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Book Reviews

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Article

The Surprising Resilience of the Patent System*

Mark A. Lemley**

The patent system seems in the midst of truly dramatic change. The last twenty years have seen the rise of a new business model—the patent troll—that grew to become a majority of all patent lawsuits. They have seen a significant expansion in the number of patents granted and a fundamental change in the industries in which those patents are filed. They have seen the passage of the most important legislative reform in the last sixty years, a law that reoriented legal challenges to patents away from courts and toward the Patent and Trademark Office (PTO). And they have seen remarkable changes in nearly every important legal doctrine, from patent eligibility to obviousness to infringement to remedies.

These changes have prompted alarm in a number of quarters. From the 1990s to the 2000s, as the number of patents and patent-troll suits skyrocketed, technology companies and academics worried about the 'crisis' in the patent system—a crisis of overprotection that might interfere with, rather than promote, innovation.[1] By 2015, as patent reform took effect and

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1. *See, e.g.*, JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, LAWYERS, AND BUREAUCRATS PUT INNOVATION AT RISK 2–5 (2008); DAN L. BURK & MARK A. LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT 3–5 (2009) (arguing that some IP experts and commentators believe that the patent system has "broken down, threatening innovation and that courts should use patent law and the patent system differently in cases involving different industries); ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 16–18 (2004) (arguing that current patent institutions create a substantial "innovation tax," threatening American innovation and prosperity); Letter from the Internet Association to John Boehner, Speaker, House of Representatives, Steny Hoyer, Minority Leader, House of Representatives, Kevin McCarthy, Majority Leader, House of Representatives, Nancy Pelosi, Minority Leader, House of Representatives & Steve Scalise, Majority Whip, House of Representatives (July 16, 2015), http://internetassociation.org/wp-content/uploads/2015/07/Letter_from_Internet_CEOs_InnovationAct.pdf [https://perma.cc/77SE-2TY6] (lamenting the

the Supreme Court undid many of the Federal Circuit's expansions of patent rights, it was patent owners who were speaking of a crisis in the patent system—a crisis of underprotection that might leave innovators without adequate protection.[2] Depending on one's perspective, then, the sky seems to have been falling on the patent system for some time.

Despite the undeniable significance of these changes in both directions, something curious has happened to the fundamental characteristics of the patent ecosystem during this period: very little. Whether we look at the number of patent applications filed, the number of patents issued, the number of lawsuits filed, the patentee win rate in those lawsuits, or the market for patent licenses, the data show very little evidence that patent owners and challengers are behaving differently because of changes in the law. The patent system, in other words, seems surprisingly resilient to changes in the law. This is a puzzle. In this Article, I document this phenomenon and give some thought to why the fundamental characteristics of the patent system seem resistant to even major changes in patent law and procedure. The results pose some profound questions not only for efforts at patent reform but for the role of the patent system in society as a whole.

In Part I, I briefly review the changes to the patent system in the past thirty-five years. In Part II, I discuss the pendulum swings between perceived overprotection and perceived underprotection and the concerns lawyers have raised in both directions. In Part III, I present evidence of the resilience of the patent system. Finally, in Part IV, I offer some possible explanations for this surprising result.

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negative effects of patent trolls brought about by the current patent system and advocating patent reform).

2. *See, e.g.*, John R. Harris, *The Patent System Is Under Assault—Startups, Should You Care? Ten Things About Patents That Startups Need to Consider*, 44 AIPLA Q.J. 27, 28–29 (2016) (characterizing the patent system as "under extreme assault" and claiming it is harder to obtain patents following the America Invents Act and recent Supreme Court decisions); Adam Mossoff, *The Trespass Fallacy in Patent Law*, 65 FLA. L. REV. 1687, 1690–96 (2013) (observing the rise of proposals for reducing the indeterminacy of patent rights but ultimately criticizing such reforms); Maureen K. Ohlhausen, *Patent Rights in a Climate of IPR Skepticism*, 30 HARV. J.L. & TECH. (forthcoming 2016) (manuscript at 1–5) (on file with author) (arguing against perceived efforts to weaken patents); David Kappos, *An Open Letter to Abraham Lincoln From David Kappos*, MANAGING INTELL. PROP. (Apr. 25, 2014), http://www.managingip.com/Blog/3334558/Guest-post-An-open-letter-to-Abraham-Lincoln-from-David-Kappos.html [https://perma.cc/3EY8-FB5K] (warning that patent protections are under attack and defending a system of robust IP rights as a means of encouraging innovation); Gene Quinn, *Fixing the Patent System Requires a Return to Strong Patent Rights*, IP WATCHDOG (Sept. 15, 2015), http://www.ipwatchdog.com/2015/09/15/fxing-the-patent-system-requires-a-return-to-strong-patent-rights/id=61684 [https://perma.cc/Z7HS-J8FE] (claiming that patent rights have 'eroded' as a result of patent reform, threatening future innovation).

I. A Tumultuous Four Decades

In many respects it is hard to overstate how much the patent system has changed in the past few decades. In 1984, the PTO issued 67,200 utility patents.[3] In 2014, the PTO issued 300,678, nearly five times as many.[4] The patents issued in the 1970s were overwhelmingly for mechanical inventions.[5] By the 1990s, computer-related inventions had grown and mechanical inventions had declined, but mechanical inventions were still a plurality of all patents issued.[6] By the 2000s, half of all patents were granted in the IT industries, and mechanical patents had receded to a much smaller share.[7]

Patent litigation has changed as well. In 1980, there were approximately 800 patent lawsuits filed.[8] By 2010 there were 2,770 suits, roughly a 350% increase.[9] The number of suits is even higher today, reaching a peak of 6,128 suits in 2013,[10] but a 2011 change in the way suits are filed makes it difficult to compare data from before 2011 to more recent data.[11]

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3. *U.S. Patent Activity Calendar Years 1780 to the Present*, U.S. PATENT & TRADEMARK OFFICE, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.htm [https://perma.cc/QU4L-NCB6].

4. *Id.*

5. John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77, 93, 93 & tbl.1 (2002).

6. *Id.*

7. Mark A. Lemley & Bhaven Sampat, *Is the Patent Office a Rubber Stamp?*. 58 EMORY L.J. 181, 195 (2008).

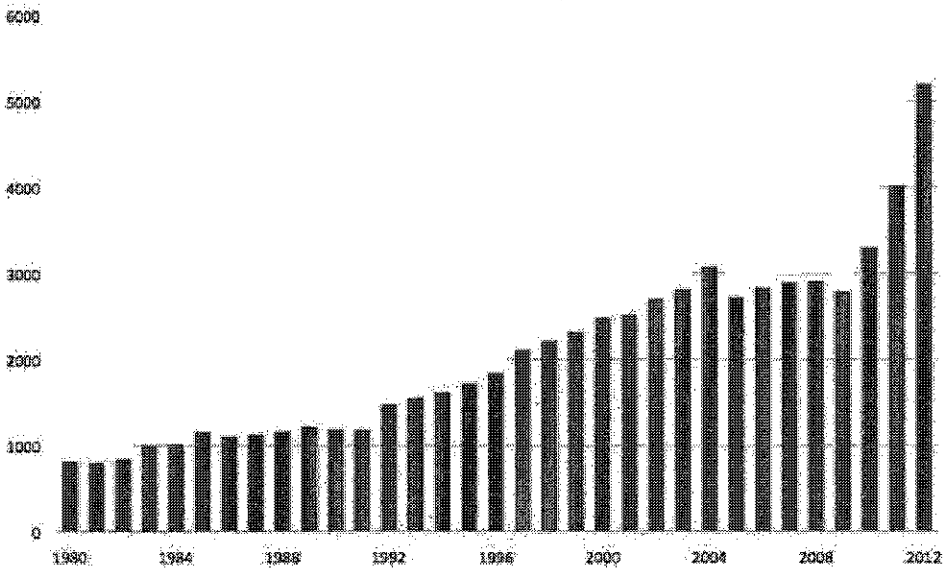
8. *See infra* Figure 1.

9. I used proprietary data from Lex Machina. Lex Machina, https://law.lexmachina.com/. Table 1, created by IP Watchdog, includes some duplicate cases (such as a patent-infringement lawsuit and a declaratory-judgment action filed by opposing parties on the same patent in different districts) that Lex Machina has cleaned in its data. Because Lex Machina data only goes back to 2000, I have used IP Watchdog data for 1980. It is worth noting that it too likely modestly overstates the number of patent lawsuits.

10. *Id.*

11. The America Invents Act (AIA), adopted in 2011, made it difficult to join multiple defendants in one lawsuit. 35 U.S.C. § 299(b) (2012); Leahy–Smith America Invents Act, Pub. L. No. 112-29, § 1(a), 125 Stat. 284, 284 (2011). As such, "in 2010, while you could sue three defendants in one patent lawsuit in some venues, after the passage of the AIA, you may have to sue each defendant separately, resulting in three patent lawsuits." Christopher A. Cotropia et al., *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649, 662 (2014).

Figure 1[12]



The last quarter century also saw dramatic changes in who filed those suits and where. In 1990, there was a single active litigant who could be described as a patent troll—Jerome Lemelson.[13] The model gained in popularity during the 1990s and 2000s.[14] By the 2010s, depending on how one defines a patent troll, a majority of all patent lawsuits were filed by patent trolls or other plaintiffs that do not make products.[15]

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12. Gene Quinn, *The Rise of Patent Litigation in America: 1980–2012*, IP WATCHDOG (Apr. 9, 2013), http://www.ipwatchdog.com/2013/04/09/the-rise-of-patent-litigation-in-america-1980-2012/id=38910/ [https://perma.cc/QKU4-EMMM].

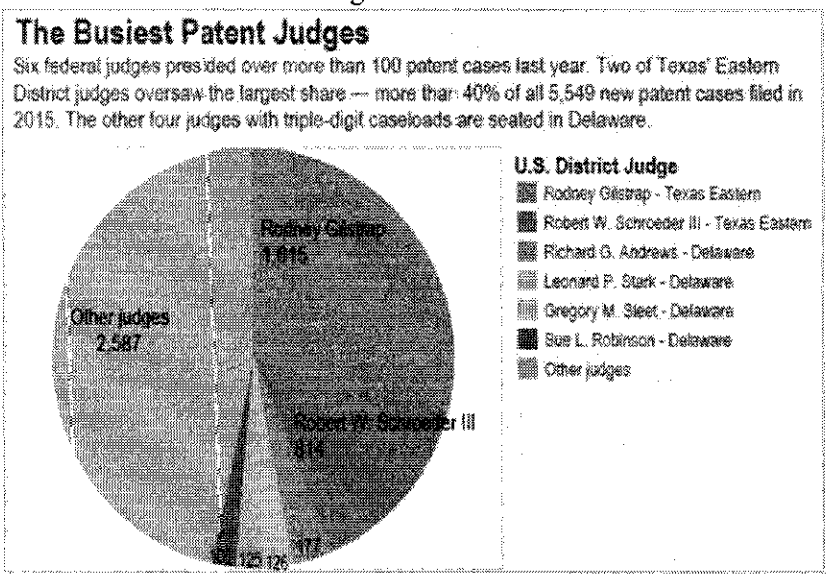
13. *See* Adam Goldman, *A Great Inventor, or a Big Fraud*, L.A. TIMES (Aug. 21, 2005), http://articles.latimes.com/2005/aug/21/news/adna-patent21 [https://perma.cc/KHY4-KBYL] (describing criticism characterizing Lemelson as a "fraud" and his patents as "worthless"). *But see* Adam Mossoff, *Patent Thickets and Patent Trolls*, VOLOKH CONSPIRACY (May 5, 2009, 4:55 PM), http://volokh.com/posts/1241494164.shtml [https://perma.cc/5ZXQ-WRLC] (claiming that Lemelson was not a patent troll, but was using submarine patents—"patents that were kept secret and then surfaced to sink established companies with the threat of litigation"). For discussion of Lemelson's role in the rise of patent trolls, see Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 76–77 (2004).

14. *See* Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?*, 161 U. PA. L. REV. 1309, 1355–56 (2013) (finding that patent trolls became prominent in the late 1990s and 2000s).

15. *See* Cotropia et al., *supra* note 11, at 655 (finding that Patent Assertion Entities (PAEs) are responsible for a majority of suits in 2012); Robin Feldman et al., *The AIA 500 Expanded: The Effects of Patent Monetization Entities*, UCLA J.L. & TECH. Fall 2013, at 1, 42, http://www.lawtechjournal.com/articles/2013/041024-Feldman.pdf [http://perma.cc/9RET-3ERZ]

The rise of forum shopping has concentrated patent suits in just a few districts viewed as plaintiff friendly.[16] The majority of suits in 2015 were filed in just two districts—the Eastern District of Texas and the District of Delaware.[17] Indeed, just two judges out of the 650 federal district judges nationwide hear almost half of the nation's patent cases.[18]

Figure 2[19]



By contrast, those same districts in 2000 accounted for only 273 of 2,523 suits, just over 10%.[20]

More recently, the passage of the America Invents Act (AIA)[21] has led to an explosion of "*inter partes* review" (IPR) proceedings in which parties

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(finding that monetizing entities, individuals, and trusts filed 2,956 of the 5,038 patent infringement lawsuits filed in 2012); Colleen Chien, Associate Professor of Law, Santa Clara University, Presentation to Federal Trade Commission & Department of Justice Patent Assertion Entity Activities Workshop (Dec. 10, 2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2187314 [https://perma.cc/A6RZ-N7UT] (finding that trolls filed 61% of suits).

16. *See, e.g.*, Daniel Klerman & Greg Reilly, *Forum Selling*, 89 S. CAL. L. REV. 241, 249–50 (documenting the efforts of the Eastern District of Texas to attract patent suits).

17. LEX MACHINA, *supra* note 9 (finding that 3,086 of 5,821 suits filed in 2015 were filed in the Eastern District of Texas or the District of Delaware).

18. *See infra* Figure 2.

19. Ryan Davis, *Patent Suit Flood Pressuring East Texas Bench, Chief Says*, LAW360 (Feb. 9, 2016, 5:21 PM), http://www.law360.com/ip/articles/757022?nl_pk=3fa8c13f-2809-474e-b3e5-23795e52e060&utm_source=newsletter&utm_medium=email&utm_campaign=ip [https://perma.cc/QWM8-D3SS]

20. LEX MACHINA, *supra* note 9.

21. Leahy–Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified in scattered sections of 28 U.S.C. and 35 U.S.C.).

challenge the validity of a patent at the PTO.[22] There have been over 4,000 IPRs instituted since the procedure was created in 2011.[23] IPR challenges aren't replacing patent litigation in district court, but they often lead to stays of district court litigation while the validity of the patent is being considered and frequently end up resolving the suit.[24]

The process of patent litigation also looks very different than it did in the past. The past forty years have seen the rise of the jury trial from less than 10% of all patent cases in the 1970s to over 70% of patent cases today.[25] That, in turn, has changed the pretrial procedures in all cases, prompting pretrial motions to dismiss and for summary judgment.[26] The 1990s saw the institution of a pretrial proceeding—the *Markman*[27] hearing—to construe the claims of the patent.[28] It is fair to say that the basic focus of almost every patent case today is driven by these two procedural changes. Patent litigation is usually aimed either at the *Markman* hearing or at the question of whether the plaintiff will get to trial.[29]

The overall effect of these changes has been that the patent law in 2016, both substantively and procedurally, would in many respects be unrecognizable to a patent lawyer from the 1970s. The patents look different, the scale of the system looks different, and the litigation process looks different. As we will see in the next Part, the substantive law looks different too.

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22. Brian J. Love & Shawn Ambwani, Inter Partes *Review: An Early Look at the Numbers*, 81 U. CHI. L. REV. DIALOGUE 93, 94–97 (2014).

23. LEX MACHINA, *supra* note 9 (documenting over 5,000 instituted IPR proceedings as of September 13, 2016). Many more IPR proceedings are filed but not instituted by the Board.

24. *See* Love & Ambwani, *supra* note 22, at 103–04 (indicating that motions to stay were filed in 76% of parallel cases and that these motions were approved 82% of the time).

25. Mark A. Lemley, *Why Do Juries Decide If Patents Are Valid?*, 99 VA. L. REV. 1673, 1705–06 (2013); *see also* HERBERT F. SCHWARTZ, PATENT LAW AND PRACTICE 130 (2d ed. 1995) (tabulating data from 1975 to 1994).

26. Jay P. Kesan & Gwendolyn G. Ball, *How Are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 WASH. U. L. REV. 237, 246 (2006) ("Successful final rulings of summary judgment are in fact more important than bench or jury trials in resolving patent cases.").

27. Markman v. Westview Instruments, 517 U.S. 370, 370 (1990).

28. *Id.*; *see* David L. Schwartz, *Pre-*Markman *Reversal Rates*, 43 LOY. L.A. L. REV. 1073, 1075 (2010) (explaining that the *Markman* hearing arose after the Supreme Court's decision in *Markman v. Westview Instruments*, which established that it was a judge's, rather than a jury's, duty to construe claims in patent suits).

29. Kesan & Ball, *supra* note 26, at 246; Schwartz, *supra* note 28, at 1078–79 (explaining that claim construction is "a necessary first step in the patent infringement analysis").

