. Conditionally refusing to license a FRAND-encumbered patent when the relevant agreement requires licensing is clearly a breach of contract, but it can also be an antitrust violation when these conditions are met.

Conditional dealing is unlawful under the antitrust laws only when both power and anticompetitive effects are shown. Conventionally, the relevant anticompetitive effects are market foreclosure or raising rivals' costs. Here, the primary question is whether the condition made it more costly or impossible for a participating firm to operate on the network. Under the restraint of trade standard of section 1 of the Sherman Act, antitrust harm also includes reduced output and higher prices in output markets. Depending on the facts, the victims could be either excluded rivals; those whose costs have been increased; or else downstream firms, including consumers, forced to pay higher prices.

2. *Unconditional Refusals: FRAND Patents and Path Dependent Technologies*

In *Aspen*, the Supreme Court unanimously upheld a plaintiff's jury verdict in a case involving an unconditional refusal to deal.¹²⁰ Although criticism of *Aspen* has been widespread, much of it seems to be driven by a tendency to confuse the

¹¹⁹ Once PVC conduit was approved, it became a market leader. See PERSISTENCE MARKET RESEARCH, *Global Market Study on Electrical Conduit Pipe: Sales Remain Influenced by Environmental Concerns Surrounding Plastics*, (Sept. 2019) <https://www.persistencemarketresearch.com/market-research/electrical-conduit-pipe-market.asp> [<https://perma.cc/B8ZW-KZYH>]. However, PVC conduit had been the target of a standard-setting boycott organized by a cartel of steel conduit manufacturers. See *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 496–97 (1988). If the boycott had succeeded it would very likely have excluded PVC from many building uses.

¹²⁰ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 611 (1985).

Aspen case with the very different essential facility doctrine.¹²¹ The essential facility doctrine is asset based. By contrast, *Aspen's* refusal-to-deal rule is conduct based. Further, the two rules are informed by very different theories of incentives and competitive harm.¹²²

Antitrust analysis of unconditional, unilateral refusals to deal is difficult for several reasons. *First*, an overly broad rule can facilitate competitor free riding on a dominant firm's investment. Smaller rivals might like nothing more than to have ready access to some input that the dominant firm has developed, thus avoiding the risk and development costs. In that case, forcing the dominant firm to supply them can reduce competitors' incentives to invest for themselves.¹²³ For similar reasons, sharing of an important input by two firms may facilitate collusion.¹²⁴ As a result, "essentiality" is a necessary condition for illegality.¹²⁵ If a competing firm can easily duplicate a particular input for itself, antitrust law should not require sharing. A good antitrust rule rewards investment rather than passivity.

Second, remedial problems can be formidable. In order to enforce a dealing order, the court must both identify the asset that is subject to compulsory dealing and determine the price. By contrast, if the claim is of *concerted* refusal to deal, the court may do no more than issue an injunction dissolving the agreement and permitting each firm to act independently.¹²⁶ Unless some mechanism is identified for establishing the price and other terms of sale, these tasks threaten to involve the antitrust tribunal in a form of price regulation. In *Aspen* itself, the antitrust litigation originated in a dispute about revenue sharing,

¹²¹ See *infra* text accompanying notes 164–167.

¹²² *Id.*

¹²³ See 3B AREEDA & HOVENKAMP, *supra* note 92, ¶¶ 771–72.

¹²⁴ See *infra* text accompanying notes 143–144 (discussing 1975 Colorado Attorney General complaint of price fixing case against the ski companies in the *Aspen* case).

¹²⁵ See, e.g., *Pittsburg Cty. Rural Water Dist. No. 7 v. City of McAlester*, 358 F.3d 694, 721–22 (10th Cir. 2004) (holding that a municipal water supply was not essential when other sources were available); *Mass. Sch. of Law at Andover, Inc. v. ABA*, 107 F.3d 1026, 1040–41 (3d Cir. 1997) (holding that the plaintiff did not demonstrate that law school hiring conference was essential when there was no showing that it could not be duplicated); *Blue Cross & Blue Shield United of Wis. v. Marshfield Clinic*, 65 F.3d 1406, 1413 (7th Cir. 1995) (holding that monopoly was not proved and HMO not essential when there were existing, viable alternatives). For a discussion of other decisions, see generally 3A AREEDA & HOVENKAMP, *supra* note 81, ¶ 773b.

¹²⁶ See 3A AREEDA & HOVENKAMP *supra* note 81, ¶ 774c, e.

which the Supreme Court did not resolve.¹²⁷ As the Supreme Court later observed in its *Trinko* decision, which distinguished but did not overrule *Aspen*, the asset that the plaintiff is requesting may be one that was never separately placed on the market at all, but rather was simply some intermediate good in a production process.¹²⁸ That obligates the court to identify the scope of the good or service for which compulsory dealing is appropriate. For these reasons antitrust policy toward unilateral refusals to deal has always been conservative.

Because they are unilateral and do not have a contractual condition attached to them, simple refusals to deal are generally addressed under section 2 of the Sherman Act. The delimiting factors for identifying an anticompetitive unilateral refusal to deal under the *Aspen* formulation are (1) a firm that is dominant or that threatens to become so with respect to the market at issue; (2) a history of cooperative dealing and subsequent repudiation without an adequate explanation; (3) an asset that can be separately identified and sold; (4) a mechanism for identifying the scope and terms of the dealing obligation; and (5) some basis for thinking that relief will make the market perform more competitively.¹²⁹ An additional requirement should be that the original cooperative dealing led to significant, asset-specific investment from which extraction or significant modification would be costly.¹³⁰ This requirement was not shown to be satisfied in *Aspen*.

In *Trinko* the Supreme Court affirmed a dismissal where most of these requirements were not met. First, there was no history of voluntary dealing between the ILEC and CLEC telephone exchange carriers.¹³¹ To the contrary, the parent phone

¹²⁷ The jury approved a damage award based on a decline in the plaintiff's profits during the years that the parties were disputing the revenue sharing venture. The expert had done this by comparing the plaintiff's share of revenues during this period with revenues during the period prior to the dispute. See *Aspen Highlands Skiing Corp. v. Aspen Skiing Co.*, 738 F.2d 1509, 1523 (10th Cir. 1984).

¹²⁸ *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409–10 (2004); see *infra* notes 133–134 and accompanying text.

¹²⁹ For a discussion of the decisions, see 3A AREEDA & HOVENKAMP, *supra* note 81, ¶ 772.

¹³⁰ See HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE §§7.5a,c (6th ed. 2020); *infra* text accompanying notes 154–155.

¹³¹ *Trinko*, 540 U.S., at 408–11. "ILEC," or Incumbent Local Exchange Carrier, refers to the telephone company established as the primary service provider for a particular region, and which owns and has responsibility for most of the infrastructure. By contrast, "CLEC," or Competitive Local Exchange Carrier, refers to a firm that is authorized under the 1996 Telecommunications Act to attach into the network at any feasible point in order to provide services in competition with the ILEC. ILECs are required to:

company, AT&T, had a long history of resisting attachment to its network.¹³² Any cooperation that existed was solely by virtue of the Telecommunications Act, which compelled it under the supervision of the FCC and state regulatory agencies.¹³³

Second, the dealing obligations contained in the Telecommunications Act were not limited to discrete assets that had historically been bought and sold in an independent market. Many of them were “deep within the bowels” of Verizon, as Justice Antonin Scalia put it.¹³⁴ The 1996 Telecommunications Act permitted a CLEC to obtain interconnection at “any technically feasible point” in the incumbent carrier’s net-

[P]rovide[] for the facilities and equipment of any requesting telecommunications carrier, interconnection with the local exchange carrier’s network—

(A) for the transmission and routing of telephone exchange service and exchange access;

(B) at any technically feasible point within the carrier’s network;

(C) that is at least equal in quality to that provided by the local exchange carrier to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection; and

(D) on rates, terms, and conditions that are just, reasonable, and nondiscriminatory. . . .

See 47 U.S.C. § 251(c)(2) (2018).

¹³² See *MCI Commc’ns Corp. v. AT&T Co.*, 708 F.2d 1081, 1096–97 (7th Cir. 1983) (tracing history of AT&T’s refusal to interconnect); see also *Hush-A-Phone Corp. v. United States*, 238 F.2d 266, 269 (D.C. Cir. 1956) (striking down an extreme case of AT&T refusing to interconnect even to non-electronic anti-listening device); Herbert Hovenkamp, *Antitrust and the Regulatory Enterprise*, 2004 COLUM. BUS. L. REV. 335, 367–369; Joseph H. Weber, *The Bell System Divestiture: Background, Implementation, and Outcome*, 61 FED. COMM. L.J. 21, 22–27 (2008).

¹³³ See *Trinko*, 540 U.S. at 409. The Court observed:

The refusal to deal alleged in the present case does not fit within the limited exception recognized in *Aspen Skiing*. The complaint does not allege that Verizon voluntarily engaged in a course of dealing with its rivals, or would ever have done so absent statutory compulsion.

Id.

¹³⁴ *Id.* at 409–10. The Court distinguished *Aspen* from the case:

In *Aspen Skiing*, what the defendant refused to provide to its competitor was a product that it already sold at retail—to oversimplify slightly, lift tickets representing a bundle of services to skiers. . . . In the present case, by contrast, the services allegedly withheld are not otherwise marketed or available to the public. The sharing obligation imposed by the 1996 [Telecommunications] Act created “something brand new”—“the wholesale market for leasing network elements.” The unbundled elements offered pursuant to § 251(c)(3) exist only deep within the bowels of Verizon; they are brought out on compulsion of the 1996 Act and offered not to consumers but to rivals, and at considerable expense and effort. New systems must be designed and implemented simply to make that access possible—indeed, it is the failure of one of those systems that prompted the present complaint.

Id. (citations omitted).

work.¹³⁵ It did not matter whether the output at that point had ever been marketed to any third party. It is one thing to require dealing with respect to an identifiable asset that can be and has been sold separately; it is quite another to identify some intermediate step in a firm's own production process and require separate dealing at that point. By contrast, FRAND agreements apply to patents, which are distinct and freely licensable assets. Further, the FRAND agreement itself manifests a commitment to license them on an unrestricted basis to a variety of takers.

The fourth and fifth elements in the *Aspen* formulation involve determination of the scope of dealing, as well as the mechanisms for assuring that dealing obligations would further competition. In *Trinko* these tasks were taken over by federal (FCC) and state (PSC)¹³⁶ regulators, who responded to and disciplined interconnection violations. The Court concluded that these agencies had been doing their job adequately, performing as "an effective steward of the antitrust function."¹³⁷ In fact, at the time of litigation the FCC had already disciplined the defendant for at least one violation of interconnection obligations.¹³⁸

The *Trinko* Court described *Aspen* as lying "at or near the outer boundary" of antitrust liability under section 2 of the Sherman Act.¹³⁹ On the facts of *Aspen*, it certainly did stretch liability for refusal to deal very far. On the one side were significant collusion risks from joint operations; on the other were relatively modest market harms from the defendant's unilateral termination of the deal. The Court cited only the fact that the joint venture was "presumably profitable" and that the defendant abandoned it without a good explanation.¹⁴⁰

¹³⁵ See *supra* note 131.

¹³⁶ *Trinko*, 540 U.S. at 402 (referencing the Federal Communications Commission (interstate authority) and the New York Public Service Commission (intra-state authority)).

¹³⁷ *Id.* at 414.