II. Sounding the Alarm

A. The 'Patent Crisis' and How the Courts Solved It

After the Federal Circuit was created in 1982 with a mission to strengthen patent rights, it did just that in the 1980s and 1990s, holding software and business methods eligible for patenting,[30] changing the law of obviousness to uphold more patents,[31] curtailing claims of inequitable conduct and patent misuse,[32] expanding damages,[33] making it easier to show that the defendant was a willful infringer,[34] and making it easier to get an

30. *See, e.g.*, State St. Bank & Tr. Co. v. Signature Fin. Grp., 149 F.3d 1368, 1377 (Fed. Cir. 1998) (business methods); *In re* Alappat, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc) (software).

31. *See* Christopher A. Cotropia, *Nonobviousness and the Federal Circuit: An Empirical Analysis of Recent Case Law*, 82 NOTRE DAME L. REV. 911, 913 (2007) [hereinafter Cotropia, *Nonobviousness*] (claiming that the Federal Circuit had inappropriately relaxed its obviousness standard, making it easier to obtain and enforce an invalid patent); Christopher A. Cotropia, *Patent Law Viewed Through an Evidentiary Lens: The "Suggestion Test" as a Rule of Evidence*, 2006 BYU L. REV. 1517, 1531–32 (describing how the Federal Circuit's narrow use of the suggestion test and less rigorous obviousness test resulted in more obvious patents being issued); Lee Petherbridge & R. Polk Wagner, *The Federal Circuit and Patentability: An Empirical Assessment of the Law of Obviousness*, 85 TEXAS L. REV. 2051, 2054–55 (2007) (observing a "common thread' of criticism that the Federal Circuit's obviousness decisions before *KSR*, KSR Int'l Co. v. Teleflex Inc. 550 U.S. 398 (2007), were biased in favor of patentability).

32. *See, e.g.*, Mallinckrodt, Inc. v. Medipart, Inc., 976 F.2d 700, 701 (Fed. Cir. 1992) (holding that a "single use only" notice does not "*per se* violate the doctrine of patent misuse"); Kingsdown Med. Consultants v. Hollister Inc. 863 F.2d 867, 874–76 (Fed. Cir. 1988) (holding that a finding of gross negligence is not, by itself, sufficient to justify an inference of intent to deceive, an element of the inequitable conduct defense).

33. *See, e.g.*, King Instruments v. Perego, 65 F.3d 941, 953 (Fed. Cir. 1995) (affirming an award of damages for lost profits in a patent infringement case); Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1570 (Fed. Cir. 1995) (en banc) (expanding the scope of patent damages). For a discussion of the problems with this expansion, see, for example, Daralyn J. Durie & Mark A. Lemley, *A Structured Approach to Calculating Reasonable Royalties*, 14 LEWIS & CLARK L. REV. 627, 628–29 (2010) (criticizing the *Georgia Pacific* damages test, which has resulted in enormous damage awards—sometimes ranging into the billions of dollars); Brian J. Love, *Patentee Overcompensation and the Entire Market Value Rule*, Note, 60 STAN. L. REV. 263, 264–65 (2007) (discussing the expansion in patent infringement damages resulting from U.S. patent law's adoption of the entire market value rule, which "allows for recovery of patent infringement damages based on the value of an entire product or device containing an infringing component, rather than on the value of the infringing component alone, provided that the entire value of the device is legally attributable to the patented invention"); Brian J. Love, *The Misuse of Reasonable Royalty Damages as a Patent Infringement Deterrent*, 74 MO. L. REV. 909, 910–11 (2009) (arguing that the Federal Circuit "is more than willing to award inflated reasonable royalties to ensure that patentees receive what the court deems an appropriate level of recovery").

34. *See, e.g.*, Underwater Devices v. Morrison–Knudsen Co. 717 F.2d 1380, 1389–90 (Fed. Cir. 1983) (finding that a potential infringer has a duty of care once the infringer has been put on actual notice of another's patent rights and that this duty includes the duty "to seek and obtain competent legal advice" prior to the initiation of any potential infringing activity).

injunction.[35] It raised the validity rate of patents in appellate decisions from 35% to 55%.[36]

The dramatic expansion in the strength, scope, and enforcement of patent rights in the 1980s and 1990s led to a chorus of calls for reform. The Federal Trade Commission issued an influential report in 2003 calling for significant changes to the patent system to prevent it from becoming a drag on, rather than a benefit to, innovation.[37] That same year, a study committee of the National Academy of Sciences issued a series of recommendations for reform[38] that became the basis for proposed legislation in Congress starting in 2005.[39]

Academics also spoke up to point out the risks of a seemingly ever-expanding patent system. Adam Jaffe and Josh Lerner, in a 2004 book called *Innovation and Its Discontents: How Our Broken Patent System Is Endangering Innovation, and What to Do About It*, argued that changes to the patent system in the 1980s and 1990s had turned the patent system from a driver of innovation into a regulatory burden on innovative companies.[40] Four years later, Jim Bessen and Mike Meurer published *Patent Failure:*

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35. Before *eBay Inc. v. MercExchange*, 547 U.S. 388 (2006), the Federal Circuit had never denied a permanent injunction. *E.g.*, Ernest Grumbles III et al., *The Three Year Anniversary of eBay: A Statistical Analysis of Permanent Injunctions*, http://www.merchantgould.com/portalresource/Three-Year-Anniversary-of-eBay-v-MercExchange.pdf [https://perma.cc/F3NV-8RY3] ("For decades prior to the eBay decision, the Federal Circuit had instructed that after a determination of patent infringement there was a general rule a patentee was entitled to a permanent injunction."). The Federal Circuit expanded the availability of preliminary injunctions before *MercExchange*. *See, e.g.*, H.H. Robertson, Co. v. United Steel Deck, Inc. 820 F.2d 384, 391 (Fed. Cir. 1987) (affording "substantial deference" to review of district court's preliminary injunctions). After *MercExchange*, district courts rarely grant injunctions to PAEs, but the International Trade Commission continues to grant injunctions to both PAEs and product-producing companies. Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 2 (2012).

36. *Compare* 2 GLORIA K. KOENIG, PATENT INVALIDITY: A STATISTICAL AND SUBSTANTIVE ANALYSIS § 4.02, at 4-22 to -23 tbl.13 (rev. ed. 1980) (finding patents were held valid approximately 35% of the time between 1953 and 1978), *with* John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 196, 205 (1998) (finding that patents were held valid almost 55% of the time between 1989 and 1996), *and* Donald R. Dunner et al., *A Statistical Look at the Federal Circuit's Patent Decisions: 1982-1994*, 5 FED. CIR. B.J. 151, 154 tbl.1 (1995) (finding that patents were held valid 58% of the time between 1982 and 1994).

37. FED. TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 5 (2003), https://www.ftc.gov/reports/promote-innovation-proper-balance-competition-patent-law-policy [https://perma.cc/SP9E-7A3D].

38. COMM. ON INTELLECTUAL PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON. NAT'L ACAD. OF SCIENCES, A PATENT SYSTEM FOR THE 21ST CENTURY 81–83 (Stephen A. Merrill et al. eds. 2004) (recommending new USPTO examination guidelines, stronger nonobviousness standards, and an open review procedure where third parties could challenge patents after issuance).

39. Patent Reform Act of 2005, H.R. 2795, 109th Cong. §§ 3, 9(f)(1) (2005).

40. JAFFE & LERNER, *supra* note 1, at 9–11, 16.

How Judges, Lawyers, and Bureaucrats Put Innovation at Risk.[41] They collected evidence suggesting that the modern patent system was a net drag on innovation in almost every industry.[42] Only in the life-sciences industries were patents actually contributing to economic value.[43] In other areas, the growth of patent trolls and the expanded scope of patent claims meant that the most innovative companies were overwhelmingly patent defendants, not plaintiffs.[44] Both books suggested a number of proposed patent reforms.[45]

Michele Boldrin and David Levine went even further. In their book, *Against Intellectual Monopoly*, they argued that the entire patent system was unnecessary to drive innovation, and the fact that it restricted market freedom made innovation less likely.[46]

Even I got in the act. In a 2009 book titled *The Patent Crisis and How the Courts Can Solve It*, Dan Burk and I argued that the patent system was in crisis.[47] We pointed out that different industries experience the patent system very differently, and that many of the problems with the patent system came from the IT industries but did not apply in other industries like pharmaceuticals.[48] Unlike other commentators, we did not recommend legislative reform. Instead, we focused on the power of the courts to apply unitary rules with sensitivity to the needs of different industries.[49]

These are only a few prominent examples of a wave of complaints about the patent system in the last decade.[50] These complaints shared a worry that two decades of strengthening patents had led to a wave of bad patents

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41. BESSEN & MEURER, *supra* note 1.

42. *Id.* at 14–16, 144–46.

43. *Id.* at 15 fig.1, 16.

44. *Id.* at 16–19.

45. *Id.* at 238–39 (proposing the creation of specialized patent courts); JAFFE & LERNER, *supra* note 1, at 206 (advocating granting the patent office more resources, the institution of pregrant opposition, the institution of effective reexaminations of granted patents, and enhanced scope for judges to decide novelty and obviousness).

46. *See generally* MICHELE BOLDRIN & DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY 9–11 (2008).

47. BURK & LEMLEY, *supra* note 1, at 1; *accord* Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1578 (2003) (observing "theoretical confusion in patent law," that resulted from the different experiences of different industries); Peter S. Menell, *A Method for Reforming the Patent System*, 13 MICH. TELECOMM. & TECH. L. REV. 487, 505–06 (2007) (noting the existence of a current patent "crisis").

48. BURK & LEMLEY, *supra* note 1, at 92.

49. *Id.* at 95–109.

50. *See, e.g.*, Jay P. Kesan & Andres A. Gallo, *The Political Economy of the Patent System*, 87 N.C. L. REV. 1341, 1346 (2009) (detailing the weakness of the modern patent system and examining the political economy of patent reform); Mozelle W. Thompson & Susan Stark DeSanti, *Foreword*, 19 BERKELEY TECH. L.J. 857, 859 (2004) (observing "broad consensus" that the patent system is in need of reform); Shivan Mehta, Note, *Patent Reform Act of 2010: The Time for Change Is Now*, OKLA. J.L. & TECH., 2011, at 1, 1 (praising the Patent Reform Act of 2010).

approved by the PTO in the 1990s and asserted in the 2000s;[51] to a pervasive problem of patent holdup as companies faced hundreds of suits, each with the potential to shut down its core product;[52] and to a flood of suits by nonpracticing entities (NPEs), or 'patent trolls, that took advantage of plaintiff-friendly rules to extract more money than they deserved.[53]

B. The New Worry: Weakening the Patent System

The pendulum began to swing back in the 2000s as the increase in the number of patent-troll suits prompted calls for reform.[54] Congress began considering patent reform in 2005,[55] ultimately passing the AIA in 2011.[56] The AIA didn't change much about patent litigation, but it created the IPR procedure[57] and also changed the way we allocate patents to competing claimants by awarding patents to the first inventor to file a patent application rather than the first to invent.[58] But the Supreme Court made a number of changes in that period, mostly in the direction of weakening patent rights. It made it easier to invalidate a patent as obvious.[59] It made it easier to file a declaratory judgment action challenging a patent.[60] It held that winning a patent suit doesn't automatically justify an injunction.[61] It made it easier for prevailing defendants to recover their attorneys' fees.[62] And in a series of

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51. *See, e.g.*, BURK & LEMLEY, *supra* note 1, at 22 (explaining that PTO has been more lenient in granting patents in recent decades); Kesan & Gallo, *supra* note 50, at 1343–46 (same).

52. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEXAS L. REV. 1991, 2009 (2007).

53. *Id.*

54. *See* Troy A. Groetken et al., *The Pendulum Swings Back: The Impact of Recent SCOTUS and Federal Circuit Cases*, 6 NW. J. TECH. & INTELL. PROP. 331, 335–36 (2008) (describing Congress's interest in bringing about reform).

55. Patent Reform Act of 2005, H.R. 2795, 109th Cong. (2005); *see* Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part I of II*, 21 FED. CIR. B.J. 435, 435, 438 (2012) (describing the AIA as a "landmark bill" that made "fundamental changes to American patent law" and tracing the AIA to the Patent Reform Act of 2005).

56. Leahy–Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified in scattered sections of 28 and 35 U.S.C.).

57. *Id.* § 6(a) (codified as amended 35 U.S.C. §§ 311–19).

58. *Id.* § 3(b)(1) (codified as amended 35 U.S.C. § 102).

59. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 407, 415 (2007) (endorsing an "expansive and flexible" approach to obviousness and rejecting the Federal Circuit's rigid application of the "teaching, suggestion, or motivation" test).

60. *See* MedImmune, Inc. v. Genentech, Inc. 549 U.S. 118, 137 (2007) (holding that Article III's "case or controversy" requirement does not require a party to break its licensing agreement before seeking a declaratory action that "the underlying patent is invalid, unenforceable, or not infringed").

61. *See* eBay Inc. v. MercExchange, L.L.C. 547 U.S. 388, 390, 394 (2006) (rejecting the Federal Circuit's general rule to issue permanent injunctions against patent infringement in patent infringement cases and instead holding that the same standard for award of injunctive relief that applies to other lawsuits applies under the Patent Act).

62. Octane Fitness, L.L.C. v. Icon Health & Fitness, Inc. 134 S. Ct. 1749, 1755–58 (2014).

cases it has held that patents are not appropriate for laws of nature, natural phenomena, and abstract ideas, casting significant doubt on the validity of many business-method, software, genetics, and medical-diagnostic patents.[63]

The Federal Circuit, too, made a number of changes during this period that weakened patent rights. It cut back dramatically on the doctrine of equivalents, which allowed patentees to expand the reach of their patent claims.[64] It backtracked on willfulness, raising the standard of proof and eliminating the requirement that defendants obtain an opinion of counsel.[65] It took some steps to restrict forum shopping,[66] though they do not, so far, seem to have been effective.[67] And it has begun to rein in outlandish theories of patent damages.[68]

By 2015, the tenor of the debate had changed. A growing number of commentators worried that the effect of patent reforms designed to curb abuses by patent trolls would be to weaken the patent system as a whole, and with it, American competitiveness. Not surprisingly, patent trolls have complained long and loudly about various reforms they (rightly) perceived as aimed at their business model.[69] But they have gained allies on a number

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63. Alice Corp. Pty. v. CLS Bank Int'l, 134 S. Ct. 2347, 2359 (2014); Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1293 (2012). For an early recognition of the "counterrevolution" on the issue of patentable subject matter, see Thomas F. Cotter, *A Burkean Perspective on Patent Eligibility, Part II: Reflections on the (Counter) Revolution in Patent Law*, 11 MINN. J.L. SCI. & TECH. 365, 371–72 (2010).

64. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 569 (Fed. Cir. 2000) (en banc), *vacated*, 535 U.S. 722 (2002). For data on the effects of this, see John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 966–69 (2007); *see also* Lee Petherbridge, *On the Decline of the Doctrine of Equivalents*, 31 CARDOZO L. REV. 1371, 1387 & fig.1, 1390–91, 1390 fig.2, 1394–95, 1394 fig.3 (2010) (independently confirming the decline of the doctrine of equivalents).

65. *In re* Seagate Tech., L.L.C. 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc). That result was overturned by the Supreme Court this past term. *See* Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1932–35 (2016) (abrogating Seagate because it unduly restricted district court discretion under 35 U.S.C. § 284 (2012)).

66. *See, e.g.*, *In re* Genentech, Inc., 566 F.3d 1338, 1348 (Fed. Cir. 2009) (one of several Federal Circuit cases ordering the Eastern District of Texas to transfer cases to another district).

67. Forty-four percent of all patent cases filed in the country in 2015 were filed in the Eastern District of Texas. LEX MACHINA, *supra* note 9.

68. *See, e.g.*, Ericsson, Inc. v. D-Link Sys., Inc., 773 F.3d 1201, 1235 (Fed. Cir. 2014) (requiring apportionment in patent damages cases); Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1295 (Fed. Cir. 2011) (granting a new trial because jury's damage award was "fundamentally tainted by the use of a legally inadequate methodology" – the 25% "rule of thumb"); Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1323–24 (Fed. Cir. 2009) (pointing out that jury's royalties award was not supported by substantial evidence).

69. *See, e.g.*, Peter Detkin, *5 Inconvenient Truths About Patent Reform*, INTELL. VENTURES (Aug. 5, 2013), http://www.intellectualventures.com/insights/archives/5-inconvenient-truths-about-patent-reform [https://perma.cc/BH4V-4FXR] (complaining that the reforms impose unnecessarily broad restrictions and disproportionately impact certain desirable business models); Gene Quinn, *In Defense of Innovators: An Exclusive Interview with Ray Niro*, IP WATCHDOG (July 21, 2013), http://www.ipwatchdog.com/2013/07/21/in-defense-of-innovators-an-exclusive-

of fronts. Gene Quinn of IP Watchdog, originally no fan of patent trolls,[70] has changed his mind and now complains that patent reforms directed at trolls are destroying the patent system.[71] Professors like Richard Epstein and Adam Mossoff argue that patent reform was an overreaction.[72] Practicing lawyers are upset about the difficulty they have in obtaining and enforcing software patents after the Supreme Court's limits on patentable subject matter.[73] Companies like Apple and Microsoft—long the targets of patent trolls themselves[74]—have nonetheless worried about the limits courts have placed on software patents.[75] Even the former head of the PTO has expressed concern over the trends in the patent system.[76]

People in Congress seem to be listening to those concerns. A patent reform bill designed to do what the AIA did not—target patent-troll

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interview-with-ray-niro/id=43498 [https://perma.cc/5ZT4-Q57B] (relaying comments made by a patent litigator who complained that companies such as Microsoft and Apple would not have been able to succeed if the reforms had been in place during their formative years).