¹³⁸ *Id.* at 413 (noting that FCC had investigated the complaint, imposed a "substantial fine," and set up monitoring to assess compliance with a remedy order).

¹³⁹ *Id.* at 409. But *Aspen* is hardly dead. It was applied robustly by the Seventh Circuit in *Viamedia, Inc. v. Comast Corp.* 951 F.3d 429 (7th Cir. 2020).

¹⁴⁰ The Court noted that:

Aspen Skiing is at or near the outer boundary of § 2 liability. The Court there found significance in the defendant's decision to cease participation in a cooperative venture. The unilateral termination of a voluntary (*and thus presumably profitable*) course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end.

These facts are important. Occasionally courts and writers are tripped up into thinking that *Trinko's* characterization of *Aspen* is some kind of free-floating proclamation about refusal-to-deal law generally.¹⁴¹ The Ninth Circuit made that error in *Qualcomm*, and in the process conflated the standard developed in the two decisions.¹⁴² Nothing in either *Aspen* nor *Trinko* suggests that, and such an approach would be inconsistent with the strongly fact-specific nature of judicial construction of section 2 of the Sherman Act.

Aspen occurred in a poorly defined market¹⁴³ with significant risks of collusion between the two parties.¹⁴⁴ While the *Aspen* venture was cooperative and “presumably profitable,”¹⁴⁵ the *Aspen* record did not cite any significant venture-specific investment by either party in reliance on this commitment to a joint sales agreement.¹⁴⁶ The plaintiff acknowledged that it had

Trinko, 540 U.S. at 409 (citations omitted).

¹⁴¹ See, e.g., Tom Campbell & Nirit Sandman, *A New Test For Predation: Targeting*, 52 UCLA L. REV. 365, 385–87 (2004) (discussing *Trinko* and *Aspen*); Alan Devlin & Michael Jacobs, *Antitrust Error*, 52 WM. & MARY L. REV. 75 (2010) (same); Richard A. Epstein, *Judge Koh's Monopolization Mania: Her Novel Antitrust Assault Against Qualcomm Is An Abuse of Antitrust Theory*, 98 NEB. L. REV. 241, 257–60 (2019) (same); Thomas E. Kauper, *Section Two of the Sherman Act: the Search for Standards*, 93 GEO. L.J. 1623, 1636–44 (2005) (same); Randal C. Picker, *Mandatory Access Obligations and Standing*, 31 J. CORP. L. 387, 391–92 (2006) (same); Patrick F. Todd, *Digital Platforms and the Leverage Problem*, 98 NEB. L. REV. 486 (2019) (noting *Trinko's* treatment of *Aspen*). For an observation of the highly fact specific nature of *Aspen*, see Gregory J. Werden, *The “No Economic Sense” Test for Exclusionary Conduct*, 31 J. CORP. L. 293, 295–96 (2006).

¹⁴² *Qualcomm, Inc. v. FTC*, 969 F.3d 974, 993–994 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

¹⁴³ Less than ten years after the decision, the government permitted the two parties to merge, which was clearly inconsistent with the proposition that *Aspen*, Colorado, constituted a relevant geographic market. If it had, this would have been a merger to monopoly. See *Ski Merger May Perk Up Aspen*, N.Y. TIMES, Nov. 20, 1993, at 37, 44. The market in question was for “destination” ski resorts, as the jury found, but it was also permitted to find a relevant submarket for downhill skiing in the *Aspen* area. See *Aspen Highlands Skiing Corp. v. Aspen Skiing Co.*, 738 F.2d 1509, 1513 (10th Cir. 1984). A “destination” ski resort is one that people travel to from long distances, and this suggested that a large group of Rocky Mountain resorts as well as skiing facilities elsewhere were in the geographic market. The defendant complained that there could not be both a relevant market and a relevant submarket, but the Tenth Circuit agreed with the plaintiff that this argument had been waived. On the general irrelevance of “submarkets,” see 2B AREEDA & HOVENKAMP, *supra* note 116, ¶ 533.

¹⁴⁴ See *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 591 n.9 (1985) (noting that the Colorado Attorney General had filed a complaint that the collaboration on tickets facilitated price fixing). It was settled by a consent decree that permitted the venture to continue but with conditions.

¹⁴⁵ *Trinko*, 540 U.S. at 409.

¹⁴⁶ In particular, they made only a very modest investment in ski lifts. See Brief for Petitioner at 28 n.31, *Aspen Skiing*, 472 U.S. at 585 (No. 84-510), 1985

produced no innovations in furtherance of the venture.¹⁴⁷ Nothing suggested that termination of the *Aspen* venture did much more than return the market to its status quo ante.

A great deal has been made of the Court's observation that the jury was entitled to find that the defendant was willing to sacrifice short-term revenues in order to injure a rival.¹⁴⁸ However, the record indicates that sacrifice did not occur at all or was very minimal.¹⁴⁹ The four-mountain ticket sold by the joint venture claimed a higher price, but the defendant had to share the revenue with the plaintiff.¹⁵⁰ Further, the record indicated that, immediately after the termination, skier visits to the defendant's resort increased rather than decreased, and there was no suggestion of either reduced revenue or reduced profits.¹⁵¹ To be sure, that piece of evidence is not necessarily conclusive on the sacrifice issue. For example, the defendant's revenue or profits might have increased even faster had the venture not been terminated, although it is not apparent that is what the Court meant. But neither the Supreme Court nor the Tenth Circuit cited any evidence of sacrifice other than the Court's bare statement.¹⁵² The Tenth Circuit did not discuss sacrifice at all, nor the revenue impact of the termination on the defendant. It did observe, however, that the *plaintiff's* revenue declined when the venture came to an end.¹⁵³

In sharp contrast to the *Aspen* situation, standard setting covering patented technology in a many firm market poses fewer collusion risks and can be expected to produce significantly greater investment in the form of asset-specific commitment to new technologies. Collusion risks are less because these markets typically have hundreds of firms whose relation-

WL 669987 (citing a witness who thought its last lift was added in 1975 or 1976) [hereinafter Brief for Petitioner].

¹⁴⁷ See Reply Brief for Petitioner at 3, *Aspen Skiing*, 472 U.S. at 585 (No. 84-510), 1985 WL 669989 [hereinafter Reply Brief for Petitioner].

¹⁴⁸ *Aspen Skiing*, 472 U.S. at 610-11. For articles discussing the decision, see Nicholas Economides, *Hit and Miss: Leverage, Sacrifice, and Refusal to Deal in the Supreme Court Decision in Trinko*, 10 VAND. J. ENT. & TECH. L. 121 (2007); Kauper, *supra* note 141, at 1623; Marina Lao, *Aspen Skiing and Trinko: Antitrust Intent and "Sacrifice,"* 73 ANTITRUST L.J. 171 (2005); Steven C. Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-sacrifice Standard*, 73 ANTITRUST L.J. 311 (2006).

¹⁴⁹ See, e.g., Reply Brief for Petitioner *supra* note 147, at 10 (describing the record).

¹⁵⁰ See Brief for Petitioner, *supra* note 146, at 10.

¹⁵¹ See *id.*

¹⁵² See generally *Aspen Highlands Skiing Corp. v. Aspen Skiing Co.*, 738 F.2d 1509 (10th Cir. 1984) (citing no evidence).

¹⁵³ *Id.* at 1523.

ship with one another is both horizontal and vertical as well as complementary.¹⁵⁴ Further, some are producer licensors while others are licensees.¹⁵⁵ In addition, the FRAND system encourages rather than discourages new entry by eliminating much of the patent portfolio as a significant entry barrier.

Finally, the FRAND encumbered patents subject to sharing make up only a small portion of the final products. FRAND does not require every firm to share every iota of its technology with everyone else, but only licenses to standard-essential patents. Competition can and does work unabated in other parts of the market. The result has produced fierce competition and remarkable amounts of technological progress. For example, while the cell phone industry is heavily covered by FRAND agreements, sellers compete vigorously in both the provision of cellular networks¹⁵⁶ and the manufacture and sale of devices.¹⁵⁷ Some of the features subject to competition are in the public domain, either because they were never patented or their patents have expired. Other features are protected by non-FRAND patents. Finally, individual participants' products tend to be highly differentiated, which makes collusion less of a threat.¹⁵⁸

On the benefit side, the joint venture benefits that accrued to the firms in *Aspen* were economies of scale from being able to

¹⁵⁴ For example, JEDEC, a prominent developer of standards for microelectronics, has 300 member companies. See *About JEDEC*, JEDEC, <https://www.jedec.org/about-jedec> [<https://perma.cc/ACT6-DZ4B>] (last visited Apr. 6, 2020).

¹⁵⁵ For example, 3GPP, the principal standard setting partnership involved in the Qualcomm litigation, has more than 350 members ranging from very small firms to firms such as Apple, Google, Intel, Microsoft, and Nokia. See *3GPP Membership*, ETSI, <https://webapp.etsi.org/3gppmembership/QueryForm.asp> [<https://perma.cc/2XZ6-GZV5>] (last visited Apr. 6, 2020).

¹⁵⁶ On cell phone carrier market share prior to the Sprint/T-Mobile merger, see STATISTA, *Wireless Subscriptions Market Share by Carrier in the U.S. from 1st Quarter 2011 to 3rd Quarter 2019*, (Dec. 2019) <https://www.statista.com/statistics/199359/market-share-of-wireless-carriers-in-the-us-by-subscriptions/> [<https://perma.cc/3P8X-D5WJ>] (date through Q3 of 2019).

¹⁵⁷ On the market shares of the leading cellphone device manufacturers in the United States, see Team Counterpoint, *U.S. Smartphone Market Share: By Quarter*, COUNTERPOINT (May 17, 2020) <https://www.counterpointresearch.com/us-market-smartphone-share/> [<https://perma.cc/238U-9VGY>] (data through Q1 of 2020); see also Matt Macari, *FRANDs Forever: How the Smartphone Industry Turned a Gentlemen's Agreement into a Full-Scale Patent War*, VERGE (Feb. 16, 2012, 4:01 PM), <https://www.theverge.com/2012/2/16/2786970/FRAND-smartphone-industry-apple-motorola-samsung> [<https://perma.cc/962L-3FFJ>] (analyzing the relationship between FRAND and the cell phone industry).

¹⁵⁸ On product differentiation and collusion risks, see HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* § 4.4 (6th ed. 2020).

market all of the parties' mountains together.¹⁵⁹ The network benefits that can accrue from multi-firm standard setting in a market requiring interoperability are much more substantial.¹⁶⁰ Depending on the extent and depth of path dependent investment, loss of access could result in higher prices or deficient service, both of which are within the boundaries of the Sherman Act's remedial concerns.¹⁶¹ While the *Antitrust Law* treatise generally defends a restrictive approach to unilateral duties to deal,¹⁶² it has recognized an exception for refusals in networked industries in which coordination is required and a firm has significant market power:

Liability can make sense in network industries where the network has evolved with multifirm participation and cooperation is necessary for the network's continued efficient operation. The case for compelled dealing is stronger if the network developed in a cooperative regime and a dealing order serves mainly to preserve a preexisting practice rather than create a new one.¹⁶³

The *Aspen* Court made clear that it was not applying the essential facility doctrine.¹⁶⁴ While the two rationales for compelling dealing under the antitrust laws are sometimes conflated, they rest on very different grounds. The essential facility doctrine is much more difficult to justify outside of the regulatory context. It is based on the idea that some "facilities," or assets, are so essential in and of themselves that the owner has a duty to share them.¹⁶⁵ Recipients need do no more than request access. By contrast, *Aspen* encourages individual firms to invest in a joint enterprise, confident that they will have access to the necessary technology.¹⁶⁶

¹⁵⁹ *Aspen Highlands Skiing Corp. v. Aspen Skiing Co.*, 738 F.2d 1509, 1522–23 (10th Cir. 1984).

¹⁶⁰ See, e.g., *Golden Bridge Tech., Inc. v. Motorola, Inc.*, 547 F.3d 266, 273 (5th Cir. 2008) (listing economies of scale from earlier cellular standard, 3G, as including economies of scale, reducing consumer search costs, promoting technical compatibility); see also Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 926 (2001) (networks achieve economies of scale through interfirm cooperation). For an important foundational piece, see John C. Panzar & Robert D. Willig, *Economies of Scale in Multi-Output Production*, 91 Q.J. Econ. 481 (1977); see also Herbert Hovenkamp, *Antitrust and the Costs of Movement*, 78 ANTITRUST L.J. 67, 85–86 (2012) (discussing the benefit of networks).

¹⁶¹ 15 U.S.C. § 2 (2018).

¹⁶² See 3B AREEDA & HOVENKAMP, *supra* note 81, ¶ 771.

¹⁶³ *Id.* ¶ 772.

¹⁶⁴ See *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 611 n.44 (1985).

¹⁶⁵ See, e.g., Marina Lao, *Search, Essential Facilities, and the Antitrust Duty to Deal*, 11 NW. J. TECH. & INTELL. PROP. 275, 287 (2013).

¹⁶⁶ See *Aspen*, 472 U.S. at 600–01.

While the essential facility doctrine is conducive to competitor passivity, the *Aspen* rule does precisely the opposite: it serves to protect and thereby encourage reasonable investment, particularly in technologies that are specialized, individually costly to develop, and where compatibility or interconnectivity among multiple firms is necessary. The idea that a facility is “essential” indicates that rivals are unable and need not bother to develop their own alternatives. Instead, they should seek a right to connect into the dominant firm’s facility. By contrast, the *Aspen* rule is based on a premise of initial voluntary commitment to invest jointly. If one firm later repudiates that commitment in a way that threatens to undermine it, those investment backed expectations are lost.

For this reason, a recent Antitrust Division brief suggesting that the *Aspen* rule applies only where the original arrangement between the parties is noncontractual seems precisely wrong.¹⁶⁷ While an enforceable contract may not be essential, there must be enough of a commitment and expectation of cooperation to guide the parties’ future investment decisions. That is, the more certain and enforceable the initial agreement among the parties, and the more calculated to induce path dependence, the more the defendant’s subsequent repudiation is likely to upset settled expectations and harm consumers in the process.

As noted previously, *Aspen* is widely cited for the proposition that some kind of “sacrifice” is essential to liability.¹⁶⁸ The record indicates that no such sacrifice had occurred, but only that the joint venture had apparently been profitable and its termination led to the plaintiff’s decline.¹⁶⁹ Whether or not the Court was mistaken about the facts, however, it did make “sacrifice” relevant to a consideration of liability.¹⁷⁰ One problem with this sacrifice test is that it fails to distinguish ordinary

¹⁶⁷ See United States’ Statement of Interest Concerning Qualcomm’s Motion for Partial Stay of Injunction Pending Appeal at 5–6, *FTC v. Qualcomm*, 411 F. Supp. 3d 658 (N.D. Cal. 2019) (No. 19-16122), 2019 WL 3306496, <https://www.justice.gov/atr/case-document/file/1183936/> [<https://perma.cc/TD48-2W9P>]. In its 2020 *Viamedia* decision, the Seventh Circuit also based its *Aspen* holding on initial voluntary interconnection agreements, which Comcast later repudiated. See *Viamedia, Inc. v. Comast Corp.*, 951 F.3d 429, 479 (7th Cir. 2020).

¹⁶⁸ See *supra* note 148.

¹⁶⁹ See *Aspen*, 472 U.S. at 608; *id.* at 610–11 (jury entitled to conclude that the defendant “was willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival”); *supra* text accompanying notes 144.

¹⁷⁰ *Aspen*, 472 U.S. at 608–10.

investment that involve costs up front and payoffs later.¹⁷¹ A firm that builds a new plant makes a “sacrifice” to the extent that costs come first, and gains only after the plant goes into production. If it also knows that the firm’s increase in output will injure a rival—as any significant output increase in a concentrated market is likely to do—does that mean we should condemn it as exclusionary? After all, in a duopoly market such as Aspen, Colorado, one firm’s investment and output gain would necessarily come at the expense of its rival. In short, “sacrifice” adds nothing to our understanding of the competitive harm arising from *Aspen*-style situations and may be misleading. Any view of investment other than the very short-run involves some element of sacrifice.

In any event, whether or not *Aspen* requires some conception of “sacrifice,” the facts of *Qualcomm* met it.¹⁷² By refusing to license to competitors, Qualcomm gave up short-term licensing revenue from these firms, and this sacrifice was profitable only to the extent that it served to injure or exclude these competitors.¹⁷³ Very largely the same thing can be said of its exclusive dealing and loyalty discount campaigns involving firms such as Apple.¹⁷⁴ It paid Apple significant rebates or accepted reduced returns in exchange for a promise not to deal with Qualcomm’s product market competitors; the profitability of these payments depended on their eventual success in suppressing the output of rivals.¹⁷⁵

The essential facility doctrine is different, and the *Trinko* case was more consistent with its principles.¹⁷⁶ The Telecommunications Act at issue in *Trinko* permitted competitive exchange carriers to interconnect with the dominant firm’s facility no matter how small their investment in infrastructure.¹⁷⁷ This was also true of the *Otter Tail Power* case thirty years earlier, which interpreted antitrust law to require the defendant to “wheel” power for small utilities, whether or not they had developed their own generation capacity.¹⁷⁸ In contrast to *Trinko*, the Court found antitrust liability in *Otter Tail*.

¹⁷¹ See *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1079–80 (10th Cir. 2013) (Gorsuch, Circuit J.) (wrestling with this ambiguity).

¹⁷² *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658 (N. D. Cal. 2019).

¹⁷³ *Id.* at 761–62.

¹⁷⁴ *Id.* at 762–64.

¹⁷⁵ *Id.*

¹⁷⁶ *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004).

¹⁷⁷ See *AT&T Corp. v. Iowa Utilities Bd.*, 525 U.S. 366, 385–86 (1999) (giving FCC broad authority over interconnection between ILECs and even small CLECs).

¹⁷⁸ *Otter Tail Power Co. v. United States*, 410 U.S. 366, 380–81 (1973).

The important difference was that, in the former case, the then existing Federal Power Commission lacked the authority to compel wheeling of power in behalf of competing utilities.¹⁷⁹ Wheeling power for utilities that lacked their own generation capacity was a close equivalent to interconnection in the phone system. By contrast, in *Trinko* the relevant government agencies not only had the power to compel interconnection, the FCC had actually exercised that power in this very case.¹⁸⁰

Aspen, in contrast to essential facility cases, was rooted in specific prior cooperation and investment by the plaintiff, reliance and path dependence, and subsequent repudiation. The Court held essentially that once the defendant had made a commitment to its rival to develop a joint enterprise, it could not abandon that enterprise without an adequate business justification in those situations where the change injured competition.¹⁸¹

Not only is the *Aspen* approach to unilateral dealing obligations easier to justify as an abstract proposition, it also contains inherent limitations that make it more manageable by an antitrust tribunal. Because there is no prior history of voluntary dealing, the essential facility doctrine naturally invites questions about the scope of the property right that must be shared and the identification of those to whom the sharing obligation runs. These are both issues that are much better addressed by a regulatory agency applying an appropriate statute.¹⁸² By contrast, the *Aspen* duty to deal involves a specific voluntary commitment between specific parties, covering stipulated assets, and under stipulated terms that can be expected to produce reliance that affects the direction of investment.¹⁸³

Joint enterprises such as FRAND produce path dependence when they redirect the parties' investments in ways that are subsequently costly to change.¹⁸⁴ As in all cases of profit-

¹⁷⁹ See *id.* at 375–76. Subsequent statutory amendments authorized FERC, the FPC's successor agency, to compel wheeling. See 16 U.S.C. §824a-3 (2018); Nicholas W. Fels & David N. Heap, *Compulsory Wheeling of Electric Power to Industrial Consumers*, 52 *FORDHAM L. REV.* 219, 226 (1983).

¹⁸⁰ See *supra* text accompanying notes 157–58.

¹⁸¹ See *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 608 (1985) (“[S]trongly supported by Ski Co.’s failure to offer any efficiency justification whatever for its pattern of conduct.”).

¹⁸² See *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410–11 (2004).

¹⁸³ See *Aspen*, 472 U.S. at 605–11.

¹⁸⁴ For some of the large literature on the subject, see OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING* 2 (1985); Victor P. Goldberg, *Regulation and Administered Contracts*, 7 *BELL J. ECON.* 426, 439–41 (1976); Benjamin Klein et al., *Vertical Integration, Appropriable*

maximizing behavior, the value of the firm becomes a function of its prior choices.¹⁸⁵ This is also true of networks, where the ability to operate on the network is often essential to a firm's survival.

In *Aspen*, the Supreme Court required that the dominant firm's subsequent withdraw from its contractual commitment be without an adequate business justification.¹⁸⁶ Not every joint enterprise is successful, and the law should not require a firm to continue in a venture that is no longer economically justified. At the same time, however, when one party is undermining another party's investments in a way that is conducive to reduced output and higher prices, antitrust intervention is appropriate.

One thing that makes FRAND obligations distinctive is that the contractual obligation to deal applies strictly to patents. Licensing out a patent does not require any further ongoing commitment from the patentee. Further, the patent itself is non-rivalrous, which means that the licensee's use does not take any productive capacity away from the licensor or require any of its administrative effort. FRAND licenses are by their nature non-exclusive.¹⁸⁷ Giving up a FRAND license imposes no limitations whatsoever on the power of the patentee to take full advantage of its own production assets and use them exclusively.

This fact makes patent cross-licensing very distinctive from more traditional production joint ventures, which usually involve rivalrous plants, production, or research facilities with a finite capacity that must be shared. For example, if Qualcomm licenses its 5G portfolio of standard essential modem patents to one or many competing makers of 5G modems under a FRAND license, Qualcomm can go right on

Rents, and the Competitive Contracting Process, 21 J.L. & ECON. 297, 298 (1978). On the antitrust issues, see Hovenkamp, *supra* note 109 at §7.5c.

¹⁸⁵ See Cotter, Hovenkamp & Siebrasse, *supra* note 25, at 1521–22. On the relationship between path dependence and firm value, see Lucian Arye Bebchuk & Mark J. Roe, *A Theory of Path Dependence in Corporate Ownership and Governance*, 52 STAN. L. REV. 127, 137 (1999).

¹⁸⁶ *Aspen*, 472 U.S. at 608–10 (reciting the defendant's proffered justifications and why the Court found them unacceptable).