70. *See* Gene Quinn, *The Problem with Patent Trolls*, IP WATCHDOG (July 28, 2011), http://www.ipwatchdog.com/2011/07/28/the-problem-with-patent-trolls/id=18345 [https://perma.cc/RD62-G89P] ("I have been critical of patent trolls for quite some time.").

71. *See, e.g.*, Gene Quinn & Paul Morinville, *Patent Reform Riddled with Intended, Unintended, and Unknown Consequences*, IP WATCHDOG (July 27, 2015), http://www.ipwatchdog.com/2015/07/27/patent-reform-riddled-with-intended-unintended-and-unknown-consequences/id=60030 [https://perma.cc/J4ER-93WN] (commenting that "only true innovators will be hurt" by the fee-shifting provisions contained within proposed legislation).

72. *See, e.g.*, Mossoff, *supra* note 2, at 1695–96 (arguing that calls for current reform lack a strong theoretical and empirical basis); Richard Epstein, *Patent Reform Gone Wild*, RICOCHET (Mar. 4, 2014), https://ricochet.com/archives/patent-reform-gone-wild [https://perma.cc/VV6N-QZCB] (stating that the "onerous demands" imposed on plaintiffs "show just how far off the rails" reform efforts have gone).

73. *See supra* note 63 and accompanying text; *see, e.g.*, Robert R. Sachs, *#Alicestorm: When It Rains, It Pours*, BILSKIBLOG (Jan. 22, 2016), http://www.bilskiblog.com/blog/2016/01/alicestorm-when-it-rains-it-pours.html [https://perma.cc/7FQE-54ET] (suggesting that the dramatic increase in the rate of invalidations of patents under 35 U.S.C. § 101 likely indicates that meritorious claims are also being invalidated).

74. *See, e.g.*, Steve Dent, *Apple Won't Have To Pay a Patent Troll $625 Million After All*, ENGADGET (Aug. 2, 2016), https://www.engadget.com/2016/08/02/apple-wont-have-to-pay-a-patent-troll-625-million-after-all/ [https://perma.cc/Q2BS-BS9N] (describing a recent suit against Apple involving a patent troll that has sued Apple in other suits); John Mullin, *Patent Troll That Pounded Google for $85 Million Beaten in Round Two*, ARS TECHNICA (Oct. 16, 2015, 10:21 AM), http://arstechnica.com/tech-policy/2015/10/patent-troll-that-pounded-google-for-85-million-beaten-in-round-two/ [https://perma.cc/445H-SH4Q] (describing a suit involving a defendant patent troll that had previously sued Microsoft and Apple). Apple was a plaintiff in thirty patent cases between 2000 and September 16, 2016 and a defendant in 461 cases. LEX MACHINA, *supra* note 9. Microsoft was a plaintiff in thirty-seven patent cases and a defendant in 352 during the same period. *Id.*

75. *See, e.g.*, Julie Samuels, *The Biggest Threat to Patent Reform: The Apple/IBM/Microsoft Coalition*, VENTURE BEAT (Apr. 6, 2014), http://venturebeat.com/2014/04/06/the-biggest-threat-to-patent-reform-a-new-appleibmmicrosoft-coalition [https://perma.cc/NQ9G-VM5E] (stating that companies like Microsoft and Apple can "shut out their competition" by spending "millions of dollars on patent resources" in a less restrictive patent regime).

76. Kappos, *supra* note 2.

litigation—looked like a shoo-in in 2014, but it ran aground in 2015 and appears dead for the foreseeable future.[77] And if legislation does pass, it seems likely to undo one of the most significant patent-restrictive reforms of the last decade by weakening the IPR procedure.[78]

III. Equilibrium and the Pendulum

These changes seem to fit a larger pattern in the history of patent law. We have seen multiple swings between eras of strong and weak patent protection. Each seems to be a reaction to the perceived excesses of the era before. The expansive protection from the 1980s through the early 2000s was a reaction to the perception that patent law in the 1960s and 1970s was unduly weak.[79] That period, in turn, followed a period of strong protection ushered in by the Patent Act of 1952, which was, in turn, a reaction to weak protection in the 1930s and 1940s.[80] And so on.[81] Indeed, the swinging pendulum in patent law dates back as far as the late sixteenth century, when a period of perceived overprotection and laxity in granting patents was followed by the passage of the Statute of Monopolies in Parliament in 1623.[82]

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77. Caroline Craig, *Congress to Patent Trolls: You Shall Not Pass*, INFOWORLD (Sept. 18, 2016), http://www.infoworld.com/article/2984696/government/can-congress-stop-the-patent-trolls.html [https://perma.cc/2WU3-KYYE] (describing proposed reform legislation, including the PATENT Act, as providing potential solutions to the patent-troll problem); Brett Norman & Sarah Karlin, *As Congress Returns, Patent Reform Hits the Skids*, POLITICO (Sept. 8, 2015), http://www.politico.com/tipsheets/prescription-pulse/2015/09/pro-prescriptionpulsesept8-karlin-norman-210101 [https://perma.cc/TZV6-KCQR].

78. *See* STRONG Patents Act, S. 632, 114th Cong. § 102(a) (2015) (amending IPR proceedings in order to insulate patents from challenge, and now a part of the proposed PATENT Act, S. 1137, 114th Cong. § 11 (2015)).

79. *See, e.g.*, Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 6 (1989) (observing that the creation of the Court of Appeals for the Federal Circuit was partially a response to the widespread perception that patent protection was weak).

80. Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000*, 88 CALIF. L. REV. 2187, 2223 (2000) (explaining that the Patent Act of 1952 reversed decisions made by the Supreme Court from 1930 to 1948 against patents, the Court's "most virulent anti-patent era").

81. Mark A. Lemley, *A New Balance Between IP and Antitrust*, 13 SW. J.L. & TRADE AM. 237, 252–53 (2007).

82. The case of Sir Giles Mompesson and Sir Francis Mitchell illustrates the abuse of monopolies prior to the Statute of Monopolies. Despite the declaration of King James I that monopolies were illegal, Mompesson and Mitchell received a patent for the manufacture and sale of gold and silver lace. They abused the patent, making lace from copper and imprisoning others who infringed their patent. As a result of their overreach, Mitchell was fined, stripped of his patents, "forced to ride through the streets of London on a horse with his face to the tail, and imprisoned for life." Mompesson escaped. LEWIS EDMUNDS, THE LAW AND PRACTICE OF LETTERS PATENT FOR INVENTIONS 7–8 (London, Stevens & Sons 1890). Patent abuses of this sort led to the Statute of Monopolies, which forbad all patents except those based on invention, and limited them to a specific term of years. Statute of Monopolies, 21 Jac. 1, c. 3 (1623) (Eng.). For discussion on the Statute of Monopolies, see Ramon A. Klitzke, *Historical Background of the English Patent Law*, 41 J. PAT.

These may in fact be cycles of over- and underprotection.[83] The relationship among patents, innovation, and economic growth is a complicated one we don't fully understand. It is quite possible that every generation of Congresses, judges, and patent lawyers sees the imperfections of the decades before and overreacts to it. I have argued in the past that we should try to moderate these swings because both too much and too little patent protection are bad for the world.[84] But for my purposes in this Article it doesn't matter. You can believe that we cycle between appropriate protection and radical underprotection, or between appropriate protection and radical overprotection. The point I want to make is that in the past thirty years we have seen the pendulum swing toward stronger protection and then, more recently, toward weaker protection. And in each case, thoughtful scholars and advocates worried that the current trend was bad for the world and needed to be moderated or reversed.

We might expect to see stronger patent protection associated with more applications, more grants, more lawsuits, and more business transactions, and the shift to weaker protection associated with the opposite. But that is not what happened. Remarkably, the fundamental characteristics of the patent system seem remarkably unaffected by either the changes in substantive law or the changes in technology and legal procedure.

The graph of patent applications filed shows a more or less linear increase in applications over the past fifteen years, a period during which the number of applications more than doubled.[85] There is a slight leveling that corresponds to the Great Recession of 2008–2009, but then the increase continues. The substantive changes that began to weaken patent protection starting around 2006 do not seem to have deterred people from filing patent applications.

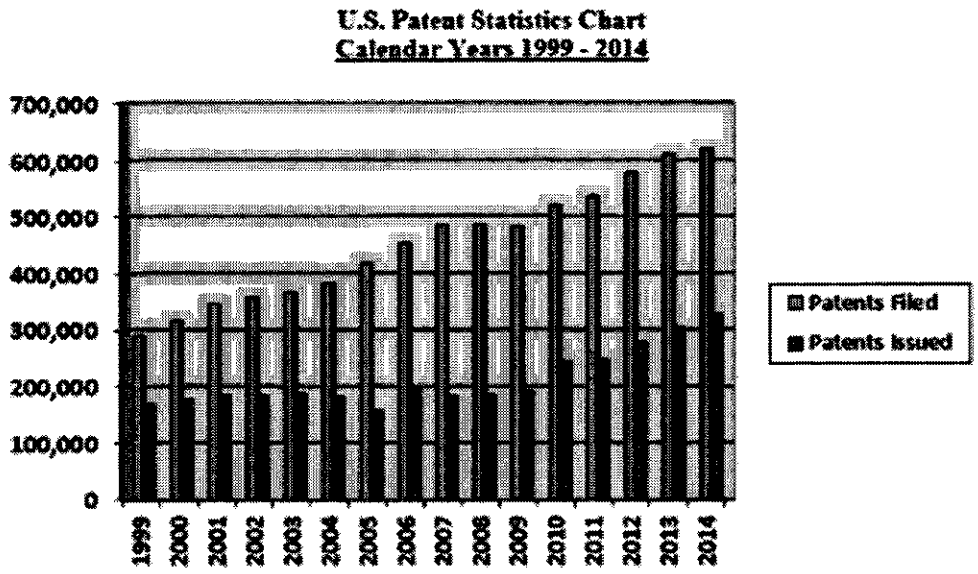
OFF. SOC'Y 615, 638 (1959); Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550–1800*, 52 HASTINGS L.J. 1255, 1270–73 (2001); Thomas B. Nachbar, *Monopoly, Mercantilism, and the Politics of Regulation*, 91 VA. L. REV. 1314, 1342, 1346, 1353 (2005).

83. For evidence of structural breaks in patent validity and infringement holdings in the past, see generally Matthew D. Henry & John L. Turner, *Across Five Eras: Patent Validity and Infringement Rates in U.S. Courts, 1929–2006*, 13 J. EMPIRICAL LEGAL STUD. 454 (2016).

84. *See* Lemley, *supra* note 81, at 246 n.26.

85. *See infra* Figure 3. Because many patent applicants file multiple applications, called continuations, based on the same parent application, these numbers overstate the number of unique applications filed in each year. *See* Lemley & Moore, *supra* note 13, at 69 (noting that when continuations are taken into account, the "PTO issues patents on over 85% of the application chains that are filed"). The number of true continuations has actually declined since 1999 because applicants can now file an alternative "Request for Continued Examination' (RCE) that does not get counted as a new application, and many do so. Between 1996 and 2013, 15.8% of the applications filed used a true continuation. Michael Carley et al., *What Is The Probability of Receiving a US Patent?*, 17 YALE J.L. & TECH. 203, 209–10 (2015).

Figure 3[86]



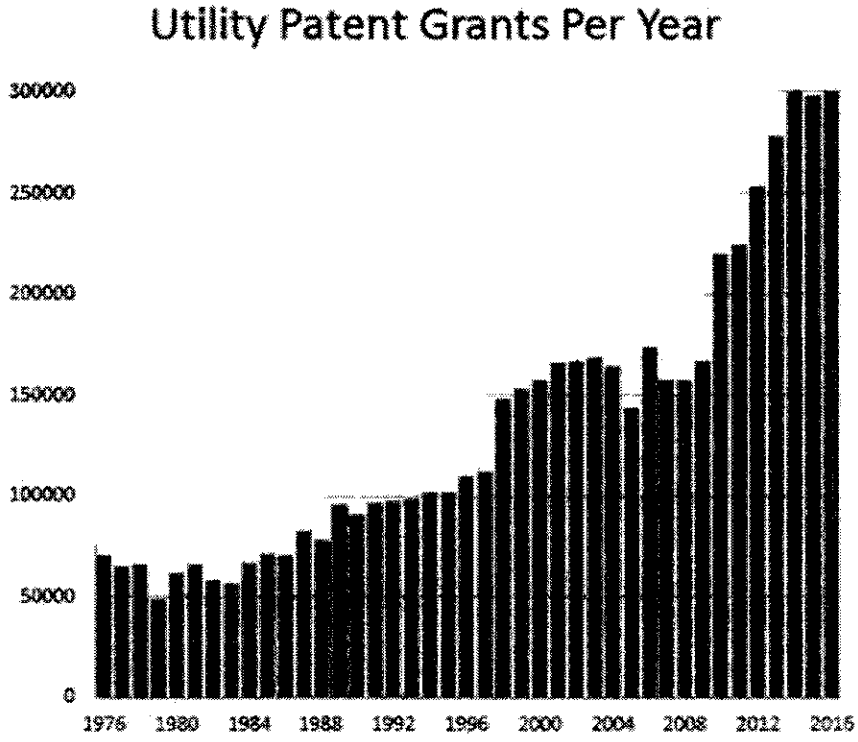
That process continues to this day. Despite challenges to software and biotechnology patents in particular,[87] 2016 is on track to produce a record number of both patent applications and issued patents.[88]

86. David Rogers, *United States Patent Application Filings Exceed 600,000 for the Second Straight Year*, INSIDE COUNSEL (June 4, 2015), http://www.insidecounsel.com/2015/06/04/united-states-patent-application-filings-exceed-60 [https://perma.cc/TP4Q-NQFT].

87. *See supra* note 73 and accompanying text (discussing the effects of Alice Corp. Pty. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014)).

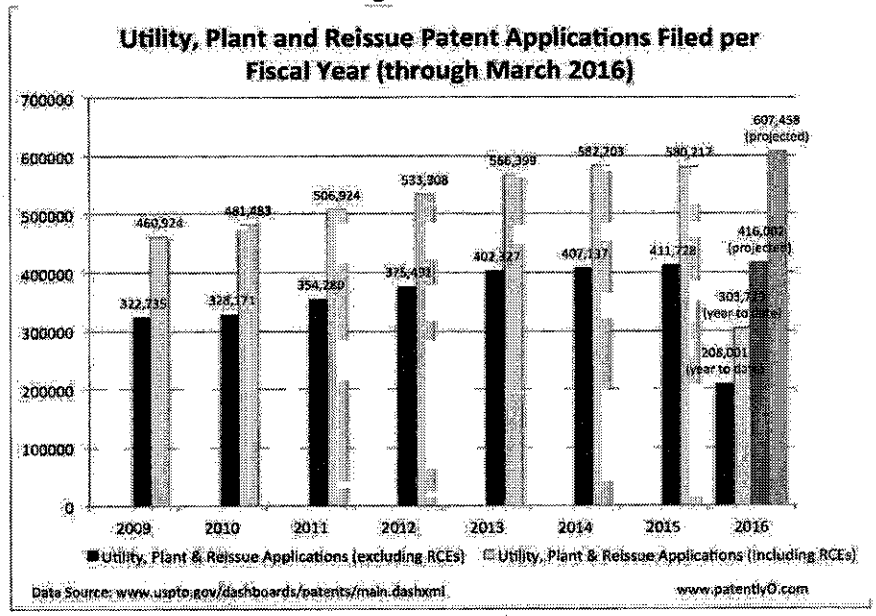
88. *See infra* Figures 4 & 5.

Figure 4[89]



89. Dennis Crouch, *Patent Grants 2016 Update*, PATENTLY-O (Apr. 17, 2016), http://patentlyo.com/patent/2016/04/patent-grants-update.html [https://perma.cc/2D6H-4V8F].

Figure 5[90]



Nor does the graph of utility patent grants show any obvious relationship to the pendulum swings of the patent system. Unlike the number of applications, this shows more significant variation over time, though the overall number doubled in the last fifteen years, as it did with applications.[91] Whether or not we adjust for the three-to-four year average patent pendency, the swings in grant rate don't map to the changes in patent doctrine. Patent grants essentially leveled off for a decade, from 2000 to 2010, and then increased dramatically after 2010. That means that the PTO was granting many more patents during the period in which patents were getting weaker (and theoretically harder to obtain) than during the height of the pro-patent swing.[92]

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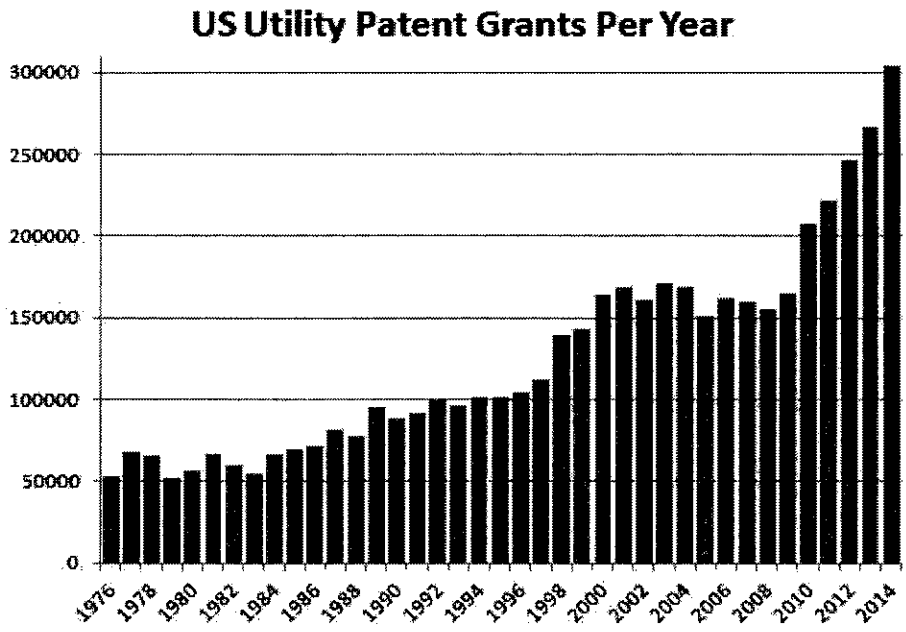
90. Jason Rantanen, *Patent Applications and Grants Holding Steady for FY 2016*, PATENTLY-O (Apr. 21, 2016), http://patentlyo.com/patent/2016/04/patent-applications-holding.html [https://perma.cc/2PCC-778Q].

91. Note that one cannot simply compare the numbers of applications and issued patents, both because of the delay between filing and issue and because of the presence of continuations. Two careful studies that sought to control for these issues both come to the conclusion that the patent grant rate is roughly 72%. Carley et al., *supra* note 85, at 209–10; Lemley & Sampat, *supra* note 7, at 199.

92. The percentage of U.S. patents issued to foreign inventors has increased over time. But it did not change significantly during the period of 2002 to 2015, staying steady at roughly half of all issued patents. U.S. PATENT & TRADEMARK OFFICE, PATENT COUNTS BY COUNTRY, STATE, AND YEAR UTILITY PATENTS (Dec. 2015), http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utl.htm [https://perma.cc/72AB-YJ4K]. So, even if there was some reason to distinguish U.S. from foreign applicants, the results described in the text do not change significantly.

Figure 6[93]



The changes are more likely a function of changes in PTO administration than bigger changes in patent law. The grant rate dropped under the leadership of Jon Dudas, the head of the PTO, during much of the Bush Administration, and then rose substantially when the Obama Administration appointed Dave Kappos and then Michelle Lee.[94]

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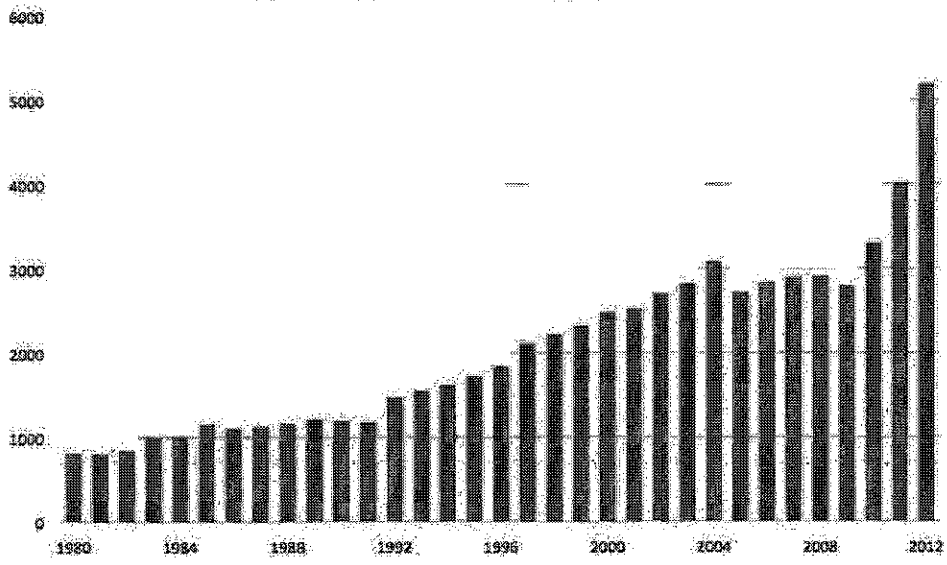
93. Dennis Crouch, *Patent Grants Per Fiscal Year (USPTO)*, PATENTLY-O (Sept. 30, 2015), http://patentlyo.com/patent/2015/09/patent-grants-fiscal.html [https://perma.cc/P592-UAX3].

94. Jon Dudas served as acting director of the PTO from January 2004 to August 2004, and served as the actual director of the PTO from August 2004 to January 2009. Dennis Crouch, *PTO Director Jon Dudas Announces Resignation*, PATENTLY-O (Jan. 6, 2009), http://patentlyo.com/patent/2009/01/pto-director-jo.html [https://perma.cc/SWS5-94VT]; Marius Meland, *Bush Names Dudas to Head USPTO in Recess Appointment*, LAW360 (Aug. 2, 2004, 12:00 AM), http://www.law360.com/articles/1877/bush-names-dudas-to-head-uspto-in-recess-appointment [https://perma.cc/93HZ-WCX3]; Marius Meland, *Jon Dudas Takes Reins at USPTO, May Get Nomination*, LAW360 (Jan. 13, 2004, 12:00 AM), http://www.law360.com/articles/768/jon-dudas-takes-reins-at-uspto-may-get-nomination [https://perma.cc/Q8NM-VHV7]. Dave Kappos served as director of the PTO from August 2009 to January 2013. Gene Quinn, *In Capable Hands: Profiling the New Leadership at the PTO*, IP WATCHDOG (Jan. 31, 2013), http://www.ipwatchdog.com/2013/01/31/in-capable-hands-profiling-the-new-leadership-at-thepto/id=34464/ [https://perma.cc/29GU-CH5T]. Michelle Lee was appointed by the President in October 2014 and confirmed by the Senate in 2015. Jacob Keastrenakes, *Senate Confirms Former Google Attorney Michelle Lee as Patent Office Director*, VERGE (Mar. 10, 2015, 9:14 AM), http://www.theverge.com/2015/3/10/8181805/michelle-lee-confirmed-uspto-director [https://perma.cc/CXP7-3N6P]. For discussion of the role PTO administration can play in

The number of lawsuits also doesn't seem to easily fit a pattern that ties to substantive changes in patent law.

Figure 7[95]



As Figure 5 shows, the number of lawsuits does in fact seem to increase steadily during the period of expansive patent protection, then level off in the last half of the 2000s. But the number of lawsuits started to increase again in 2010, even as courts were cutting back on the scope of substantive patent doctrine.

Because the number of issued patents changed during this period, a more appropriate measure might be the percentage of patents in force that are litigated in any given year. Figure 5 shows that the number of suits per patent dipped in the 1980s and early 1990s, even as patent law was strengthening. The number of suits per patent increased in the 1990s, but then leveled off even before 2000, despite the strength of patent protection in that period. It dropped in the late 2000s before picking up by 2011.

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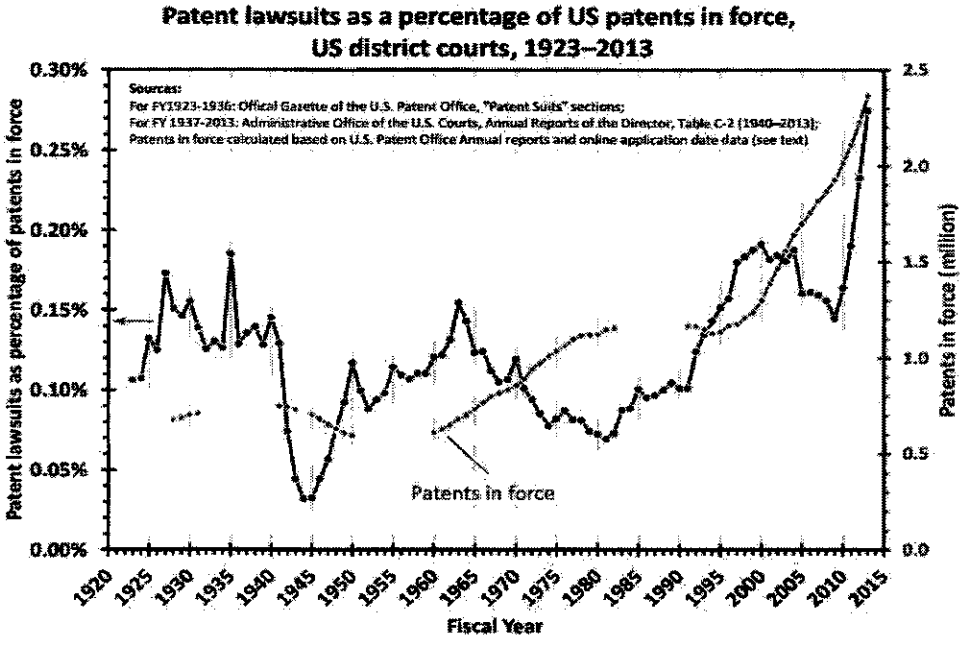
influencing patent grant rates, see Michael D. Frakes & Melissa F. Wasserman, *The Failed Promise of User Fees: Empirical Evidence from the U.S. Patent and Trademark Office*, 11 J. EMPIRICAL L. STUD. 602, 603 (2014).

95. Quinn, *supra* note 12.

Figure 8[96]

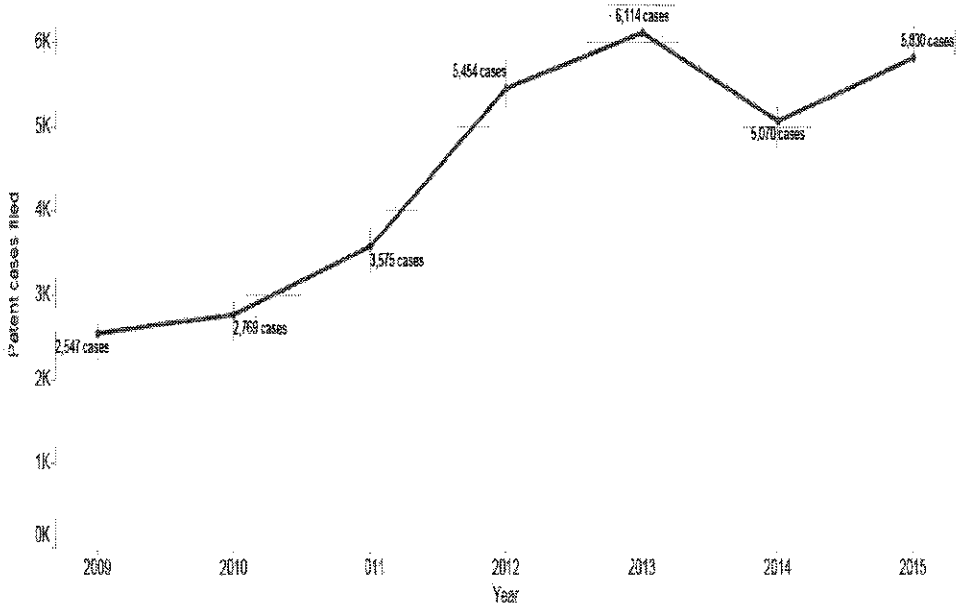


The law changed in the fall of 2011 in a way that required plaintiffs who sued multiple defendants on the same patent to do so in multiple suits.[97] As a result, the sharp increase in the number of suits filed in 2012 and thereafter is an anomaly. The numbers reached a new, higher plateau after 2012.

96. Dennis Crouch, *Patent Litigation Rates*, PATENTLY-O (Nov. 18, 2014), http://patentlyo.com/patent/2014/11/patent-litigation-rates.html [https://perma.cc/XQ42-F33B].

97. *See supra* note 11.

Figure 9[98]
Patent Lawsuits by Year, 2009–2015



For that reason, a better measure of change may be the number of defendants sued. Robin Feldman studied that issue and found a much less substantial increase in the number of defendants sued from 2007 through 2012.[99] The numbers certainly did not decline, however, even as courts were cutting back on patent protection.

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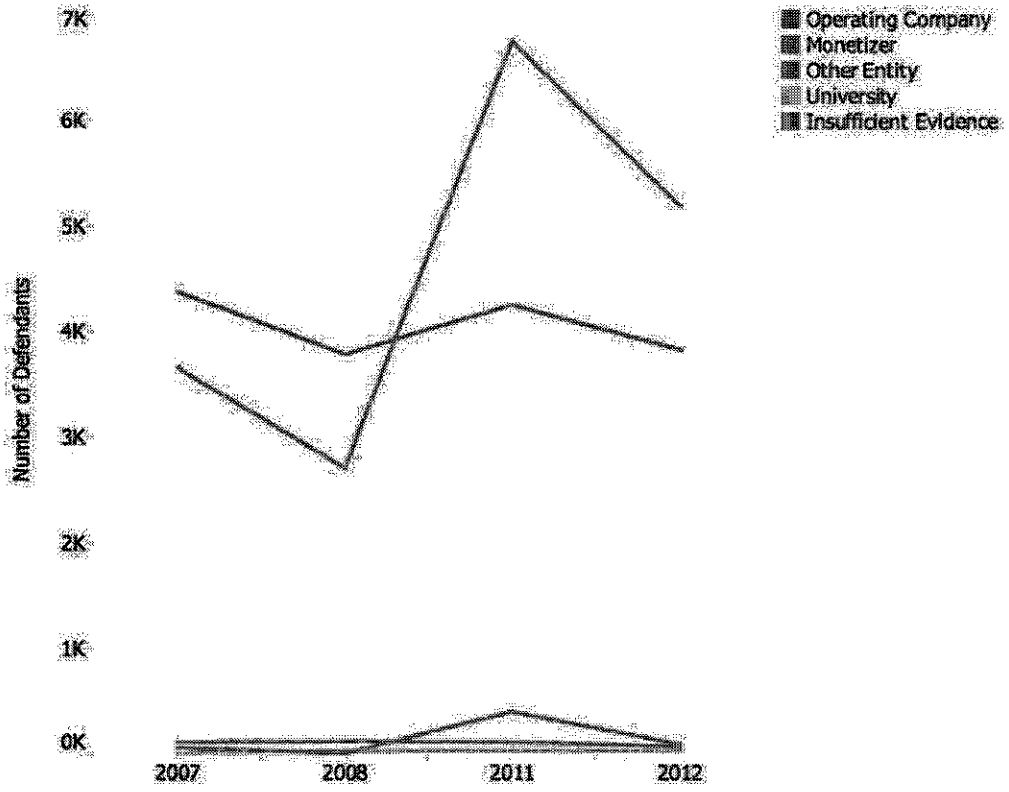
98. LEX MACHINA, *supra* note 9. There is some evidence that patent lawsuits fell at the beginning of 2016. Lex Machina reports that there were only 1,609 patent lawsuits filed through May 17, 2016, compared with over 2,000 to the same date in each of the last two years. Whether that represents a longer term trend remains to be seen. Lawsuits dropped in the last half of 2014 after the *Alice* decision, only to rebound in 2015 to near-record levels. And a rule change effective December 1, 2015, encouraged many plaintiffs to file suit at the end of November 2015, meaning that the slower litigation rate so far in 2016 could simply be the result of plaintiffs rushing to court with suits that would more naturally have been filed over the next several months. Order Amending the Federal Rules of Civil Procedure and the Appendix of Forms (Apr. 29, 2015), https://www.supremecourt.gov/orders/courtorders/frcv15_5h25.pdf [https://perma.cc/QT83-5UL6] (eliminating Form 18 of the Federal Rules of Civil Procedure, which had insulated patent cases from the normal rules of *Twombly*, Bell Atlantic Corp. v. Twombly, 550 U.S. 554 (2007), and *Iqbal*, Ashcroft v. Iqbal, 556 U.S. 662 (2009)). Indeed, patent litigation saw a significant rebound in the second quarter of 2016, up 31% over the first quarter, suggesting that the first-quarter drop may simply be short-term variance. Pedram Sameni, *Weekly Chart: Patent Litigation Up 31% in Q2*, PATEXIA (July 13, 2016), https://www.patexia.com/feed/patent-litigation-up-31-in-q2-20160712 [https://perma.cc/WD5L-RTLT].

99. *See infra* Figure10.

Figure 10[100]
Number of Defendants Sued: Aggregated Over Time



While there are arguments for and against using any of these measures of patent litigation, what is notable is that by none of these measures does patent litigation seem to track the changes in the strength of patent rights.