¹⁸⁷ See David J. Teece, *The "Tragedy of the Anticommons" Fallacy: A Law and Economics Analysis of Patent Thickets and FRAND Licensing*, 32 BERKELEY TECH. L.J. 1489, 1522 (2017). EU Guidelines require that all FRAND licenses be non-exclusive if the pool in question has market power. Commission, *Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements* ¶ 261(d), [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0328\(01\)&from=en](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0328(01)&from=en) [https://perma.cc/3CH6-RFRP].

producing as many 5G modems as it wishes. By contrast, even in a very simple joint venture such as the one in *Aspen*, continuing the joint venture requires the firms to share certain parts of their own production and output and continuously manage how shared assets are used.¹⁸⁸

Antitrust intervention also requires evidence that the refusal to continue an agreed upon course of conduct harms competition, and that intervention will make the market perform more competitively.¹⁸⁹ One reason this might not be so is that the market is competitive in any event. This is often true in bilateral monopoly situations in competitive markets. For example, two farmers might jointly develop an irrigation pond at great expense, and one might later withdraw, perhaps without a business justification, leaving the other in financial distress. The market remains competitive, however, even if the breakup ruins one of the two farmers. While the withdrawal might be a breach of contract or a tort, it would not violate the antitrust laws.

Another possibility is that the joint venture was simply an excuse for price fixing. For example, if the all-*Aspen* joint lift ticket was simply a way of setting the cartel price for downhill skiing in *Aspen*, then a breakup could well make the market perform better.¹⁹⁰ The dangers of collusion in the *Aspen* case were certainly greater than the dangers of collusion in a FRAND case involving a large number of participants and differentiated output.¹⁹¹ As the *Allied Tube* case suggests, however, collusion among standard setters cannot entirely be ruled out.¹⁹² In that case members of a large SSO with a substantial investment in manufacturing steel conduit collusively passed a rule outlawing PVC conduit, which threatened to be a major market disrupter.¹⁹³

A FRAND obligation indicates that the patentee has made a prior voluntary commitment to share its technology on FRAND terms. In exchange it expects that others would rely on that commitment, designing their own technology around the expectation that FRAND-encumbered patents would be available to them for a FRAND royalty. The market shapes itself around

¹⁸⁸ *Aspen*, 472 U.S. at 608.

¹⁸⁹ See *supra* text accompanying notes 53–54.

¹⁹⁰ See *Aspen*, 472 U.S. at 591 n.9; *supra* note 124 (noting the government investigation into price-fixing).

¹⁹¹ See discussion *supra* text accompanying note 151.

¹⁹² *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 496–97 (1988).

¹⁹³ See *id.* at 496–97.

the technologies contemplated by SEPs. Indeed, that is the entire point of the SSO, and also serves to explain why a firm's later, unjustified withdrawal can harm competition.

The *Aspen* case assumed some of this.¹⁹⁴ Once the parties agreed on a joint marketing scheme, they almost certainly adjusted their advertising and other promotional efforts around that scheme. One fact that places *Aspen* near the outer boundaries of antitrust liability, however, is that the Court permitted the jury to find a violation even though the amount of dedicated investment that the plaintiff lost was modest.¹⁹⁵ Mainly, the two firms had agreed with each other to market an "All-Aspen" lift ticket jointly.¹⁹⁶ They apparently did not redirect significant investment into infrastructure that would have been useless had the venture collapsed.

Aspen limited its reach to situations where the defendant had voluntarily cooperated with a rival and later reneged without an adequate explanation. In her *Qualcomm* decision, Judge Koh described a similar situation.¹⁹⁷ Qualcomm or its predecessors voluntarily made FRAND commitments on its patents and then reneged on those commitments.¹⁹⁸ *Aspen's* limitation to repudiation of established arrangements speaks to the role of technological path dependence in the creation or maintenance of dominance.¹⁹⁹ By giving a particular technological choice more predictable costs, FRAND encourages developers to invest in a particular direction.

Whatever one might think of the essential facility doctrine as a tool of antitrust rather than regulatory policy, the contrasting *Aspen* doctrine rests on distinct and solid grounds in situations that involve reliance and significant joint investment. Joint ventures enable firms to combine complementary technologies or business models and thus facilitate growth. This has been true of some very prominent ventures that involved production or research facilities, such as the General Motors-Toyota venture to design and produce a single small car,²⁰⁰ the joint venture between Kodak and General Electric to

¹⁹⁴ *Aspen*, 472 U.S. at 591.

¹⁹⁵ *Id.* at 586.

¹⁹⁶ *See id.* at 606.

¹⁹⁷ *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 669–80 (N.D. Cal. 2019).

¹⁹⁸ *Id.* at 760 ("Qualcomm Terminated a Voluntary and Profitable Course of Dealing").

¹⁹⁹ On this point, see Cotter, Hovenkamp & Siebrasse, *supra* note 25.

²⁰⁰ *See In re General Motors Corp.*, 103 F.T.C. 58, 1 (1984). On competitive effects, see Kathryn M. Fenton, *GM/Toyota: Twenty Years Later*, 72 ANTITRUST L.J. 1013, 1013–21 (2005).

develop an electronic flash device for cameras,²⁰¹ or the venture between Sony and N.V. Philips to develop technology for rewritable compact discs.²⁰²

The E.U. *Microsoft* server decision also illustrates some of these propositions.²⁰³ That decision indicates the importance of path dependence in the maintenance of monopoly power, particularly in areas where technical compatibility is critical to the enterprise. Initially, Microsoft made its Windows operating system for desktop and laptop computers with active operators. It did not develop an operating system for servers, which are computers that are largely untended and that perform routine functions such as managing email or web traffic. Other firms, including Novell, developed operating systems for servers that were designed to operate on the networks of Windows machines. For these, Microsoft provided protocols essential to keeping these firms abreast of updates in the Windows operating system. Later, however, Microsoft entered the server operating system business itself in competition with these licensees. At that point it began to degrade or delay the information that it provided to the competing sellers of server systems.²⁰⁴ The effect was to make these competing systems less reliable. As a remedy, the EU tribunal required Microsoft to provide updated and adequate protocols.²⁰⁵ Liability, as in *Aspen*, lay in a course of conduct, not in any finding that the Microsoft operating system was an essential facility.²⁰⁶

A compulsory dealing order is justified only if it creates a reasonable expectation that the market will become more competitive—that is, that output will be higher, and prices lower, than if relief were not provided. One common criticism of the “essential facility” doctrine, which *Aspen* did not involve, is that if a tribunal simply orders a dominant firm to share an asset

²⁰¹ See *Berkey Photo, Inc. v. Eastman Kodak Co.*, 457 F. Supp. 404, 419 (S.D.N.Y. 1978), *aff'd in part and rev'd in part*, 603 F.2d 263, 267–71 (2d Cir. 1979).

²⁰² See *Princo Corp. v. Int'l Trade Comm'n*, 616 F.3d 1318, 1322–23 (Fed. Cir. 2010) (en banc).

²⁰³ Case T-201/04, *Microsoft Corp. v. Comm'n*, 2007 E.C.R. II-3601, <http://curia.europa.eu/juris/showPdf.jsf?docid=62940&pageIndex=0&doclang=EN&mode=&dir=&occ=first&part=1&cid=9183931> [<https://perma.cc/9HWL-5NHE>]; see Herbert Hovenkamp, *supra* note 160, at 86–87.

²⁰⁴ See *Microsoft Corp.*, 2007 E.R.C. II-3601 ¶ 575.

²⁰⁵ *Id.* ¶ 1231 (“Microsoft is . . . required to ensure that the interoperability information disclosed is kept updated on an ongoing basis and in a timely manner”).

²⁰⁶ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 600 (1985).

the firm is likely to respond by setting its monopoly price.²⁰⁷ As a result, output will not increase under dealing. The dealing order may benefit the rival who can now purchase the input, but customers will be no better off. Real relief that increases competition requires both recognition of a duty to deal and setting of the terms of dealing.

In situations involving standard essential patents, these problems are largely addressed by the FRAND commitment itself, which includes a promise to submit the royalty question to an independent decision maker.²⁰⁸ The antitrust tribunal may also issue an injunction interpreting the scope of the FRAND commitment, requiring arbitration with respect to every potential licensee who is covered. To the extent that the challenged violation results in less participation, lower production or higher prices than a FRAND tribunal would have permitted, antitrust relief should bring output and price into line.

Antitrust dealing orders are well suited to remedy one of the practices at issue in the *Qualcomm* case—namely, that the defendant selectively refused to deal with or discriminated against prospective FRAND-qualified licensees depending on whether they competed with Qualcomm in the product market.²⁰⁹ The FRAND violation is clear without further market analysis to the extent that the FRAND obligation demands non-discriminatory licensing to all parties practicing on the standard.²¹⁰

A refusal to deal with competitors additionally violates the antitrust rule of reason only if it produces anticompetitive effects. Once again, that presents a fact question, and not every refusal to license in violation of a FRAND commitment will be an antitrust violation. An antitrust violation would occur if, for example, the defendant's selective denial of standard essential patents to market rivals serves to impede their growth, raises their costs, or perhaps exclude them from the market altogether. All of these concerns are conventional in the antitrust law of exclusive dealing and quasi-exclusive dealing.²¹¹ Indeed, evading a FRAND requirement by licensing selectively only to noncompetitors threatens to undermine the entire competitive purpose of the joint venture. The purpose of standard

²⁰⁷ See 3A AREEDA & HOVENKAMP, *supra* note 81, ¶¶ 773c., 774b.

²⁰⁸ See *supra* text accompanying note 23.

²⁰⁹ See *FTC v. Qualcomm, Inc.*, 411 F. Supp. 3d 658, 762–72 (N.D. Cal. 2019) (discussing Qualcomm's exclusive dealing).

²¹⁰ See, e.g., *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 876–77 (9th Cir. 2012).

²¹¹ See 11 AREEDA & HOVENKAMP, *supra* note 81, ¶1821.

setting is to design a standard so that goods can be produced competitively within a shared technology.

The Ninth Circuit's odd and unprecedented approach to refusal to deal stood the traditional critique of *Aspen* on its head. One frequent criticism of antitrust refusal to deal doctrine is that the all-important element of consumer harm is missing. A dealing order without price setting simply preserves the monopoly price and output. In sharp contrast, the Ninth Circuit dismissed the refusal to deal claim because there was insufficient evidence of harm to competitors, although it conceded that there was harm to purchasers. It concluded that harms to purchasers "are not 'anticompetitive' in the antitrust sense," because they do not involve "restraints on trade or exclusionary conduct in the area of effective competition."²¹²

What the court meant by his later statement is that the consumers were not in the same market as the defendant and its rivals.²¹³ True enough, the consumers were not competing chip makers, but the entire purpose of the antitrust enterprise is their protection. Typically, purchasers are not producers in the same relevant market as sellers. That is why they are purchasing.

Antitrust also has a role to play in the case of tying or similar practices. To the extent the owner of a FRAND-encumbered patent licenses only on the condition that the implementer also purchases its hardware or other products or services, the firm undoubtedly is in breach of its FRAND commitments. Whether it also commits an antitrust violation depends on power and competitive effects. As noted previously,²¹⁴ tying a product to a FRAND-encumbered patent can be a way of FRAND royalty avoidance: the seller simply obtains an effectively higher price for the patent by attaching the increment to the product. Tying in order to evade a controlled price harms consumers by "extraction" rather than exclusion. As such it would be reachable under section 1 of the Sherman Act if it results in higher prices. A Sherman Act section 2 violation would require a showing of market exclusion,

²¹² *Qualcomm, Inc. v. FTC*, 969 F.3d 974, 992 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

²¹³ The court borrowed the "area of effective competition" language from the Supreme Court's statement, where it was used to describe the boundaries of the relevant market. See *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 (2018) ("the relevant market is defined as 'the area of effective competition,'" quoting *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965)).