100. Feldman et al., *supra* note 15, at 48.

Nor is there an obvious relationship between patent strength and the robustness of patent markets. Most patent sales and licenses are confidential,[101] so good data on patent markets are hard to come by. But we can get some sense by looking at the market for brokered patent sales. With the exception of a spike in 2012 driven by a few large smartphone transactions,[102] the size of the market has stayed roughly the same over the past five years, or has even grown modestly, even as various decisions weakened patent protection and might be thought to have reduced the value of many patents.[103] There is even anecdotal evidence that the market is expanding.[104] Indeed, some patent transaction intermediaries reported that 2015 was a record year for them.[105]

101. Mark A. Lemley & Nathan Myhrvold, *How to Make a Patent Market*, 36 HOFSTRA L. REV. 257, 257 (2007).

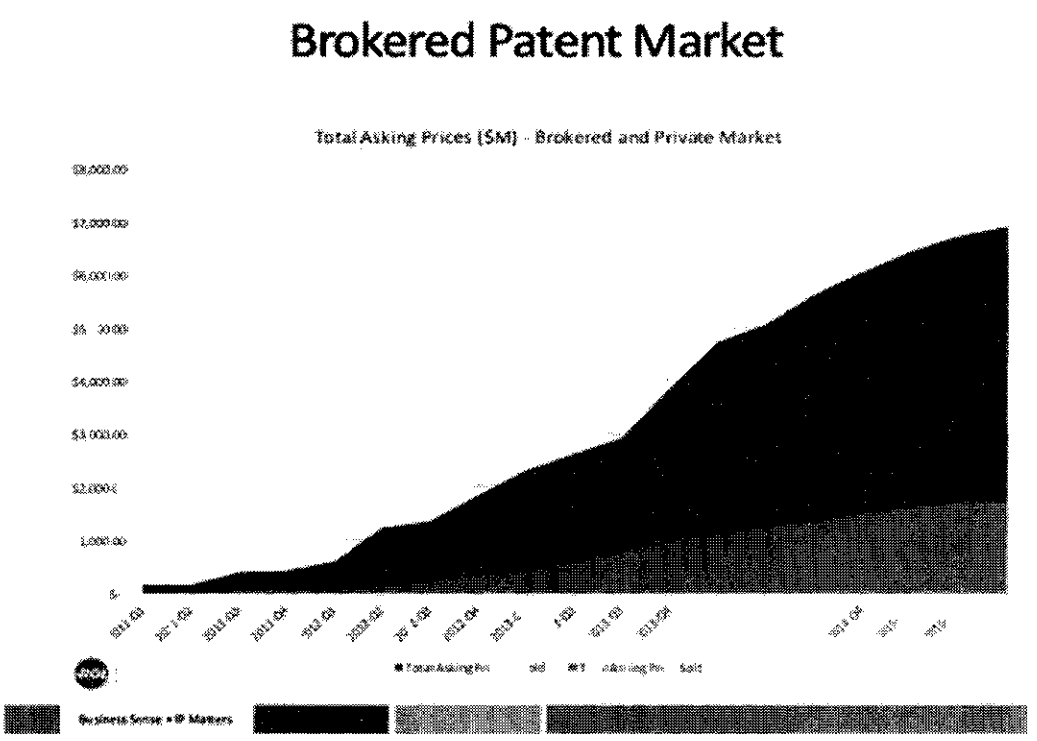
102. *Compare Patent Value Quotient: Full Year 2012*, IPOFFERINGS 3, http://www.ipofferings.com/patent-value-quotient.html [https://perma.cc/WUB6-WNQJ], *with Patent Value Quotient: Full Year 2013*, IPOFFERINGS 3, http://www.ipofferings.com/drawings/Feb%202015/PVQ-FY2013-Report-Rev.pdf [https://perma.cc/68BQ-YSMB], *and Patent Value Quotient: Full Year 2014*, IPOFFERINGS 3, http://www.ipofferings.com/drawings/Feb%202015/PVQ-FY2014-Report.pdf [https://perma.cc/UC46-FWG2] (showing that the average price paid per patent and the median price paid per patent increased significantly in 2012).

103. Kent Richardson, *2015 Brokered Patent Market*, ROL GRP., http://www.richardsonoliver.com/news/2015/11/18/2015-brokered-patent-market [https://perma.cc/258U-QSM8]. Because the chart shows the cumulative value of transactions, the easiest way to measure growth is to determine how long it takes to reach another $1 billion in sales. That number starts out at five quarters in 2011–12, but drops to roughly three quarters by 2015. See infra Figure 11.

104. A Certified Patent Valuation Analyst declared in February 2016 that "patent valuations are set to surge." Email from Certified Patent Valuation Analyst to author (Feb. 19, 2016) (on file with author). And patent brokerage experts point to an increase in transactions in early 2016. Joseph Marks, *New Patent Broker Listings Jump in First Quarter*, BLOOMBERG BNA (June 6, 2016), http://www.bna.com/new-patent-broker-n57982073638/ [https://perma.cc/ED6F-X95E]; *see* Kent Richardson et al., *The Brokered Patent Market in 2015 – Driving Off a Cliff or Just a Detour?*, INTEL. ASSET MAG., Jan./Feb. 2016, at 9, 9, 10 fig.1 ("Asking prices are down, but the brokerage business is not in as poor health as it may first appear.").

105. Press Release, Tangible IP, Tangible IP Announces Record Transactions for 2015 (Feb. 5, 2016), http://tangibleip.biz/wp-content/uploads/2012/03/TIP-PR-2015-Recap.pdf [https://perma.cc/A9A5-QYZE].

Figure 11[106]



Finally, and perhaps most surprising, the outcome of patent litigation has also proved remarkably insensitive to substantive changes in patent law, at least since the creation of the Federal Circuit in 1982. Don Dunner's 1995 study of patent validity decisions found that of patents litigated to a final decision on validity between 1982 and 1994, 58% were held valid.[107] In 1998, Allison and Lemley found that 54% of cases litigated to decision on validity between 1989 and 1996 were held valid.[108] And in 2015, Allison, Lemley, and Schwartz found that 57% of cases filed in 2008 and 2009 and litigated to decision on validity between 2009 and 2013 were held valid.[109] And while it is too soon to know whether those numbers changed after the

106. Richardson, *supra* note 103.

107. Dunner, *supra* note 36, at 158 tbl.1. That reflected a long-term increase over the immediate pre-Federal Circuit period, when the win rate on validity was 35%. Koenig, *supra* note 35, § 4.02, at 4-23 tbl.13 (showing that, during 1953–78, the average rate at which patents were held invalid was 65.7%).

108. Allison & Lemley, *supra* note 36, at 194, 205.

109. John R. Allison et al., *Understanding the Realities of Modern Patent Litigation*, 92 TEXAS L. REV. 1769, 1773, 1776–78, 1787–88 (2014).

Supreme Court's *Alice*[110] decision in 2014, which did lead to more invalidations of software and some biotechnology patents, recent evidence from administrative revocation proceedings at the Patent Trial and Appeal Board suggests that between 2012 and 2015 the invalidation rate was 42.3%.[111]

We see a similar result with studies of overall patentee win rate. Because patentees must win both validity and infringement to win their case, patentee overall win rates are significantly lower than their win rates on individual issues like validity.[112] In 2006, Paul Janicke and LiLan Ren found that patentees won 25% of all cases decided between 2002 and 2004.[113] A decade later, Allison, Lemley, and Schwartz found that patentees won 26% of cases filed in 2008 and 2009 and litigated to decision on validity between 2009 and 2013.[114]

Think about these numbers for a minute. Over the past two decades, even as we have seen dramatic changes in the substantive law, first in one direction and then another, the outcome of litigated cases has essentially remained unchanged. At least when it comes to court outcomes, accused infringers don't seem to have suffered from the expansion of patent law in the 1980s and 1990s, at least in court, and patentees in court similarly don't seem to have suffered from the substantive changes over the past decade that weakened patent rights. Indeed, if anything patentees do slightly better today than they did when patents were at their strongest, though the differences are tiny.[115]

Finally, one variable in the patent system remains unobservable—how much money is paid out in settlements. Because patent settlements are almost always confidential, there is no way to know whether changes in substantive law are reflected in differences in how much people pay to settle cases.[116] We do know, however, that damage awards in the cases that do go to trial don't seem to map to swings in the substantive law of patents.[117]

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110. Alice Corp. Pty. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014).

111. BRIAN C. HOWARD, LEX MACHINA, LEX MACHINA PATENT TRIAL AND APPEAL BOARD (PTAB) 2015 REPORT 1–2 (2016), http://pages.lexmachina.com/rs/098-SHZ-498/images/Lex%20Machina%20PTAB%202015%20Report.pdf [https://perma.cc/J47R-SZS2].

112. Mark A. Lemley, *The Fractioning of Patent Law*, *in* INTELLECTUAL PROPERTY AND THE COMMON LAW 504, 508 (Shyamkrishna Balganesh ed., 2013).

113. Paul M. Janicke & LiLan Ren, *Who Wins Patent Infringement Cases?*, 34 AIPLA Q.J. 1, 4–5 (2006).

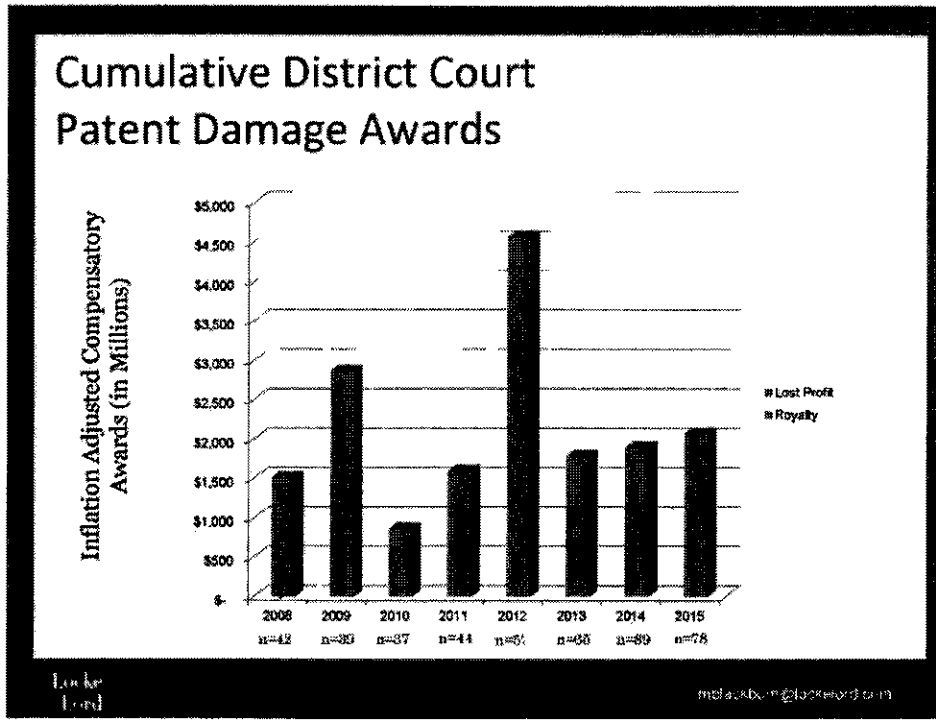
114. Allison et al., *supra* note 109 at 1708, 1776–78, 1787.

115. There are, of course, selection effects that determine which cases go to judgment, and they may have significant influence on outcomes. I discuss those in detail in *infra* subpart IV(A).

116. *See* Lemley & Myhrvold, *supra* note 101, at 257–58 (suggesting that Congress require parties to patent lawsuits to disclose their settlements so as to increase transparency in the patent market).

117. *See infra* Figure 12.

Figure 12[118]



Settlements should logically be a function of what the patentee could expect to receive if it won the case,[119] though settlements in "bottom-feeder' troll cases are a function of the cost of litigation.[120] So while there is no way to know if the price paid in settlements is declining, any decline is more likely to be attributable to changes in the cost of litigation than in the substantive outcomes of the cases that do go to judgment. Those substantive outcomes haven't changed much over the years.

118. Matt Blackburn, *Patent Damages Crept Upward in 2015*, LINKEDIN (Jan. 6, 2016), https://www.linkedin.com/pulse/patent-damages-crept-upward-2015-matt-blackburn?forceNoSplash=true [https://perma.cc/8PR4-DSUW].

119. *See* Lemley & Shapiro, *supra* note 52, at 1995–96 (observing that, under the standard economic theory of Nash bargaining, the negotiated royalty rate will depend on each party's expected payoff if negotiations break down); *cf.* Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. CORP. L. 1151, 1182 (2009) (observing that, in theory, the proper calculation of royalties by a court should "replicate the result the parties themselves would have negotiated ex ante in a world without holdup risk").

120. Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2126 (2013).

None of this means that the *practice* of patent litigation is unchanged. Indeed, there is anecdotal evidence of downturns at patent litigation firms.[121] But that doesn't seem to result from either the filing of fewer lawsuits or the fact that patentees are less likely to win those lawsuits. Rather, the fact that litigation is being resolved more cheaply, often on a motion to dismiss, or stayed pending a cheaper IPR proceeding, means that patent litigants are spending less money on lawyers.[122] That's not great if you're a patent litigator, but it's probably good for everyone else in the system.

IV The Sound and Fury of Patent Reform?

The evidence presented in Part III presents a real puzzle. Why do the very real changes in the PTO, the process of litigation, and the substance of legal rules seem to have so little effect on how many people file patent applications, how many patents are issued, how many patents are licensed, how many suits are filed, or who wins those suits? Why is it that, as John Barton found back in 2000, growth in the number of patent lawyers is unrelated to, and far outpacing, growth in R&D expenditures?[123] In this section, I consider some possible explanations.

A. Selection Effects

One possible explanation for some of these results is case selection. There seems little question that the legal rules and various other factors affect who files suit and who among that group takes their cases to trial or judgment.[124] An extreme form of the selection-effects story is the Priest–Klein hypothesis, which proposes that propensity to litigate is based not on the merits themselves but on uncertainty about how those merits will be resolved.[125] Priest and Klein suggest that parties will settle the easy cases (both the very good ones and the very bad ones), leaving only the toss-ups to go to court and driving win rates across the board to 50%.[126] If that were

121. Ashok Ramani, *Decline in Patent Suits Raises Questions for Attorneys, Law Firms*, KEKER & VAN NEST LLP (Nov. 11, 2014), http://www.kvn.com/news/news-items/decline-in-patent-suits-raises-questions-for-attorneys-law-firms-ashok-ramani [https://perma.cc/DN96-JBFY].

122. David Lat, *Is Patent Litigation Dead? What Gives?*, ABOVE THE LAW (Nov. 11, 2015), http://abovethelaw.com/2015/11/is-patent-litigation-dead-what-gives/ [https://perma.cc/Y5JZ-EX84] ("The days of throwing dozens of people on a case are over.").

123. John H. Barton, *Reforming the Patent System*, 287 SCI. 1933, 1933 (2000). To be fair, it is far from clear which way causation might run in that relationship.

124. For a detailed discussion of selection effects that may affect which patent cases settle and which go to judgment, see John R. Allison et al., *How Often Do Non-Practicing Entities Win Patent Suits?*, 32 BERKELEY TECH. L.J. (forthcoming 2017) (manuscript at 59–65).

125. George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1, 16–17 (1984).

126. *Id.* at 17.

true, it might explain why outcomes of the cases that do go to judgment seem largely unchanged even as the strength of patent rights changes significantly.

But there are reasons to question how much weight we can put on the Priest–Klein hypothesis. Others have criticized the relevance of the strong Priest–Klein theory to patent litigation.[127] And Steven Shavell has argued that Priest and Klein are wrong as a general matter of theory to suggest that selection effects will drive win rates towards 50%.[128] Further, the empirical evidence doesn't seem to support the strong version of the hypothesis in patent litigation. There is some evidence that there is not very much systematic variation in who files suits that settle compared to who files suits that don't.[129] There are systematic variations from 50% in win rates overall[130] and in win rates measured by technology or the nature of the plaintiff.[131] While some of that could be explained by the nature of patent litigation or asymmetric repeat players (who might care about establishing a litigation reputation), the evidence also suggests that win rates have moved over time before the period I study in ways Priest–Klein cannot explain.[132]

I certainly don't mean to suggest that there are no selection effects that affect which cases settle; surely there are. And they may go partway toward explaining the resilience of the patent system. But there is little reason to think that the strong form of the Priest–Klein hypothesis is accurate. So the fact that litigation outcomes haven't changed over the past thirty years remains an interesting fact that requires some explanation.

The Priest–Klein hypothesis tries to explain what subset of lawsuits settle and which ones go to trial. But selection effects may also influence whether or not patentees file suit at all, and therefore how many suits are filed. The first question is what happens to patents that are not enforced in

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127. *E.g.*, Schwartz, *supra* note 28, at 1104 (observing that the 50% hypothesis does not "take into account differential stakes, parties' misperceptions, and other information asymmetries"); Jason Rantanen, Why Priest-Klein Cannot Apply to Individual Issues in Patent Cases 3–8 (Mar. 21, 2013) (unpublished manuscript), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2132810 [http://perma.cc/X994-NSRJ] (arguing that the Priest–Klein hypothesis is inapplicable to patent litigation because a patent holder must win at each of several "stages' of litigation to ultimately prove successful).