²¹⁴ See *supra* text accompanying notes 147–66.

most generally in the market occupied by tied product rivals.²¹⁵ Depending on the circumstances the same tie might accomplish that as well.

B. Collateral Issues Affecting Application of the Antitrust Laws

1. “Regulatory” Deference? Government Regulation vs. Contract

One common theme in antitrust cases involving regulated industries is that the role of the antitrust laws must be fashioned so as not to interfere excessively with the regulatory regime.²¹⁶ The doctrine of “implied immunity” accounts for one way that the courts have given effect to that concern.²¹⁷ In *Trinko*, the Court concluded that immunity did not apply because the 1996 Telecommunications Act contained an antitrust “saving” clause that preserved antitrust liability for disputes that were also covered by the Telecommunications Act.²¹⁸ Nevertheless, the Court declined to find liability, reasoning essentially that the regulatory agencies were performing the antitrust function.²¹⁹

Saving Clause issues aside, implied immunity is a narrowly construed doctrine that serves to immunize conduct where a regulatory agency has jurisdiction over it and has been actively involved in regulating it.²²⁰ Because federal agencies are staffed by professional government employees, their control is public. The antitrust “state action” doctrine operates to create an analogous immunity for conduct that has been regulated by state law, immunizing private acts only when they are clearly authorized by state law²²¹ and actively supervised by the state itself.²²² As a result, private market participants cannot be the final word in supervision.²²³

²¹⁵ See 9 AREEDA & HOVENKAMP, *supra* note 45, ¶¶ 1728–29.

²¹⁶ See 1A PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶ 243–45 (4th ed. 2015).

²¹⁷ See *id.* ¶ 243d, e.

²¹⁸ See 47 U.S.C. § 152(b)(1) (2018) (“[N]othing in this Act . . . shall be construed to modify, impair, or supersede the applicability of any of the antitrust laws.”); *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 406–7 (2004).

²¹⁹ See *supra* text accompanying note 162.

²²⁰ 1A AREEDA & HOVENKAMP, *supra* note 216, ¶ 243e.

²²¹ *Id.* ¶¶ 224, 225.

²²² *Id.* ¶¶ 226, 227.

²²³ See, e.g., *N.C. State Bd. of Dental Exam’rs v. FTC*, 457 U.S. 494, 514–15 (2015).

FRAND is not a government regulatory regime at all, but a set of private rules created and supervised by a joint venture of interested market participants. Should a set of purely private rules serve to immunize conduct that is addressed under the antitrust laws but that may also be a violation of private rule making? Of course, there could be issue preclusion, or collateral estoppel of previously determined facts in a situation involving both a FRAND contract dispute and an antitrust dispute. For example, a finding in a FRAND case that the licensing agreement was not violated, or that a patent in question was invalid, could be preclusive of some facts in subsequent litigation involving the same party, whether under the antitrust laws or some other body of law.²²⁴ Aside from that, no principle calls for antitrust deference to a private contractual regime.

One possible objection to finding an antitrust violation when the defendant's conduct has also violated its FRAND obligation is that this threatens a form of double liability, once for breach of the agreement and a second time for the antitrust violation. There is no basis for this concern. Many federal antitrust violations are also breaches of contract, torts, or violations of some other body of law, including state antitrust law. The remedy in these cases is not to dismiss one or the other claim at the onset, but rather to avoid double counting of damages for the same harm once liability for both has been determined. For example, if conduct is found to be both a violation of a federal statute and of a state common law contract rule, the damages remedy will include all elements available under each provision, but those that are duplicated must be remitted so that a plaintiff can collect only once for the same injury.²²⁵

²²⁴ See, e.g., *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 339 (1971); *Ohio Willow Wood Co. v. Alps South, LLC*, 735 F.3d 1333, 1342–44 (Fed. Cir. 2013).

²²⁵ See, e.g., *Martinez v. The Port Authority of N.Y. and N.J.*, 445 F.3d 158, 159–61 (2d Cir. 2006) (holding that to the extent claims of malicious prosecution and false arrest produced the same injury lower court was correct not to permit recovery for both); *Weathers v. Am. Family Mut. Ins. Co.*, 793 F. Supp. 1002, 1028–29 (D. Kan. 1992) (holding that a plaintiff who brings claim on two different tort theory is entitled to only single compensatory damages); *Mailman's Steam Carpet Cleaning Corp. v. Lizotte*, 616 N.E.2d 85, 89 (Mass. 1993) (holding that a plaintiff who prevailed under both theories of breach of warranty and misrepresentation could only have a single recovery for its injury); *Martin v. Jones*, 41 N.E.3d 123, 142–43 (Ohio Ct. App. 2015) (holding that while plaintiff prevailed on both a breach of contract theory and a tort theory for the same injury, he would be permitted to recover only the amount of his actual injury); see also *Clayton Brokerage Co. of St. Louis, Inc. v. Pilla*, 632 S.W.2d 300, 306 (Mo. Ct. App. 1982) (holding that where plaintiff prevailed on both a fraud claim and a breach of

As a result, one cannot avoid an antitrust claim by showing that the conduct in question is also a breach of contract.²²⁶

One obvious difference between contract and antitrust damages is that the antitrust violation permits recovery of treble damages plus attorney fees, while breach of the FRAND agreement does not.²²⁷ In that case, the appropriate outcome would be to award antitrust treble damages, but not an additional monetary award for breach of the FRAND obligation to the extent that it was based on the same injury.

Injunctions generally do not present a problem of duplicative recovery as long as the scope of the injunction is the same for both causes of action. If a particular injury results from both breach of a FRAND agreement and an antitrust violation, the likely remedy is an injunction under either or both provisions for harm that is threatened to recur, and a *single* set of damages for any past losses.

2. *Holding Up vs. Holding Out: Antitrust Liability? And for Whom?*

The familiar holdup story in patenting is that a patentee can strategically time its infringement suit in order to maximize the penalty it can extract from an infringer.²²⁸ For example, if an infringer has made a \$100,000,000 largely irreversible commitment to a particular technology it will be willing to pay anything up to that amount in order to obtain an essential license.²²⁹ The impact of the holdup literature has been signifi-

contract claim and recovered precisely the same amount of damages for each of the two claims, the award effectively gave the plaintiff impermissible double damages).

²²⁶ See, e.g., *Fineman v. Armstrong World Indus., Inc.*, 980 F.2d 171, 218 (9th Cir. 1992) (where both antitrust claims and common law tort and contract claims were predicated on the same loss of future profits, plaintiff must be limited to a single recovery and that “[t]hus the district court may appropriately award a single compensatory damage figure, which might, upon retrial represent the jury award arising from the breach of contract claim, compensatory tort damages, or the antitrust damages prior to trebling”).

²²⁷ Neil W. Hamilton & Virginia B. Cone, *Mitigation of Antitrust Damages*, 66 OR. L. REV. 339, 347–48 (1987).

²²⁸ See Cotter, Hovenkamp & Siebrasse, *supra* note 25, at 1505–06.

²²⁹ In *Broadcom*, the Third Circuit observed:

[A standard-setting organization] may complete its lengthy process of evaluating technologies and adopting a new standard, only to discover that certain technologies essential to implementing the standard are patented. When this occurs, the patent holder is in a position to “hold up” industry participants from implementing the standard. Industry participants who have invested significant resources developing products and technologies that conform to the standard will find it prohibitively expensive to abandon their investment and switch to another standard. They will have become

cant and it undoubtedly influenced such decisions as *eBay, Inc. v. MercExchange, LLC*,²³⁰ which took away the more-or-less automatic right to an injunction for patent infringement. The twin requirements of the SEP process can be viewed as addressing holdup by, *first*, requiring participants to provide timely notice of any IP rights that they plan to assert; and *second*, committing in advance to license their rights on a FRAND basis.

An alternative account of the process is that what is really occurring is “holding out” by standard implementers at the expense of inventors. In this account the implementers understand that only one among alternative technologies will be chosen, and they agree either to exclude a particular technology altogether, or else conditionally approve a particular technology in exchange for a below market royalty or some other costly concession.²³¹

Currently there is very little empirical support for the holding out explanation for standard essential patents and a great deal of evidence against it. The holding out theory also contains important analytic and economic flaws.²³² In the holdout scenario a cartel of purchasers refuses to buy from the owner of a SEP unless the owner reduces its price to meet their terms. This suggests a bargaining symmetry that can apply to ordinary products in competitive markets: As buyer, I can refuse to pay the asking price for your cow and go elsewhere. As seller, you can make a better offer but you cannot do much more than that, because I have no legal obligation to buy your cow and I am not stealing it. But that symmetry generally does not apply to patents. The buyer does not have the option of walking away if its refusal would constitute patent infringement.²³³ The SSO can declare all the alternative standards that it wants, but if any manufacturer’s device ends up practicing the patent, infringement liability can follow. Further, the SEP patentee, just

“locked in” to the standard. In this unique position of bargaining power, the patent holder may be able to extract supracompetitive royalties from the industry participants.

See, e.g., *Broadcom Corp. v. Qualcomm, Inc.*, 501 F.3d 297, 300310 (3d Cir. 2007)

²³⁰ 547 U.S. 388, 392–94 (2006).

²³¹ See Cotter, Hovenkamp & Siebrasse, *supra* note 25, at 1548–53.

²³² For a good exploration of the issues, see Brief of Amicus Curiae Timothy J. Muris in Support of Appellee at 20–21, *FTC v. Qualcomm Inc.*, (9th Cir. Nov. 29, 2019) (No. 19–16122), 2019 WL 6683006.

²³³ See Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 MINN. L. REV. 521, 539–41, 557 (1981).

as any other, is entitled under the Seventh Amendment to a jury determination of royalties.²³⁴

The holdout story is also undermined by the fact that in the FRAND scheme a royalty has not yet been determined when the FRAND commitment is made. Further, when the royalty is determined it is generally by a neutral third party such as a federal court or arbitrator, and in an adversarial proceeding.²³⁵ This leaves little basis for thinking that implementers are concertedly boycotting innovators in order to reduce their royalties to below market values. The holding out theory would additionally require some basis for thinking that existing FRAND royalty tribunals systematically undercompensate the owners of SEPS. The evidence strongly suggests the contrary. For example, one consequence of overclaiming, discussed previously, is that pools of SEPS are too large because they include many patents that are not essential at all.²³⁶ To the extent this is so the pool will be diluted and the royalty on individual patents will be too low. This is particularly likely when the courts adopts a “top down” approach that assesses royalties by beginning with an aggregation of all of the patents in the pool and then divides up royalties accordingly.²³⁷ However, federal tribunals will then adjust the pool in order to reflect exclusion of patents that are not in fact essential.²³⁸

In addition, large consortia such as those that manage standard setting for the cell phone industry have a diverse membership that includes patentees, non-patentee manufacturers, research firms, software companies that appear mainly as licensees, and the like. While some firms might profit from collusion to suppress patent prices, others clearly would not. The very diversity of the organization serves to reduce the opportunities for and mechanisms of collusion significantly.

Finally, the fact of persistent overclaiming of SEP status is also inconsistent with the holdout theory, which is that the

²³⁴ See *TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 943 F.3d 1360, 1373 (Fed. Cir. 2019) (holding that a “release payment” given as partial settlement of FRAND licensing dispute was a payment in lieu of damages, legal rather than equitable in nature, and thus fell within entitlement to a jury trial).

²³⁵ See Norman V. Siebrasse & Thomas F. Cotter, *Judicially Determined FRAND Royalties*, in 1 *THE CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW* 366 (Jorge L. Contreras, ed. 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2712837 [<https://perma.cc/BYG2-K9GU>].

²³⁶ See *supra* text accompanying notes 31–34.

²³⁷ *E.g.*, *TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 943 F.3d 1360, 1367 (Fed. Cir. 2019) (describing the “top down” approach).

²³⁸ Siebrasse & Cotter, *supra* note 6, at 1216–26.

standard setters are operating as a buyers' cartel in order to suppress royalties.²³⁹ Buy-side cartels, just as sellers' cartels, succeed by suppressing output, and the targets naturally respond by trying to avoid the cartel. However, on the buy side the implementers permit all patents to be declared standard essential without significant review. On the sell side, customers can be expected to resist a cartel. For example, if apple growers are fixing prices customers might switch from apples to pears. If there were a buyers' cartel targeting SEPs, one would expect to see inventors attempting to avoid the cartel by declaring fewer of their patents to be standard essential. That way they could behave in the same way as patentees generally, either by licensing or else by suing a suspected infringer for damages or an injunction through the federal judicial system.

So if the FRAND process is primarily a mechanism for suppressing patent royalties to below market levels, why do patentees persistently declare patents to be standard essential when in fact they are not? It's a classic case of the rats swimming toward rather than away from the sinking ship.

Of course, SSO members are typically required by their membership agreements to declare patents that are reasonably thought to write on the standard.²⁴⁰ But that hardly explains the extensive overclaiming that is in fact occurring. In the great majority of cases, it appears, it is more lucrative to claim and be included in the patent pool rather than subject one's patents to ordinary judicial testing via infringement suits.

One important difference between a buyers' cartel and efficient joint purchasing is that the latter is an output-increasing rather than output-reducing strategy.²⁴¹ The FRAND process does not bear the hallmarks of a buyers' cartel. Rather, it is more consistent with the theory that generally supports FRAND in the first place. Namely, at an early stage when the future of a patent is uncertain and there are alternative technological paths to a standard, it is in a patentee's interest to have SEP status. This will produce wide adoption at competitive prices. Later, however, when development of technology under the standard has made a particular patent much more valuable, the owner of that patent would naturally prefer to be released from its FRAND obligations or else seek out a way to avoid it.

²³⁹ On the extent of overclaiming, see *supra* text accompanying note 31–34.

²⁴⁰ See *supra* text accompanying notes 17–18.

²⁴¹ See 12 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 2011 (4th ed. 2019).

Any serious evaluation of holding up versus holding out as explanatory alternatives can be made only upon considering the impact of search costs, which in the case of patented information technologies are formidable.²⁴² High search costs explain why most SSOs require participants to make timely disclosure of IP rights. If they are not voluntarily disclosed the parties would be unlikely to find them on their own. Patent “ambush” refers to situations in which SSO participants are not forthcoming about their patents or patent applications. They lie in wait until after the SSO has adopted a standard, and then announce their patent ownership. They will include a demand for very high royalties, limited by the sunk costs of the infringers.²⁴³ By contrast, the holding out thesis is directed at known technologies.²⁴⁴ The idea is that manufacturers or other implementers band together to condition their adoption of a particular patent or patents on the patent owner’s willingness to accept a lower royalty or other unfavorable terms.

In any event, patent infringement actions remain available in the event of infringement. Under the holdout theory, implementers supposedly band together and force a patentee (through the process of SEP choice) to agree to sub-market royalties in exchange for selection of its patents. The patentee, having no alternative, agrees. But a patentee who chooses not to participate has a damage action for patent infringement against implementers who use its invention without a license.²⁴⁵ Further, this would likely be an action for willful infringement, leading to the possibility of multiple damages.²⁴⁶ To be sure, in winner take all patent races losers may go un-

²⁴² See Herbert Hovenkamp, *Notice and Patent Remedies*, 88 TEX. L. REV. SEE ALSO 221, 221–26 (2011).

²⁴³ See Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. CORP. L. 1151, 1179–80 (2009). For a discussion of the *Rambus* decision, see *infra* note notes 219–203.

²⁴⁴ *E.g.*, *TruePosition, Inc. v. LM Ericsson Tel. Co.*, 899 F. Supp. 2d 356, 366 (E.D.Pa. 2012) (sustaining complaint that defendant members of SSO agree with one another to exclude plaintiff’s proffered technology).

²⁴⁵ See Cotter, Hovenkamp & Siebrasse, *supra* note 25, at 1536–38.

²⁴⁶ On this point, see Contreras, *supra* note 111, at 895 (describing hold-out as “simply willful patent infringement”); accord Melamed & Shapiro, *supra* note 44, at 2120; see also Colleen V. Chien, *Holding Up and Holding Out*, 21 MICH. TELECOMM. & TECH. L. REV. 1, 20–21 (2014) (noting that one source of holdout is implementer use of patent owned by those who lack the resources to enforce them). On multiple damages for willful infringement, see *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1928–31 (2016).

compensated, but that occurs only if implementers do not infringe their patents.²⁴⁷

Most of the antitrust case law on holdout in standard setting involves disapproval of products or processes where patent coverage is not relevant.²⁴⁸ Typically, the members decide not to use the plaintiff's product at all. For example, an SSO may refuse to approve a firm's plastic electrical conduit, hydraulic valve, or taillight.²⁴⁹ Clearly these cases can rise to the level of an antitrust violation if the concerted exclusion is found to be anticompetitive. This occurs mainly when those setting the standard are in competition with the plaintiff and stand to gain from exclusion of a superior or lower cost product.²⁵⁰

The theory of holding out may be called upon to explain a refusal by implementers to pay royalties to a particular patentee, or else to pay too low a royalty. Given the costs of patent infringement when it is found, a far more likely explanation is serious doubts about patent infringement or validity.²⁵¹ Patents in information technology markets—including standard-essential patents in networked industries involving electronics and telecommunications—are rife with these problems. In fact, patent infringement plaintiffs lose most of their cases, including those involving SEPs. Refusing to accept and pay for a license on an untested patent is not an abuse of the system. Rather, it is simply recognition of the fact there is a good chance that the patent that is being asserted is either invalid or not infringed.²⁵²

²⁴⁷ See *Golden Bridge Tech., Inc. v. Motorola, Inc.*, 547 F.3d 266, 272–73 (5th Cir. 2008) (rejecting claim of patentee whose technology was not chosen); HOVENKAMP ET AL., IP AND ANTITRUST, *supra* note 1, § 35.02D.

²⁴⁸ For a discussion of the many and great variety of cases, see 13 AREEDA & HOVENKAMP, *supra* note 1, ¶¶ 2231–32 (4th ed. 2019).

²⁴⁹ *E.g.*, *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 496 (1988) (SSO's disapproval of plaintiff's conduit); *Am. Soc'y of Mech. Eng'rs, Inc. v. Hydrolevel Corp.*, 456 U.S. 556, 560–62 (1982) (SSO's disapproval of the plaintiff's valve); see also *Moore v. Boating Indus. Ass'ns*, 819 F.2d 693, 696–99 (7th Cir. 1987) (SSO's disapproval of boat trailer taillight), *cert denied*, 484 U.S. 854 (1987).

²⁵⁰ See 13 AREEDA & HOVENKAMP, *supra* note 1, ¶ 2232; *cf. Moore*, 819 F.2d at 712–13 (holding that there was no antitrust liability where SSO of boat trailer manufacturers were purchasers of taillights, not competitors in production. As a result, they could not benefit from exclusion of a superior light).

²⁵¹ See Lemley & Simcoe, *supra* note 33, at 627–28 (observing that a high percentage of litigated SEP patents are found not to be infringed). See the discussion of the *Lenovo v. Interdigital* litigation, *supra* note 19.

²⁵² See, *e.g.*, John R. Allison et al., *Our Divided Patent System*, 82 U. CHI. L. REV. 1073, 1099–1100, 1124–26 (2015) (reporting an overall invalidation rate of 42.6% of all patents litigated to judgment); see also Lemley & Simcoe, *supra* note 33, at 627 (showing that although SEP patents are more likely to be held valid,

In any event, the holding up versus holding out debate is of limited significance to the antitrust question, although it could be relevant in clear cases, such as those involving an implementers' boycott of a known technology.²⁵³ For example, an SSO may boycott a superior technology because it competes with technology already used by the implementers in the organization. These were essentially the facts of the *Allied Tube* case, and have also been alleged in other cases.²⁵⁴ A concerted and anticompetitive refusal of a group of implementers to stay with or adopt an inferior technology, or to use the process to suppress royalties would be addressable under the antitrust laws, as it was in *Allied Tube*. The antitrust violators in that case would be the implementers rather than the SEP holders. Importantly, however, *Allied Tube* did not involve a collective refusal to license the plaintiff's patent. Rather, it involved a collective refusal not to approve the plaintiff's product at all and instead to limit the standard to an older technology (steel conduit). If the defendants had decided to use the plaintiff's technology without compensation, they would have been liable for any patent infringement that occurred.²⁵⁵

3. *Rambus and Nondisclosure*

The *Rambus* decision, which involved patent ambush by nondisclosure,²⁵⁶ declined to find antitrust liability when the only proven injury was that implementers had to pay more money.²⁵⁷ *Rambus* had failed to disclose some of its patents and patent applications to an SSO in which it was participating, and then later surprised implementers with them after they had made significant commitments. The FTC assumed that the failures violated the SSO's disclosure requirements, although it conceded that these requirements were "not a

they are less likely to be found to be infringed, indicating that they were not standard essential at all).

²⁵³ *E.g.*, *Golden Bridge Tech., Inc. v. Motorola, Inc.*, 547 F.3d 266, 272–273 (5th Cir. 2008) (dismissing antitrust complaint by patentee whose technology was not adopted by 3GPP).

²⁵⁴ *See Allied Tube*, 486 U.S. at 495–97; *see also Golden Bridge Tech.*, 547 F.3d at 269–70.

²⁵⁵ The decision never discusses patents, and there was no reason for it, given the defendants' decision not to approve or use the plaintiff's product at all. *But cf. Broadcom Corp. v. Qualcomm, Inc.*, 501 F.3d 297, 309–13 (3d Cir. 2007) (discussing *Allied Tube* in context of disclosure of IP rights in standard setting process).

²⁵⁶ On SSO disclosure requirements, see discussion *supra* text accompanying note 5.

²⁵⁷ *Rambus Inc. v. FTC*, 522 F.3d 456, 467 (D.C. Cir. 2008). For further discussion, see HOVENKAMP, ET AL., IP AND ANTITRUST, *supra* note 1, § 35.05B.

model of clarity”²⁵⁸ and did not clearly cover patent applications.²⁵⁹ Further, in one important vote the SSO did not even ask members to list their intellectual property holdings.²⁶⁰ The problem was not that Rambus had promised to license specific technology on specified terms, but rather that it withheld information about its patents, passively inducing implementers of the resulting standards to assume that the technology that they were adopting was in the public domain. Later, it surprised them by asserting infringement and demanding royalties.