128. Steven Shavell, *Any Frequency of Plaintiff Victory at Trial Is Possible*, 25 J. LEGAL STUD. 493, 498–501 (1996).

129. Allison et al., *supra* note 124, at 53–59 (conducting a robustness check to try to estimate selection effects and finding that they did not explain differences in who won patent cases).

130. *See supra* notes 113–14 and accompanying text (showing that the overall patentee win rate hovers around 25%).

131. Allison et al. *supra* note 124, at 40–46 (measuring win rates by type of plaintiff and comparing operating companies to NPEs and their subtypes); John R. Allison et al. *Our Divided Patent System*, 82 U. CHI. L. REV. 1073, 1096–99 (2015) (measuring win rates by technology and surveying results of various methods of statistical modeling).

132. *See supra* note 36 and accompanying text.

court. Allison et al. find that litigated patents tend to be valuable patents.[133] A tougher question is whether there are 'supervaluable' patents that are so obviously valid that everyone agrees to license them without litigation.[134] If the most valuable patents tend to be enforced in court, at least sometimes, one would expect the number of enforced patents, and hence the number of lawsuits, to increase as patent rights gets stronger, since marginal patents become worth enforcing. But if it is only the upper middle-class patents—valuable but not supervaluable—that are being enforced, the expected effects of strengthening or weakening patent rights become more complicated. Weakening patent rights could conceivably increase the number of patent suits in this situation, as super-patents that would have been licensed without a fight get pushed into litigation. The result might or might not be an increase in the total number of suits; more likely it would simply shift which patents are litigated because they are at the margins of validity and infringement. But if we are simply shifting which patents are enforced, we may not see the effects of a change in the strength of a patent regime reflected in an increase or decrease in the total number of suits. Recent work by Andrew Torrance supports the claim that litigated patents are the most valuable patents, not the mid-range patents, meaning this may not be as much of a worry.[135]

A second potentially confounding effect is the rise of patent trolls. Nonpracticing patent plaintiffs rose from virtually none in the 1980s to well more than half of all lawsuits filed in 2015.[136] The rise of patent-troll lawsuits should have an effect on the total number of patent suits filed. If troll suits and practicing-entity suits are independent of each other, an apples-to-apples comparison of patent lawsuits should require us to eliminate patent-troll lawsuits and focus only on the year-over-year change in practicing entity suits. Doing so flattens the growth of practicing-entity suits considerably.[137] Indeed, focusing only on entity classes 8 and 12, corresponding to practicing entities, makes clear that the number of practicing-entity suits remained roughly flat from 2000 to 2013.

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133. John R. Allison et al., *Valuable Patents*, 92 GEO. L.J. 435, 439–41 (2004).

134. *See id.* at 442 (discussing this issue).

135. Andrew W. Torrance & Jevin D. West, *All Patents Great and Small: A Big Data Network Approach to Valuation*, 20 VA. J.L. TECH. (forthcoming Jan. 2017) (manuscript at 3).

136. *2015 Patent Dispute Report*, UNIFIED PATENTS fig.7 (Dec. 31, 2015), https://www.unifiedpatents.com/news/2016/5/30/2015-patent-dispute-report [https://perma.cc/3DXQ-ZWDP] (showing that nonpracticing-entity litigation accounted for 66.9% of district court cases in 2015); James Bessen, *The Evidence Is In: Patent Trolls Do Hurt Innovation*, HARV. BUS. REV. (Nov. 2014), https://hbr.org/2014/07/the-evidence-is-in-patent-trolls-do-hurt-innovation [https://perma.cc/R4SX-DTQ4] (stating that patent suits have multiplied sixfold since the 1980s and nonpracticing patent plaintiffs file the majority of patent suits).

137. *See infra* Figure 13.

Figure 13[138]

Time Trends Near AIA

Code:	1	5	1or5 only	8	8 or 12 only	9	9 only	Total Coded	Total Filed
2000	70 (3%)	155 (7%)	185 (8%)	1795 (78%)	1695 (74%)	365 (16%)	225 (10%)	459*	2296
2010	330 (12%)	225 (8%)	559 (21%)	1865 (69%)	1745 (64%)	305 (11%)	190 (7%)	543*	2716
2011	784 (23%)	532 (16%)	1235 (37%)	1848 (55%)	1708 (51%)	253 (8%)	162 (5%)	3357	3533
2012	2018 (37%)	921 (17%)	2792 (52%)	2134 (40%)	2004 (37%)	276 (5%)	187 (3%)	5392	5420
2013*	1857 (40%)	645 (14%)	2411 (52%)	1749 (38%)	1607 (35%)	285 (6%)	204 (4%)	4605*	4638*
1 = licensing firm, 5 = inventor-owned licensing firm, 8 = practicing entity, 9 = inventor, 12 = IP sub of practicing entity									

It may be, however, that there is some relationship between the number of troll suits and the number of practicing-entity suits. Practicing entities are increasingly spinning their patents off to NPEs who then assert the patents against competitors of the original owner, a practice known as privateering.[139] The rise of trolls may therefore substitute for some practicing-entity suits that would otherwise be filed. While that may be a partial explanation, however, it is unlikely to account for anything like the majority of the 3,000-plus troll suits filed every year.[140]

Second, there may be some sense in which the rise of patent trolls drives out practicing entities. A large percentage of patent-troll suits are not

138. Mark Lemley & Shawn Miller, Second Look at the Stanford Litigated Patent Owner Dataset (2016) (unpublished dataset) (on file with author). The numbers in the "8 only" category exceed those for '8 plus 12' because the latter category includes patent plaintiffs who were also classed in some other category, while the "8 only" column includes only patent plaintiffs who were only listed as practicing entities.

139. Tom Ewing, *Indirect Exploitation of Intellectual Property Rights By Corporations and Investors: IP Privateering and Modern Letters of Marque and Reprisal*, 4 HASTINGS SCI. & TECH. L.J. 1, 5 (2012); Tom Ewing & Robin Feldman, *The Giants Among Us*, STAN. TECH. L. REV., 2012, at 1, 13 (documenting this phenomenon and coining the term "privateering" to describe it); Lemley & Melamed, *supra* note 115, at 2120–21 (discussing the prevalence of and problems with privateering).

140. RPX, 2015 NPE ACTIVITY HIGHLIGHTS 4 chart 1 (Mar. 21, 2016), https://www.rpxcorp.com/wp-content/uploads/sites/2/2016/01/RPX-2015-NPE-Activity-Highlights-FinalZ.pdf [https://perma.cc/6U7E-WQ3R].

concerned with the merits but are efforts to collect money based on the uncertainty and cost of litigation.[141] And the vast majority of patent lawsuits are not filed against those accused of copying but against defendants who themselves independently invented the technology.[142] The result may be a 'market for lemons' effect[143] in which the prevalence of demands by patent trolls seeking to extort nuisance-value settlements makes it less likely that potential licensees will respond favorably to any license demand. Technology companies confronted with multiple demands for money, many or most of which are frivolous and virtually none of which actually promise any real new technology,[144] have a tendency to put their heads down and ignore all patents unless forced to confront them by lawsuit.[145] This effect may drive more patents that would have been licensed into litigation because litigation becomes the only way to get the attention of a licensee and prompt a deal.[146]

A final form of selection effect may be at work: inventors as a class may be acting in various ways to modulate the level of protection they receive. John Golden has noted the complex nature of "innovation dynamics, which he analogizes to fluid mechanics.[147] Changes that move patent law in one direction can produce complex feedback effects that return the system to equilibrium. Jonathan Barnett has argued that inventors as a group can privately modulate the appropriate level of IP protection by lobbying, reducing enforcement, or transacting to reduce overbroad IP rights.[148] The rise in the strength of patent protection, for instance, was accompanied by

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141. Lemley & Melamed, *supra* note 120, at 2176–77.

142. Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1421, 1459 (2009).

143. A "market for lemons' happens when customers cannot observe the quality of products, and so are unwilling to pay extra for putatively high-quality goods. This drives high-quality sellers out of the market, reducing the overall quality of the goods. This in turn reduces consumer willingness to pay, driving even the medium-quality goods out as well, until only the cheapest goods are worth manufacturing. For a discussion of this concept, see generally George A. Akerlof, *The Market for 'Lemons' Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970).

144. Robin C. Feldman & Mark A. Lemley, *Do Patent Licensing Demands Mean Innovation?*, 101 IOWA L. REV. 137, 173 (2015).

145. Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 22.

146. *See id.* at 20–22 (discussing companies' tendency to ignore existing patents until confronted with costly litigation).

147. John M. Golden, *Innovation Dynamics, Patents, and Dynamic-Elasticity Tests for the Promotion of Progress*, 24 HARV. J.L. & TECH. 47, 50 (2010).

148. Jonathan M. Barnett, *Property as Process: How Innovation Markets Select Innovation Regimes*, 119 YALE L.J. 384, 390–91 (2009). As Rebecca Eisenberg notes, however, forbearance from enforcement is a troubling thing to rely on because patent owners who don't enforce their patents may ultimately sell those patents to trolls who will. *See* Rebecca S. Eisenberg, *Patent Costs and Unlicensed Use of Patent Inventions*, 78 U. CHI. L. REV. 53, 68 (2011) (identifying entrepreneurs buying up underenforced rights as a potential risk of a patent system with expansive rights combined with underenforcement due to high transaction costs).

growth in private mechanisms like patent pools and standard-setting organization IP rules designed to weaken that protection.[149] A push for patent reform, then, might be seen as the (political) market correcting its own imbalance, leading to a greater equilibrium. Whether that political market is efficient is another matter; balance depends critically on those holding the IP rights and the bargaining power having incentives to get the system right, not simply incentives to engage in greater rent seeking.[150]

There is no question that there are complex and often cross-cutting unobservable effects that factor into what patent cases get filed and what filed patent cases make it to judgment. That said, I do not think selection effects can fully explain the lack of relationship between changes in patent law and litigation data that we saw in Part III. None of these stories offer a prediction that fully explains the litigation data. Indeed, many of the selection effects point in different directions. Further, even insofar as they affect the litigation data, they don't seem to have any obvious effect on the rates of patent applications, on patent issuance, or on patent markets. More sophisticated theories like Golden's can help explain long-term exponential or power-law growth in patenting[151] but cannot explain systematic deviations from those directional measures.[152] Selection effects undoubtedly affect the litigation data we see, but they don't seem to explain away the puzzling insensitivity of fundamental patent metrics to changes in the law.

B. Patents and the Broader Economy

The resilience of patent system data may have more to do with general macroeconomic trends than with changes in the patent system. Patenting may be related to broader trends in economic growth. Economic growth is driven by productivity, and productivity is frequently driven by innovation, so it may make sense that an increase in invention (and therefore an increase

149. Barnett, *supra* note 148, at 391; *see* Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1971 (2002) (identifying standard-setting organizations as an example of mechanisms that weaken protection).

150. Some have argued that the ability to contract around strong property rules is a reason we shouldn't worry about overprotection. Robert P. Merges, *Contracting Into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CALIF. L. REV. 1293, 1295 (1996). As I have shown elsewhere, however, parties can and do contract for more as well as less protection. *See* Mark A. Lemley, *Contracting Around Liability Rules*, 100 CALIF. L. REV. 463, 480–81 (2012) (observing that parties contract for more protections in the context of zero-price liability rules); *cf.* Michael J. Burstein, *Exchanging Information Without Intellectual Property*, 91 TEXAS L. REV. 227, 253–54 (2012) (giving other examples).

151. Golden, *supra* note 147, at 72–76, 82.

152. Further, Golden's theory is at base consistent not with selection effects, but with the idea that the merits don't matter as much as we think they do. *See infra* subpart IV(C).

in patenting) leads to an increase in economic growth.[153] Others have suggested that patent-litigation metrics may be countercyclical: patent owners don't file lawsuits or seek licensing revenue when the size of the pie is growing, but when growth lags and they need additional sources of revenue.[154]

Here too, however, the relationships are likely a lot more complex. Because it takes time between invention and patent filing, and years longer between filing and issuance, we would expect some lag in any effect. In any event, the relationship between patents, industry, and innovation is a complex one.[155] The relationship between innovation and productivity may also be problematic.[156] So patenting may sometimes drive growth, but it may also interfere with it in some circumstances.[157] Further, there is some reason to think that companies are more likely to spend the money on patents when they are doing well, so there may be a causal relationship running in the other direction between growth and patenting.[158] And a recent study suggests that patent litigation is neither entirely cyclical nor entirely countercyclical.[159]

In any event, there doesn't seem to be any obvious unidirectional relationship between patenting and growth. Figure 14 shows the growth rate in patenting since 1960.[160] Between 1960 and 1980, patenting was roughly flat.[161] Starting in the early 1980s, it began to rise at an annualized rate of about 4.4%.[162] By contrast, Figure 15 shows that inflation-adjusted GDP

153. *See* Lance Bachmeier et al., *The Volume of Federal Litigation and the Macroeconomy*, 24 INT'L REV. L. & ECON. 191, 193 (2004) (observing a causal link between "output, consumption and inflation to the total volume of litigation" in the federal system); Golden, *supra* note 147, at 48–50.

154. *See* Bachmeier et al., *supra* note 153, at 193–94 (asserting that shocks to income, consumption, and inflation immediately lead to an increase in the volume of litigation).

155. *See* BURK & LEMLEY, *supra* note 1, at 37–38 (noting that the complex nature of the relationship among the three is industry specific).

156. *See* Bronwyn H. Hall, *Innovation and Productivity* 15–16 (Nat'l Bureau of Econ. Research, Working Paper No. 17178, 2011), http://www.nber.org/papers/w17178.pdf [https://perma.cc/WMM3-3MYX] (noting that while there are substantial positive impacts of product innovation on revenue productivity, the impact of process innovation is more variable and may be negative).

157. *See* BESSEN & MEURER, *supra* note 1, at 92–93 (explaining that the relationship between growth and innovation varies greatly by industry).

158. For discussion of this relationship, see John R. Allison et al., *Software Patents, Incumbents, and Entry*, 85 TEXAS L. REV. 1579, 1609 (2007); Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 TEXAS L. REV. 961, 985–90 (2005).

159. *See* Alan C. Marco et al., *Do Economic Downturns Dampen Patent Litigation?*, 12 J. EMPIRICAL L. STUD. 481, 484 (2015) (finding a complicated relationship that changes over time between economic downturns and patent litigation rates). Specifically, Marco et al. interpret their data as finding that decreases in GDP are correlated with increases in patent litigation, suggesting that litigation is countercyclical, but only once one teases out the role of changes in interest rates. They find that higher interest rates are correlated with decreases in patent litigation. *Id.* at 502–06.

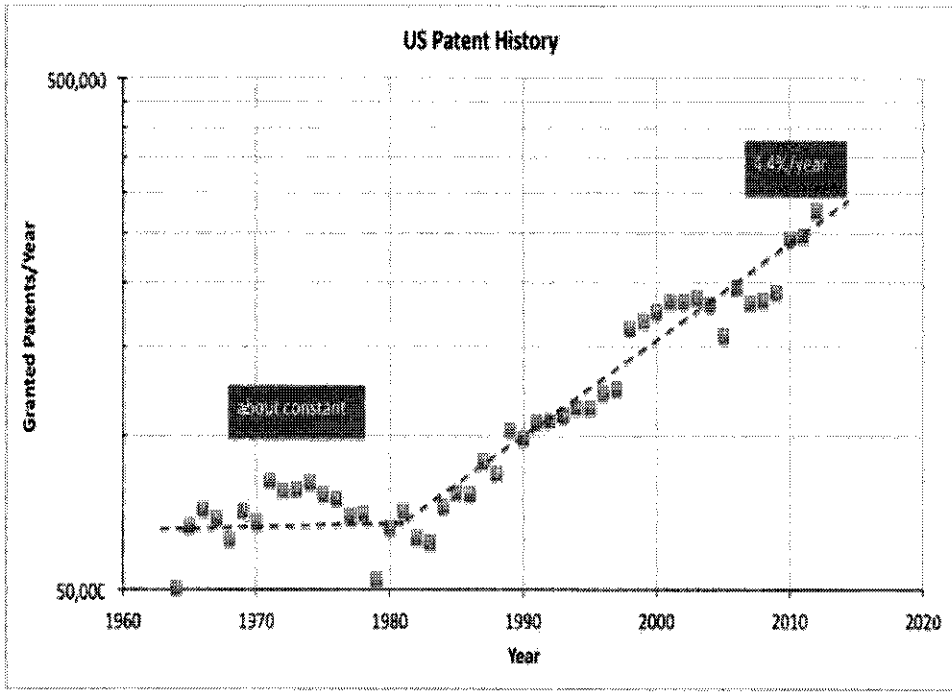
160. *See infra* Figure 14.

161. *Id.*

162. *Id.*

growth since 1960 runs at an annualized rate of 3.4%, at least until the 2007 recession, when it drops to 2.3% per year.[163] The increase in patenting doesn't seem to have any effect on economic growth. Nor does economic growth seem to explain the increase in patenting.