The D.C. Circuit declined to find liability because the record did not establish that the implementers would have adopted a different standard had they known about Rambus’ intellectual property.²⁶¹ As a result the conduct was deceptive but it was not shown to be exclusionary under the standards required by section 2 of the Sherman Act.²⁶² It might have caused the implementers to pay more for technology that they had adopted, because now they had to pay Rambus’ royalty as well. But absent evidence that they would have adopted different technology, which was now impossible, the mere obligation to pay more did not exclude. As the court observed, “an otherwise lawful monopolist’s use of deception simply to obtain higher prices normally has no particular tendency to exclude rivals and thus to diminish competition.”²⁶³ Rather, there must be some “effect on [the market’s] competitive structure.”²⁶⁴ It contrasted *Conwood*, another section 2 case where the defendant’s deception had operated to shift market share away from plaintiff and toward the defendant.²⁶⁵ In that case, “misrepresentations to retailers about the sales strength of [the defendant’s] products versus its competitors’ strength” reduced competition in the monopolized market by increasing the dis-

²⁵⁸ *Rambus*, 522 F.3d at 461.

²⁵⁹ *Id.*

²⁶⁰ *Id.* at 469.

²⁶¹ *Id.* at 463–64.

²⁶² Subsequent to *Rambus* the FTC itself has moved to exclusive use of section 5 of the FTC Act, instead of the Sherman Act. See 15 U.S.C. § 45 (2018); Maureen K. Ohlhausen, *The Elusive Role of Competition in the Standard-Setting Antitrust Debate*, 20 STAN. TECH. L. REV. 93, 133–36 (2017). One important difference is that section 5 of the FTC Act does not permit private damages actions.

²⁶³ *Rambus*, 522 F.3d at 464.

²⁶⁴ *Id.* at 466.

²⁶⁵ *Id.* (discussing *Conwood Co. v. U.S. Tobacco Co.*, 290 F.3d 768 (6th Cir. 2002)).

play space devoted to U.S. Tobacco's products and decreasing that allotted to competing products.²⁶⁶

Rambus provides at least a partial rationale for distinguishing between a FRAND violation and an antitrust violation. More significantly, it distinguishes the types of conduct necessary to violate section 2 of the Sherman Act, in contrast to section 1. A firm's unilateral failure to disclose technology can certainly be a violation of its SSO participation agreement, provided that the commitment is stated with sufficient clarity. The remedy may be nonenforcement of the patent.²⁶⁷ It will not violate section 2 of the Sherman Act, however, unless the behavior is also exclusionary in the antitrust sense.²⁶⁸ That is, section 2 of the Sherman Act is not an appropriate vehicle for attacking conduct simply because it results in higher prices. That would be a case of extraction, but not obviously of exclusion. Even under section 2 standards, however, *Rambus* permits challenges to practices that result in actual suppression of the sales of competitors or their exclusion from a market. For example, if Alpha's failure to disclose led the SSO to adopt Alpha's technology rather than Beta's alternative technology, then the failure to disclose could also be unreasonably exclusionary.²⁶⁹

Section 1 of the Sherman Act is another matter. The standard for illegality under section 1, which applies only to multi-lateral conduct, is that it "restrains trade," which means that the conduct tends to produce lower output and higher prices.²⁷⁰ Traditional ties and exclusive dealing are agreements in restraint of trade, although they are sometimes also

²⁶⁶ *Id.* at 464.

²⁶⁷ *See, e.g.,* *Qualcomm, Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1008-10 (Fed. Cir. 2008) (refusing to enforce patent that was not properly disclosed). Subsequent to *Rambus* many SSOs strengthened and clarified their disclosure requirements. *See* HOVENKAMP ET AL., *IP AND ANTITRUST*, *supra* note 1, § 35.05; Nicos L. Tsilas, *Toward Greater Clarity and Consistency in Patent Disclosure Policies in a Post-Rambus World*, 17 HARV. J. L. & TECH. 475, 494-97 (2004).

²⁶⁸ *See* *Townshend v. Rockwell Int'l Corp.*, 2000 WL 433505, at *19 (N.D. Cal. Mar. 28, 2000) (holding that a simple nondisclosure does not violate antitrust laws).

²⁶⁹ *See, e.g.,* *WI-LAN, Inc. v. LG Elec., Inc.*, 382 F.Supp.3d 1012, 1019-24 (S.D. Cal. 2019) (distinguishing *Rambus* when plaintiff alleged that an alternative standard existed that would have been adopted but for the defendant's deception); *Actividentity Corp. v. Intercede Grp. PLC*, 2009 WL 8674284, at *3-5 (N.D. Cal. Sept. 11, 2009) (distinguishing *Rambus* and finding a basis for antitrust violation when the failure to disclose did lead to market exclusion).

²⁷⁰ 15 U.S.C. § 1 (2018).

treated as acts of monopolization when the structural requirements are met.²⁷¹

The ultimate concern of antitrust law is with conduct that reduces output and increases price. Section 2 of the Sherman Act takes a conservative approach to unilateral conduct because of its concern to avoid regulating unilaterally set prices in the guise of antitrust enforcement. Collaborative practices are generally not entitled to the same deference. For example, price-fixing is unlawful even if the agreement does not exclude anyone. Even under section 1, however, the tendency in tying and exclusive dealing cases is to look for evidence that the higher prices were accompanied by effects that either foreclosed a significant rival or else raised its costs.²⁷²

4. *Entitlement to an Injunction*

Aside from FRAND, patentees may have a statutory right to obtain an injunction against proven infringers. Section 283 of the Patent Act creates a right to an injunction against patent infringement “in accordance with the principles of equity.”²⁷³ However, The FRAND commitment requires the patent owner to license its patent, typically to all qualified producers employing the standard in question. This does not necessarily mean that the owner of such a patent can never obtain an injunction. For example, if a FRAND royalty has been independently determined and a recalcitrant infringer refuses to pay, an injunction may be in order. That is largely consistent with the government agencies’ 2019 *Policy Statement* on injunctions on FRAND patents.²⁷⁴

One important omission in the Government’s *Policy Statement* is its failure to address the important question of when a *patentee’s* conduct might affect its entitlement to an injunction. That question is also governed by equitable principles. The right to an injunction includes the age-old requirement

²⁷¹ On the use of section 2 to reach tying and exclusive dealing by monopolist, see HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* § 7.6 (6th ed. 2020).

²⁷² See, generally 9 AREEDA & HOVENKAMP, *supra* note 45, ¶ 1729 (tying under rule of reason). However, under United States antitrust law tying can still be condemned under an idiosyncratic per se rule that does not require proof of foreclosure. See *id.* ¶ 1720; and Erik Hovenkamp & Timothy Simcoe, *Tying and Exclusion in FRAND Licensing: Evaluating Qualcomm*, ANTITRUST SOURCE (2020) (forthcoming) On exclusive dealing, see generally 11 AREEDA & HOVENKAMP, *supra* note 81, ¶ 1821 (noting relevance of foreclosure of competitors).

²⁷³ 35 U.S.C. § 283 (2018); see also *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392 (2006).

²⁷⁴ See *Policy Statement*, *supra* note 2.

that “he who seeks equity must do equity.”²⁷⁵ As the Supreme Court has put it, “such rights shall not be enforced in favor of one who affirmatively seeks their enforcement except upon condition that he consent to accord to the other his correlative equitable rights.”²⁷⁶

In the FRAND context, the patentee’s conduct becomes relevant when the patentee has “unclean hands” because it is not adhering to the FRAND obligations or is committing other violations itself. For example, to the extent a firm is reneging on its FRAND obligation by refusing to license, insisting on a product tie, a loyalty provision, or some other condition that is in violation of its FRAND obligation,²⁷⁷ it loses its right to obtain an injunction, at least on those particular patents. That limitation ordinarily exists until such time as the plaintiff seeking an injunction has “purged” its own violation. For example, in its decision in *Precision Instrument Mfg. Co. v. Automotive Maintenance Machinery Co.*, the Supreme Court held that a patentee could not obtain an injunction in an infringement action if its own conduct was tainted “relative to the matter in which he seeks relief, however improper may have been the behavior of the defendant.”²⁷⁸

The FRAND commitment, which does not state a specific royalty, is subject to a good faith negotiation requirement with respect to the royalty’s size. Reasonable minds can differ about how royalties are to be calculated, and some disputes have had to be resolved by neutral tribunals, including courts. By contrast, the requirement that FRAND-encumbered patents be licensed to all qualified implementers of the standard without further condition is not something that is subject to further bargaining. If a firm has made a FRAND commitment and then refuses to license to competitors in a hardware market, or if it licenses only to those who also agree to purchase its chips or other hardware, or insists on exclusive agreements or loyalty (market share) commitments, then its unclean hands deny it a right to an injunction.²⁷⁹

²⁷⁵ *E.g.*, *Manufacturers’ Finance Co. v. McKey*, 294 U.S. 442, 449 (1935); *Crosby v. Buchanan*, 90 U.S. 420, 447–51 (1874).

²⁷⁶ *Id.*

²⁷⁷ See *supra* text accompanying note 22.

²⁷⁸ *Precision Instrument Mfg. Co. v. Automotive Maintenance Mach. Co.* 324 U.S. 806, 814 (1945).

²⁷⁹ See, *e.g.*, *HTC Corp. v. Telefonaktiebolaget LM Ericsson*, 2019 WL 4734950, at *10 (E.D. Tex. May 22, 2019) (holding that firm that breached its FRAND obligations by refusing to offer fair, reasonable, and non-discriminatory terms had unclean hands, and thus could not enforce its FRAND-encumbered patents against an implementer); see also *Alcatel USA, Inc. v. DGI Techs., Inc.*,

Denying an injunction in such situations is essential to making the FRAND system work. Otherwise every dispute could either end up delaying product development or production, or else it could force developers for whom time was critical to pay excessive royalties. A firm that plans to practice a FRAND-encumbered patent in a way that is contemplated by the FRAND agreement should be entitled to proceed subject only to an ex post damages rule.²⁸⁰ The patentee should then be entitled to FRAND damages. These rules exist quite aside from any question of antitrust liability. They are entirely a function of the relationship between the FRAND commitment and entitlement to an injunction.

Historically the doctrine of unclean hands, which gave rise to the much more expansive theory of patent “misuse,” applied only when the patentee’s misconduct related to the same patent, party, or conduct as the infringement suit. As the Supreme Court put it in 1933, courts

apply the maxim requiring clean hands only where some unconscionable act of one coming for relief has immediate and necessary relation to the equity that he seeks in respect of the matter in litigation. They do not close their doors because of plaintiff’s misconduct, whatever its character, that has no relation to anything involved in the suit.²⁸¹

Subsequently, the Supreme Court considerably broadened the doctrine. In *Morton Salt Co. v. G.S. Suppiger Co.*,²⁸² the patentee of a salt-injecting machine was tying salt to its machine, which constituted misuse and was very likely a violation of the antitrust laws as then interpreted as well.²⁸³ The Su-

166 F.3d 772, 794 (5th Cir. 1999) (“It is old hat that a court called upon to do equity should always consider whether the petitioning party has acted . . . with unclean hands.” (quoting *Texaco Puerto Rico, Inc. v. Dep’t of Consumer Affairs*, 60 F.3d 867, 880 (1st Cir. 1995)); *Evolved Wireless, LLC v. Apple, Inc.*, 2019 WL 831112 (D. Del. Feb. 21, 2019) (denying summary on claim that patentee’s patents were unenforceable in equity because it was in violation of its FRAND obligations); *Saint Lawrence Comm’n., LLC v. Motorola Mobility, LLC*, 2018 WL 915125, at *6 (E.D. Tex. Feb. 15, 2018).

²⁸⁰ *Cf., e.g.*, *Broadcast Music, Inc. v. Moor-Law, Inc.*, 527 F.Supp. 758, 760 (D. Del. 1981) (noting that the BMI copyright blanket license provision given to broadcasters, which offers “immediate, indemnified” access to “any and all songs” subject to the agreement).

²⁸¹ *Keystone Driller Co. v. Gen. Excavator*, 290 U.S. 240, 245 (1933). The Court then found the connection between the infringement suit and the patentee’s conduct to be sufficiently close to warrant application of unclean hands. *Id.* at 247.

²⁸² 314 U.S. 488 (1942).

²⁸³ See *Int’l Salt Co. v. United States*, 332 U.S. 392, (1947) (upholding finding of an antitrust violation on the same facts).

preme Court held that the tying amounted to patent misuse, which rendered the patent unenforceable against a rival producer of infringing salt machines who was in no way injured by the tie.²⁸⁴

Today, most courts have returned to the more restrictive position, rejecting the unclean hands doctrine if the claim of patentee misconduct rested on actions that were unrelated to the patents or parties in the underlying infringement action.²⁸⁵ Nevertheless, the unclean hands doctrine continues to serve an important role when the patentee has committed misconduct with respect to the same patents or parties as those involved in the lawsuit. For example, in *Qualcomm, Inc. v. Broadcom Corp.*,²⁸⁶ the court denied a patentee relief when it improperly failed to disclose patents deemed to be standard essential in violation of the SSO's disclosure requirements, and then later attempted to assert them against an implementing manufacturer. The court held that equitable estoppel prevented the patentee from subsequently asserting the patents when its own prior acts and statements denied that they were essential.²⁸⁷ It likened the situation to post-issuance patent misuse.²⁸⁸

Under this narrower view of unclean hands, an injunction would be denied to someone who was in violation of a FRAND commitment on the same patent or with respect to the same infringer that it was seeking to enforce. The same thing would apply if it were committing an antitrust violation with respect to those particular patents or infringement defendants.²⁸⁹ In its

²⁸⁴ See 10 AREEDA & HOVENKAMP, *supra* note 70, ¶ 1781c.

²⁸⁵ *E.g.*, Saint Lawrence Commc'n, LLC v. Motorola Mobility, LLC, 2018 WL 915125, at *9–10 (E.D. Tex. Feb. 15, 2018) (seeking injunction on a FRAND-encumbered patent in Germany was not misuse; nor was tying in the absence of a showing of market power).

²⁸⁶ 548 F.3d 1004 (Fed. Cir. 2008).

²⁸⁷ See *id.* at 1022–23.

²⁸⁸ See *id.* at 1025. The court added:

In addition to the analogy to inequitable conduct, we find the remedy of unenforceability based on post-issuance patent misuse instructive in this case. As Qualcomm notes, the successful assertion of patent misuse may render a patent unenforceable until the misconduct can be purged; it does not render the patent unenforceable for all time.

Id.

²⁸⁹ Another limitation on the “unclean hands” doctrine is that, because it is a creature of equity, it limits the right to an injunction but not the right to damages. See *In re Innovatio IP Ventures, LLC Patent Litig.*, 921 F. Supp. 2d 903, 916 (N.D. Ill. 2013) (“The parties have not cited, however, and the court has not found, any cases suggesting that the existence of a [F]RAND commitment provides a *complete* defense against an infringement lawsuit. Instead, most cases merely limit a patent holder’s remedy to collecting a [F]RAND royalty. . . .”) (alteration in original).

Qualcomm decision the Ninth Circuit decided that there was no antitrust violation did not consider the question whether *Qualcomm* was in violation of its FRAND commitments.²⁹⁰

By contrast, a patentee who has honored all of its FRAND commitments and is willing to give an unrestricted license to any implementer of the standard should be permitted to obtain an injunction against a firm that refuses to honor a FRAND commitment, in particular by refusing to pay a reasonable royalty after that royalty has been determined.²⁹¹

Aside from refusal to issue an injunction, should the owner of FRAND encumbered patents be accountable under the antitrust laws for other alleged abuses of the litigation processes? As a general proposition, seeking injunctive relief from a court—something that the Patent Act expressly contemplates²⁹²—is not an antitrust violation. Nevertheless, there are important limitations. If someone files a suit that no reasonable litigant would have brought with the expectation of success, then antitrust liability can attach. In such cases, the litigation plaintiff's expectation of success comes not from winning the lawsuit, but rather from depleting the defendant's assets, delaying its market entry, or otherwise injuring it in ways unrelated to the outcome of the litigation.

The grandparent of these cases is *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*²⁹³ The patentee had a patent that it knew to be unenforceable under the statutory on sale bar,²⁹⁴ but it attempted to exclude a competitor from the market anyway via a patent infringement suit. The *Walker Process* case applied the so-called “sham” litigation exception that holds that the filing of a lawsuit loses its First Amendment protected status if the lawsuit is a “sham,” which means that it was filed without a realistic prospect of success from the litiga-

²⁹⁰ *Qualcomm, Inc. v. FTC*, 969 F.3d 974, 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

²⁹¹ See, e.g., *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1331–1332 (Fed. Cir. 2014), overruled on other grounds, *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) (stating that irreparable harm, and thus entitlement to an injunction, may be established “where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect”); see also *Huawei Techs., Co. v. Samsung Elecs., Co.*, 2018 WL 1784065, at *1–4 (N.D. Cal. Apr. 13, 2018) (same) (quoting *Apple Inc.*, 757 F.3d at 1332)).

²⁹² 35 U.S.C. § 283 (2018).

²⁹³ 382 U.S. 172 (1965).

²⁹⁴ The on sale bar makes a patent unenforceable if it was in public use of on sale more than one year prior to the filing date. 35 U.S.C. § 102(a) & (b).

tion itself, but rather to intimidate, harass, or deplete the resources of the litigation defendant.²⁹⁵

One important precondition to *Walker Process* liability is that existing law be sufficiently “settled” that a lawsuit filed in conflict with it should be regarded as “objectively meritless.”²⁹⁶ That is, a reasonable person in the plaintiff’s position should have known that the lawsuit would not succeed. For example, if there is a conflict in the Federal Courts of Appeal respecting a particular issue, a plaintiff should be entitled to convince the court to apply one interpretation rather than the other one.²⁹⁷ Issues of first impression or those that could reasonably come out either way can of course be the subject of litigation.

There is no obvious reason that the sham litigation rule should not apply in the FRAND context, but under these same constraints. Once it has become a matter of settled law that a SEP owner is not entitled to an injunction under a given set of circumstances—that is, that a knowledgeable person would realize that there was no genuine prospect of relief—then further lawsuits seeking an injunction under those circumstances may give rise to antitrust liability.²⁹⁸ If the lawsuit is plainly in violation of an enforceable contract obligation, *Walker Process* liability should be appropriate. On the other hand, if the issue remains open to legal doubt, then filing a lawsuit is appropriate, even if the suit is ultimately unsuccessful.

One important consideration is that sham litigation establishes only the conduct element of an antitrust offense. In order to establish an antitrust violation, the challenger must still make out the other elements of an antitrust cause of action—namely, power and unreasonable exclusion for section 2 cases, or a restraint of trade for section 1 cases.²⁹⁹

²⁹⁵ On antitrust liability for “sham” litigation, see generally 1 AREEDA & HOVENKAMP, *supra* note 70, ¶¶ 201–08.

²⁹⁶ See, e.g., *Profl Real Estate Inv’rs, Inc. v. Columbia Pictures, Indus., Inc.*, 508 U.S. 49, 60 (1993).

²⁹⁷ See *id.* at 65 (noting a circuit split on the question of whether charging money to show a movie in a hotel room was a “performance,” and thus copyright infringement and stating that as a result, “Any reasonable copyright owner in Columbia’s position could have believed that it had some chance of winning an infringement suit . . .”).

²⁹⁸ See *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1048 (9th Cir. 2015) (approving jury conclusion that for a firm to seek injunctive relief on a FRAND-encumbered patent under the circumstances of that case did not enjoy antitrust immunity); *Apple Corp. v. Motorola, Inc.*, 2012 WL 2276664, at *12 (N.D. Ill. June 22, 2012) (similarly approving the jury conclusion).

²⁹⁹ See 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 706a3 (4th ed. 2013).

For example, once the FRAND obligation for a patent or set of patents has been established to require licensing to all implementers operating on the standard, a firm that files infringement lawsuits seeking injunctions against firms simply because they are product market competitors should generate the conduct basis for antitrust liability. Although market damages for exclusion or delay could be significant, the case law also permits damages to be based on improperly incurred legal costs.³⁰⁰ While this road to antitrust liability might seem narrow, it becomes broader as litigation clarifies issues so that they can be regarded as settled.

CONCLUSION

Oversight of FRAND obligations is one area where it is critical for the courts to keep an eye on longer run concerns for innovation. FRAND has evolved into a highly successful but nevertheless vulnerable mechanism for facilitating joint innovation and product development. Indeed, for networked technologies such as cellular phones it is difficult to see how coordinated development by numerous competitive firms could be achieved without the significant coordination and technology sharing that FRAND enables. That system will be undermined, however, if one firm is able to renege on its voluntarily entered obligations, because others will then do the same. The regime of collaborative innovation that FRAND contemplates would very likely fall apart, and at great harm to competition and economic welfare. The Ninth Circuit's 2020 *Qualcomm* decision indicates that this fear is more than fanciful. Unless corrected, Congress may have to intervene in order to protect a system that has been an important driver of innovation and economic growth.

Among the various legal tools for policing the FRAND process antitrust is only one, but it is an important one and has its own unique requirements and tools for analysis. As a result, the existence of FRAND obligations is hardly irrelevant to antitrust claims. Antitrust law takes markets as it finds them. For example, in the numerous antitrust decisions involving the

³⁰⁰ See, e.g., *TransWeb, LLC v. 3M Innovative Props. Co.*, 812 F.3d 1295, 1309–12 (Fed. Cir. 2016) (permitting award of litigation costs for improper patent infringement lawsuit); *Premier Elec. Constr. Co. v. Nat'l Elec. Contractors Ass'n, Inc.*, 814 F.2d 358, 373–74 (7th Cir. 1987) (similar); *Assessment Techs. of Wis., LLC, v. WireData, Inc.*, 361 F.3d 434, 438–39 (7th Cir. 2004) (same in the context of an improper copyright infringement lawsuit).

NCAA,³⁰¹ a very large joint venture, the antitrust courts do not pretend that the joint venture does not exist. Rather, they assume that the venture itself performs a socially valuable function. Then they begin with its rules and the investments and commitments that its structure creates and considers how antitrust can be used to make the market function competitively on those assumptions.

FRAND is no different. While it has its flaws, the standard setting process and the use of standard essential patents is well settled and has produced significant benefits within a competitive environment. In that case the best use of antitrust law is to police the competitive process within that system.

³⁰¹ See Richard E. Kaye, Annotation, Application of Federal Antitrust Laws to Collegiate Sports, 87 A.L.R. Fed. 2d 43 (2014) (showing a comprehensive list of antitrust cases against the NCAA that is updated weekly).