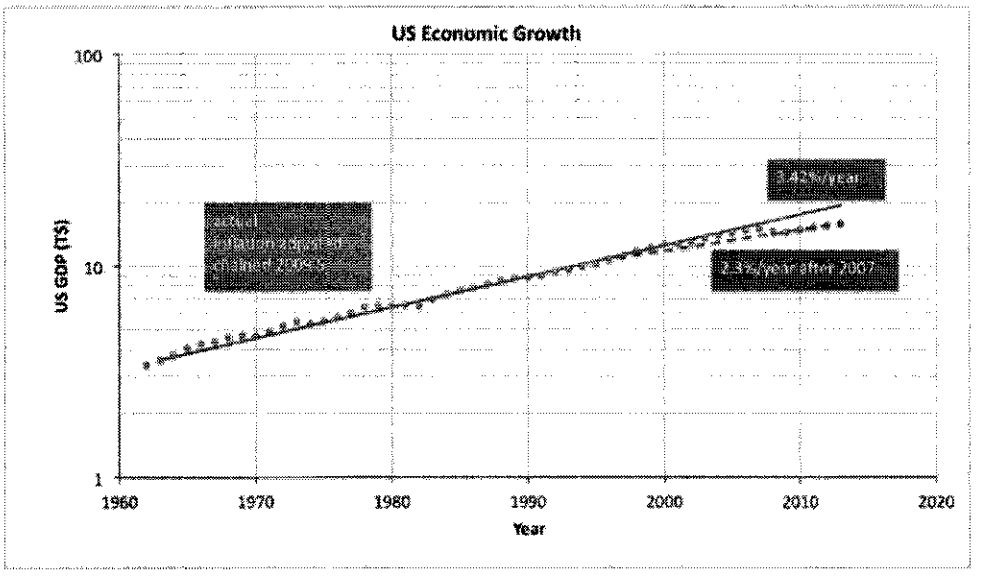
Figure 14[164]
U.S. Patent Grants per Year



163. *See infra* Figure 15.

164. Daniel Dobkin, *Patents and the Concentration of Wealth*, AGAINST MONOPOLY (Sept. 28, 2014, 10:13 AM), http://www.againstmonopoly.org/index.php?perm=805808000000000677 [https://perma.cc/C78H-8UL8].

Figure 15[165]
Economic Growth by Year



165. Daniel Dobkin, *Patents and Economic Growth* AGAINST MONOPOLY (Sept. 20, 2014, 1:36 PM), http://www.againstmonopoly.org/index.php?perm=805808000000000675 [https://perma.cc/MH6P-XT75].

Perhaps patent trends are related to a more direct macroeconomic measure—Research and Development (R&D) spending. In reality, however, that doesn't seem to be entirely true either. R&D has been increasing since the 1950s, though with variations in the rate of increase.[166] The growth rate of R&D was highest in the late 1970s and early 1980s, when patents were weak and the number of patents was not growing dramatically, and in the late 1990s, when patents were strong and the number of patents was growing dramatically.[167] R&D expenditure leveled off in the early 1990s, when patents were getting stronger and the number of patents was growing, and again in the early 2000s, when patents were strong and the number of patents was growing.[168] There seems to be a relationship between R&D expenditure and the economy—R&D expenditure leveled off during recessions[169]—but not a clear relationship to substantive patent law or even to patenting behavior.

To complicate the analysis, we might distinguish between public and private R&D spending, as Figure 16 does. (It's not clear we should; public R&D leads to patenting by universities.)[170] But doing that doesn't change

166. *See infra* Figure 16.

167. *See infra* Figure 16.

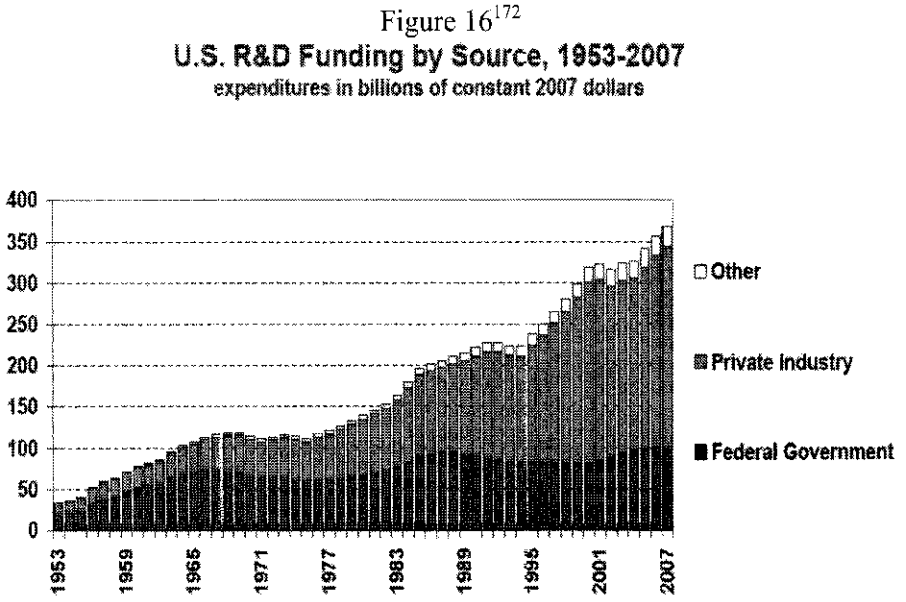
168. *See infra* Figure 16.

169. Kimberly Amadeo, *The History of Recessions in the United States: Causes, Length, GDP. and Unemployment Rates*, THE BALANCE (Sept. 8, 2016), https://www.thebalance.com/the-history-of-recessions-in-the-united-states-3306011 [https://perma.cc/M3WC-NP53].

170. The Bayh-Dole Act of 1980 encourages patenting by universities of federally funded inventions in hopes of increasing technology transfer. *See* Bayh-Dole Act, Pub. L. 96-517, § 6(a), 94 Stat. 3015, 3018 (1980) (codified at 35 U.S.C. § 200 (2012)). See Mark A. Lemley & Robin Feldman, *Patent Licensing, Technology Transfer, and Innovation*, 106 AM. ECON. REV. (PAPERS & PROC.) 188, 189–91 (2016), for a discussion of technology transfer generated by universities. Whether it works is a matter of dispute. *Cf.* Ian Ayres & Lisa Larrimore Ouellette, *A Market Test for Bayh-Dole Patents*, 102 CORNELL L. REV. (forthcoming 2016) (manuscript at 27) (proposing a "market test" mechanism for federally funded inventions to "determine whether exclusive rights are in fact needed for any given invention"). *Compare* Chester G. Moore, Comment, *Killing the Bayh-Dole Act's Golden Goose*, 8 TUL. J. TECH. & INTELL. PROP. 151, 155–56 (2006) (describing the growth in patents issued to universities and companies based on academic discoveries, and new commercial products derived from university licensing), *with* Gary Pulsinelli, *Share and Share Alike: Increasing Access to Government-Funded Inventions Under the Bayh-Dole Act*, 7 MINN. J.L. SCI. & TECH. 393, 410–11 (2006) (highlighting criticisms of the Act, including "double paying, i.e. that the Act allows 'private ownership of patents on inventions created with public funds' that 'the public paid for in the first place"), *and* Rochelle Dreyfuss, *Pathological Patenting: The PTO as Cause or Cure*, 104 MICH. L. REV. 1559, 1565–66 (2006) (book review) (expressing concern that university participation in the patenting process has 'shift[ed] protection from end-products to fundamental relationships of nature"). But, whether or not it works, government R&D funding is driving a significant increase in university patenting. DAVID C. MOWERY ET AL., IVORY TOWER AND INDUSTRIAL INNOVATION: UNIVERSITY INDUSTRY TECHNOLOGY TRANSFER BEFORE AND AFTER THE BAYH-DOLE ACT IN THE UNITED STATES 1–5 (2004). *See generally* Arti K. Rai et al., *University Software Ownership and Litigation: A First Examination*, 87 N.C. L. REV. 1519, 1522, 1526, 1549 (2009) (analyzing the effect of the Bayh-Dole Act on university software patenting); Katherine J. Strandburg, *Curiosity-Driven Research and University Technology*

the result. Inflation-adjusted-government-R&D spending has been roughly constant since the mid-1960s, so the variance is driven almost entirely by private-industry-R&D expenditures.[171]

Figure 16[172]



A second complication is that we might care about R&D spending net of other intrinsic economic growth. (It's not clear that we should; none of our patent measures were GDP adjusted.) Figure 17 shows national R&D expenditures as a percentage of GDP.[173] This does seem to track our assessment of patent merits in part. R&D expenditure as a percentage of GDP declined in the 1970s, when patents were weak, and rose in the 1980s as patents got stronger.[174] But the effect seems driven mostly by a decline in

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Transfer in UNIVERSITY ENTREPRENEURSHIP AND TECHNOLOGY TRANSFER: PROCESS, DESIGN, AND INTELLECTUAL PROPERTY 93, 95 (Gary D. Libecap ed., 2005) (assessing how "technology transfer policies . . . affect the social norms of the research community and the long-term viability of the curiosity-driven research endeavor"). Universities obtained almost sixteen times as many patents in 2003 as they did in 1980. *See* Bernard Wysocki, Jr., *Columbia's Pursuit of Patent Riches Angers Companies*, WALL STREET J. (Dec. 21, 2004), http://www.wsj.com/articles/SB110358988812705478 [https://perma.cc/YTQ9-R3DQ] (reporting that before 1980, universities typically obtained 250 patents, and in 2003 universities earned 3,933 patents).

171. *See infra* Figure 16.

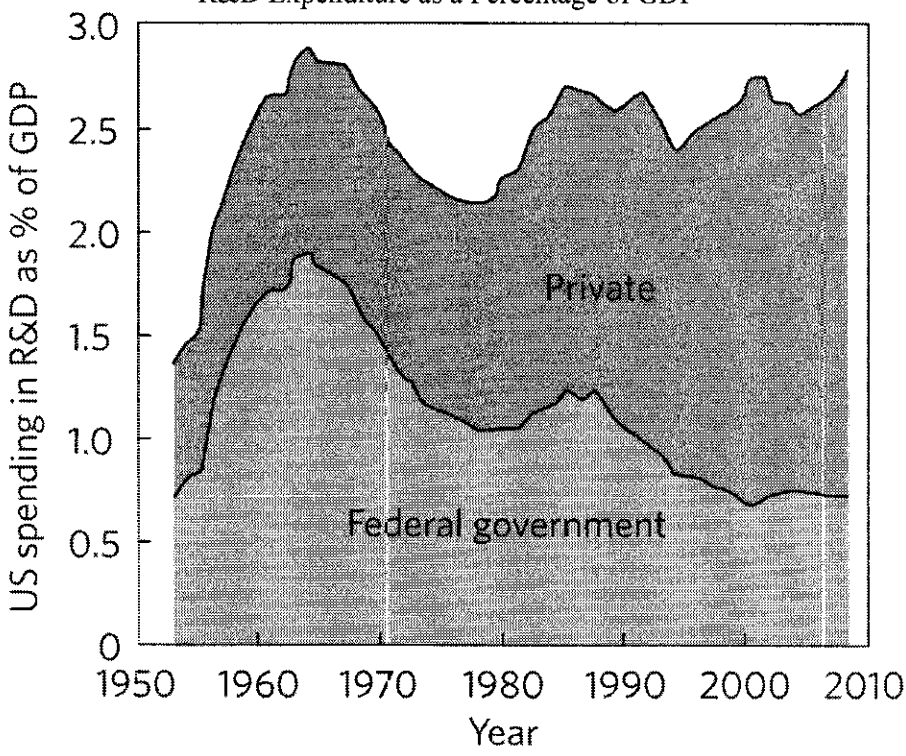
172. Lawrence Hunter, *Where Does the Money For Research Come From?*, U. COLO. DENVER, http://compbio.ucdenver.edu/hunter/cpbs7605/whence%20the%20money.html [https://perma.cc/W6FX-W59T].

173. *See infra* Figure 17.

174. *See infra* Figure 17.

government, not private, expenditure.[175] And private expenditure as a percentage of R&D continued to grow through the 2000s and into the 2010s, even as the substantive strength of patent law ebbed and flowed.[176]

Figure 17[177]
R&D Expenditure as a Percentage of GDP



A final complication is that R&D shouldn't translate immediately into patents. R&D expenditure may only generate inventions some years later, patent applications later still, and issued patents several years later after that.[178] So we might want to shift our curves to see if an investment now in R&D results in patents five or ten years later. Even doing so, however, doesn't seem to align R&D expenditure and the number of patents. On this theory we would have expected to see patent applications drop in the early

175. *See infra* Figure 17.

176. *See infra* Figure 17.

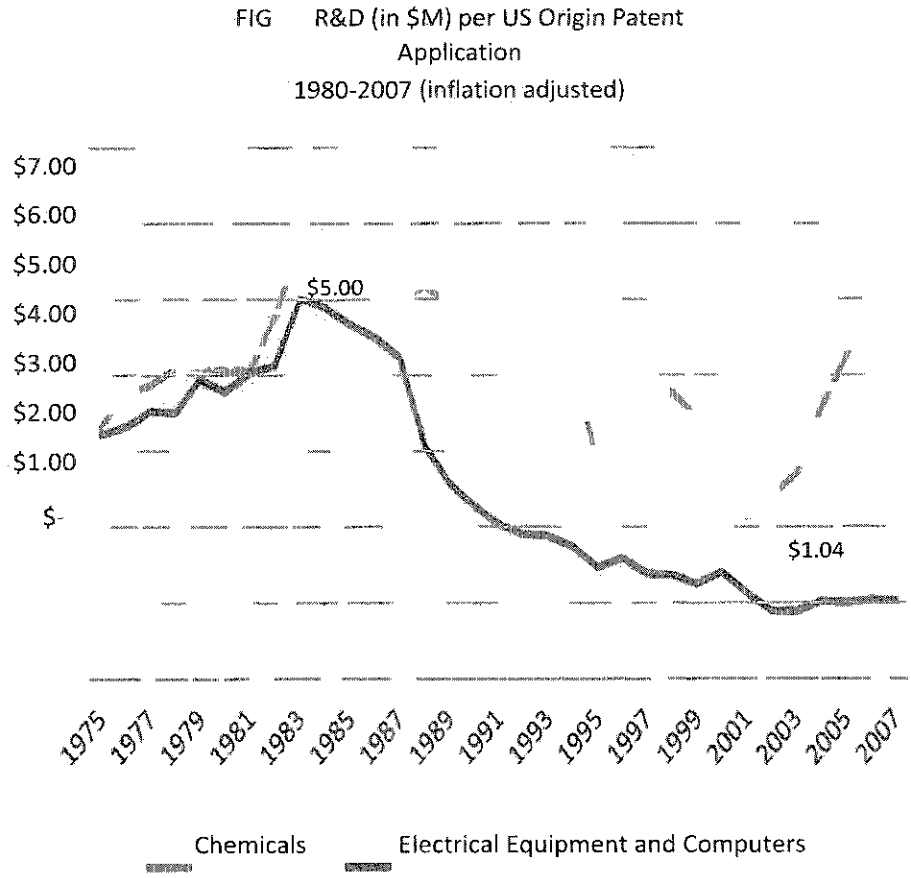
177. Editorial, *Budgeting for the Long Run*, 10 NATURE MATERIALS 407, 407 fig.1 (2011), http://www.nature.com/nmat/journal/v10/n6/pdf/nmat3044.pdf [https://perma.cc/Z3EY-8UV5].

178. *See, e.g.*, John R. Allison & Mark A. Lemley, *Who's Patenting What? An Empirical Exploration of Patent Prosecution*, 53 VAND. L. REV. 2099, 2118 (2000) (documenting the time spent prosecuting patents).

1980s, just when they begin to rise. And the flattening of patent grants in the 2000s doesn't seem to map to any lagged change in R&D expenditure.

Additional evidence that R&D expenditure is not a complete explanation for the resilience of the patent system comes from Colleen Chien, who finds that the number of patents per R&D dollar not only varies by industry but has changed substantially over time, dropping from one patent per $5 million in R&D expenditure in the IT industry to one patent per $1 million in R&D expenditure.[179] By contrast, pharmaceutical patents per R&D dollar fluctuate but end up much where they started three decades before.[180]

Figure 18[181]



179. Colleen Chien, *Comparative Patent Quality* 27, 28 & fig. (Santa Clara Univ. Sch. Law Legal Studies Research Paper Series, Working Paper No. 02-16, 2016); *see infra* Figure 18.

180. Chien, *supra* note 179, at 28 & fig. *see infra* Figure 18.

181. Chien, *supra* note 179, at 28 & fig.

Economic trends in general, and R&D expenditures in particular, certainly should affect the use of the patent system. And I'm sure they do to some extent. But they don't seem to explain the trends we see in patent applications or patent grants. Nor do they tell a clean story about the rise in patent litigation.[182]

C. *Do the Merits Matter?*

Our puzzle remains a puzzle. Why do the fundamental characteristics of the patent system—both patent prosecution and patent litigation—seem largely insensitive to any of the variables that should affect them?

One final possible explanation is that the merits don't matter (or at least don't matter much) to the underlying dynamics of the patent system.[183] Both patent prosecution and patent litigation have their own internal dynamics and justifications, and the reasons people file patents or patent lawsuits may not depend very heavily on the strength of patent rights—at least within limits.

1. Patent Acquisition.—For patent acquisition, this explanation begins with a different puzzle, one long recognized in patent scholarship. While applicants obtain hundreds of thousands of patents per year, spending perhaps $20,000 per application to do so, the vast majority of those patents then disappear from the system.[184] A majority are abandoned for failure to pay maintenance fees that are only a small fraction of the cost of obtaining the patent in the first place.[185] And even the ones that are maintained mostly sit on a shelf.[186] Only 1%–2% of patents are ever litigated, and only a few percent more are licensed for a royalty without ever being litigated.[187]

Scholars have come up with a variety of theories for why people obtain patents and then do nothing with them. Perhaps patents are like lottery tickets, obtained for inventions that are mostly worthless in the hopes of hitting it big with an invention that does take off.[188] Perhaps they are used as

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182. *See* Marco et al., *supra* note 159, at 484 (finding that patent litigation is both part cyclical and part countercyclical).

183. *Cf.* Janet Cooper Alexander, *Do the Merits Matter? A Study of Settlements in Securities Class Actions*, 43 STAN. L. REV. 497, 545–48 (1991) (finding that securities class actions settle for predictable amounts regardless of the strength of the suit).

184. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1498–99, 1503 (2001).

185. *Id.* at 1503 & tbl.3; Kimberly A. Moore, *Worthless Patents*, 20 BERKELEY TECH. L.J. 1521, 1525–26 (2005).

186. Lemley, *supra* note 184, at 1506.

187. *Id.* at 1501, 1503–07.

188. *See* Dennis D. Crouch, *The Patent Lottery: Exploiting Behavioral Economics for the Common Good*, 16 GEO. MASON L. REV. 141, 142, 161–62 (2008) (endorsing the lottery effect as a way to obtain new inventions more cheaply); Mark A. Lemley, Reply, *What's Different About Intellectual Property?*, 83 TEXAS L. REV. 1097, 1102–03 (2005) (decrying the lottery-like nature of

financing mechanisms, encouraging venture-capital investment or acquisition.[189] They may help startups get traction in the marketplace.[190] Perhaps they signal inventiveness or value to others.[191] Perhaps they are marketing devices.[192] Maybe they are vanity projects that make the inventor feel good about herself.[193] Or they may be used by companies to encourage creativity, not in the expected way by providing economic incentives, but by measuring and rewarding creativity within organizations.[194] Finally, as Dan Burk has argued, in the final analysis companies may patent because it is a social norm—something you do to show that you are in the club of responsible, innovative businesses.[195] Jeremy Bock has documented the proliferation of patents resulting from corporate patent-generating practices, including what he calls 'patent harvesting, which 'create[s] an artificial incentive to patent among employee-inventors,'[196] and portfolio management strategies that reward agents for increasing their patent yield every year.[197] Indeed, anecdotal evidence suggests that companies can

IP rights); F. M. Scherer, *The Innovation Lottery*, *in* EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY 3, 16, 19–21 (Rochelle Cooper Dreyfuss et al. eds., 2001) (arguing that the possibility of supercompetitive returns to intellectual property may encourage overinvestment, just as people buy too many lottery tickets because they overstate the chance of a long-odds, high-value return).

189. *See* Stuart J.H. Graham & Ted Sichelman, *Why Do Start-Ups Patent?*, 23 BERKELEY TECH. L.J. 1063, 1067 (2008) (finding that some patentees secure a patent to improve chances of investment or acquirement); Mark A. Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J. SMALL & EMERGING BUS. L. 137, 143–44 (2000) (describing the positive relationship between venture-capitalist financing and patenting); Mann, *supra* note 158, at 974–78 (examining why venture capitalists analyze a company's patent portfolio when assessing its value).

190. *See* Joan Farre-Mensa et al., *The Bright Side of Patents* 2 (U.S. Patent & Trademark Office, Working Paper No. 2015-5, 2015).

191. Clark D. Asay, *The Informational Effects of Patent Pledges*, *in* GLOBAL PERSPECTIVES ON PATENT LAW'S PRIVATE ORDERING FRONTIER (Jorge L. Contreras & Meredith Jacob eds., forthcoming 2016) (manuscript at 6) http://ssrn.com/abstract=2607612 [https://perma.cc/S83A-7MSJ]; Clark D. Asay, *The Informational Value of Patents*, 31 BERKELEY TECH. L.J. 259, 276 (2016); Colleen V. Chien, *Exclusionary and Diversionary Levers in Patent Law*, S. CAL. L. REV. (forthcoming 2016) (manuscript at 9), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2624692 [https://perma.cc/2ATN-TCRN] (noting that patents 'create 'prospects' that facilitate efficient investments in innovation"); Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 651 (2002).

192. Ann Bartow, *Separating Marketing Innovation from Actual Invention: A Proposal for a New, Improved, Lighter, and Better-Tasting Form of Patent Protection*, 4 J. SMALL & EMERGING BUS. L. 1, 3 (2000).

193. *See id.* (observing that some patents are filed without a commercial reason or expectation).

194. Stephanie Plamondon Bair, *The Psychology of Patent Protection*, 48 CONN. L. REV. 297, 314–16 (2015).

195. Dan L. Burk, *On the Sociology of Patenting*, 101 MINN. L. REV. (forthcoming 2016) (manuscript at 14–15), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2740947 [https://perma.cc/5ZYD-FDTY].

196. Jeremy W. Bock, *Patent Quantity*, 38 U. HAW. L. REV. (forthcoming 2016) (manuscript at 24), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2686255 [https://perma.cc/ZG8K-E7NQ].

197. *Id.* (manuscript at 27).

significantly increase the number of patent applications they file without changing their investment in R&D merely by changing the way engineers interact with lawyers.[198]

What these alternative explanations for patenting have in common is that they don't depend very much on the substantive patent law or changes in the strength of patent rights. A company that patents because its peers or its venture capitalists expect it to won't care very much how easy it is to get an injunction after trial or whether plaintiffs who file frivolous suits may have to pay their adversaries' attorneys' fees. They may care more about changes that affect patent validity, but only if those changes are so dramatic as to prevent them from patenting at all. And they rarely are. An inventor who wants a patent and is willing to narrow her claims can usually get one.[199]

We do see fluctuations in patent grant rates. But the best explanation for those fluctuations seems to be changes in attitudes at the PTO, not behavior by patent applicants.[200] It is patent politics, not differences in the nature of inventions or research or the details of patent doctrine, that seems to drive patent filings and patent grants. That is consistent with the hypothesis that the merits don't matter to most patent applicants. They file patent applications because they want patents. And in the aggregate, they seem to want patents without much concern for how strong those patents will be.

This doesn't mean, of course, that patent strength doesn't matter at all for patent acquisition. There is empirical evidence that changes in patent rules can have modest but statistically significant effects on who obtains patents and how many they obtain.[201] David Abrams, for example, finds that the lengthening of effective patent terms when the United States adopted the twenty-year patent term in 1995 led to increases in patenting in those industries that received longer patent terms.[202] And Abrams and Polk

198. I am indebted to Doug Melamed for this point.

199. *See* Lemley & Sampat, *supra* note 7, at 182, 202 (finding that approximately three-fourths of applications result in at least one patent and that it is common to require an applicant to narrow her claims).

200. *See supra* notes 85–94 and accompanying text; *see also* Michael D. Frakes & Melissa F. Wasserman, *Patent Office Cohorts*, 65 DUKE L.J. 1601, 1605 (2016) (finding that the political environment at the PTO when an examiner was hired can influence her examination style and likelihood of granting patents, and that style persists even as administrations change); Katherine J. Strandburg et al., *Patent Citation Networks Revisited: Signs of a Twenty-First Century Change?*, 87 N.C. L. REV. 1657, 1660 (2009) (finding based on patent-citation networks that the PTO was laxer in issuing patents in the 1990s but began tightening up its standards by 2000).

201. Indeed, Michele Boldrin and David Levine summarize the empirical evidence as finding "weak or no evidence that strengthening patent regimes increases innovation; [the empirical studies] find evidence that strengthening the patent regime increases patenting!' MICHELE BOLDRIN & DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY 192 (2008).

202. *See* David S. Abrams, *Did TRIPS Spur Innovation? An Empirical Analysis of Patent Duration and Incentives to Innovate*, 157 U. PA. L. REV. 1613, 1635 (2009) (finding an increase in

Wagner find, based on evidence from Canada, that changes in who gets patents in a priority contest can change who applies for patents.[203] Rather, the point is that the changes we have seen in the law in the past forty years don't seem to have a major impact on either patent applications or patent issuance.

Perhaps the explanation is just that the changes seem dramatic to a patent lawyer but aren't actually all that significant in the overall scheme of things. A large-enough change in patent rights might still affect patent acquisition. If the world were convinced patents were never enforceable, it is likely that fact would influence some of the nonenforcement justifications for obtaining patents. Venture capitalists might choose other measures of innovation prowess, as would those who hold onto patents as lottery tickets. One might argue that this was true in the 1970s, before the creation of the Federal Circuit. Evidence for this hypothesis comes from work by Josh Lerner and Petra Moser, both of whom find that strengthening IP rights from a very weak baseline can drive patenting behavior but find less evidence of an effect once rights are already relatively strong.[204] But if that is right, it suggests that while resilience has its limits, those limits are pretty forgiving. The changes we have seen in the past forty years have had marginal effects but not enough to change the basic trends in patent application and issuance.

2. Patent Enforcement.—If you find it somewhat surprising that the merits don't seem to matter much to decisions to obtain patents, it should be

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patenting for patent classes with longer terms after the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)). It is worth noting, however, that most patentees thought the result of TRIPS would be to reduce, not increase, patent term, leading many of them to file their applications before the law took effect. I predicted at the time that it would increase patent term, Mark A. Lemley, *An Empricial Study of the Twenty-Year Patent Term*, 22 AIPLA Q.J. 369, 371 (1994), and that turned out to be correct. *See* Carlos J. Serrano, *The Dynamics of the Transfer and Renewal of Patents* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 13938, 2008) (concluding that the high number of patent transfers indicates considerable market benefits).

203. *See* David S. Abrams & R. Polk Wagner, *Poisoning the Next Apple? The America Invents Act and Individual Inventors*, 65 STAN. L. REV. 517, 521–22 (2013) (finding that changes in priority rules caused a decline in patents granted to individuals). Again, however, it is worth noting that what people believed would result from the move to first-to-file and what actually did were not the same. *See* Mark A. Lemley & Colleen V. Chien, *Are the U.S. Patent Priority Rules Really Necessary?*, 54 HASTINGS L.J. 1299, 1300 (2003) (finding that small inventors did not in fact benefit from the old first-to-invent rules). In the TRIPS case, the realities of patent term seem to have trumped expectations, while in the first-to-file case the expectations seem to have trumped reality.

204. *See* Josh Lerner, *150 Years of Patent Protection* 5–7 (Nat'l Bureau of Econ. Research, Working Paper No. 7478, 2000), http://www.nber.org/papers/w7478 [https://perma.cc/63NU-SXLE] (discussing studies that examined variations in patent systems across various countries); Petra Moser, *Patent Laws and Innovation: Evidence from Economic History* 2 (Nat'l Bureau of Econ. Research, Working Paper No. 18631, 2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2192804 [https://perma.cc/7MR8-S99M] (observing that stronger patent protections facilitate innovations in early generations but "may also weaken incentives to invest in research and development for later generations").

all the more surprising that the merits don't seem to matter in patent litigation. While inventors may file patents for reasons that have little to do with their strength or enforceability in court, surely they file patent *lawsuits* because they hope to win and enforce those patents in court.

But maybe not. We know that the overwhelming majority of patent lawsuits (85%–90%) settle before a merits decision.[205] Even more settle after a ruling on summary judgment or during trial.[206] While the Priest–Klein hypothesis is that those cases settle because the parties know who is likely to win, so the settlement is determined by the merits of the dispute, that may not always be true. Some—indeed, most—patent plaintiffs may file suit not because they hope the court will give them what they want, but because the act of filing a lawsuit itself may give them what they want, win or lose. Why might this be true? Consider four classes of cases.

First, some patent plaintiffs seek to use the high cost and uncertainty of patent litigation to coerce a nuisance-value settlement. These so-called bottom-feeder patent plaintiffs[207] know that litigating a patent case all the way to judgment can take two to four years[208] and cost over $5 million on average in legal fees.[209] They file suit against multiple defendants and then seek a quick settlement, often on the order of $50,000 or $100,000, sometimes more, but always less than the millions of dollars it would cost to defeat the patent in court.[210] The bottom-feeder model is profitable because it is rational for defendants to pay a small price to settle rather than pay a larger price to invalidate the patent. Invalidating the patent benefits their competitors, who can free ride on the service the challenger provided.[211] Settling gets the challenger the same benefit at a fraction of the cost and without helping its competitors.[212] We don't know how many cases fit the

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205. *See* Allison et al., *supra* note 109, at 1773 n.23; John R. Allison et al., *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO. L.J. 677, 680 (2011) (finding that most patent cases settle).

206. Allison et al., *supra* note 109, at 1790.

207. Lemley & Melamed, *supra* note 13920, at 2126.

208. Mark A. Lemley, *Where to File Your Patent Case*, 38 AIPLA Q.J. 401, 416 tbl.6 (2010).

209. AM. INTELLECTUAL PROP. LAW ASS'N, REPORT OF THE ECONOMIC SURVEY 2015, at 30 (finding that large patent cases cost a median of $5.5 million per side in legal fees to take to trial).

210. Lemley & Melamed, *supra* note 139, at 2126; *see, e.g.*, SFA Sys. L.L.C. v. Newegg Inc., 793 F.3d 1344, 1350–51 (Fed. Cir. 2015) (reviewing a case where the plaintiff was accused of having such a litigation strategy). To the extent it is relevant, I represented Newegg in this case.

211. Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 943, 952 (2004); Roger Allen Ford, *Patent Invalidity Versus Noninfringement*, 99 CORNELL L. REV. 71, 110 (2013); John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 333.

212. To be sure, one risk of settling is that, while the case before you is cheaper, other patent trolls may be more likely to sue you once they know you will pay them to go away. Some companies, like Newegg, have sought to develop a reputation for being unwilling to pay nuisance-

bottom-feeder model, but it is a significant number. Nonpracticing entities represent more than 60% of patent lawsuits today.[213] and bottom-feeder suits are the most common type of troll suit.[214]

Second, at least some competitor cases are filed not because the patentee hopes to win in court, but because the very act of filing the lawsuit will disadvantage a competitor. Large companies can sometimes drive a small upstart competitor out of business by imposing litigation costs on them.[215] I have personally represented companies that gave up and quit a business because they couldn't afford to continue fighting. Further, venture capitalists and acquisition partners are reluctant to fund a company being sued, both because of worries about whether the suit will shut the business down and because they don't want their money being spent on lawyers rather than engineers.[216] Further, a patent lawsuit may scare off potential customers, particularly if (as often happens) the plaintiff notifies the customers of the suit or even sues the customers themselves.[217] Even if it doesn't drive a company out of business altogether, a lawsuit represents a significant disruption to a growing business, taking business and engineering staff away from work to be deposed, search for documents, and testify.[218] Ted

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value settlements. Ivan Barajas, *When Will Patent Trolls Learn Not to Mess with Newegg?*, UNSCRAMBLED (May 22, 2014), http://blog.newegg.com/patent-trolls-learn-mess-newegg/ [https://perma.cc/4H5U-AZNR].

213. Lemley & Miller, *supra* note 138.

214. Lemley & Melamed, *supra* note 13920, at 2126; *see also* FEDERAL TRADE COMM'N, PATENT ASSERTION ENTITY ACTIVITY: AN FTC STUDY 47 (2016), https://www.ftc.gov/system/files/documents/reports/patent-assertion-entity-activity-ftc-study/p131203_patent_assertion_entity_activity_an_ftc_study_0.pdf [https://perma.cc/D87H-FW55] (finding that most litigation is initiated by "litigation PAEs" that settle for $300,000 or less).

215. *See, e.g.*, Ted Sichelman, *The Vonage Trilogy: A Case Study in 'Patent Bullying*, 90 NOTRE DAME L. REV. 543, 551 (2014) (discussing Sprint, Amazon, and AT&T's filing of suit against Vonage to sink the upstart competitor).

216. *See* Robin Feldman, *Patent Demands & Startup Companies: The View from the Venture Capital Community*, 16 YALE J.L. & TECH. 236, 243 (2014) (surveying venture capitalists and finding that "100% of venture capitalists indicat[ed] that if a company had an existing patent demand against it, they might refrain from investing"); Stephen Kiebzak et al. The Effect of Patent Litigation and Patent Assertion Entities on Entrepreneurial Activity 36 (June 16, 2015) (unpublished manuscript), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457611 [https://perma.cc/TLP9-Z433] (finding that litigation by patent trolls reduces venture-capital investment in startups).

217. *See* Gaia Bernstein, *The Rise of the End User in Patent Litigation*, 55 B.C. L. REV. 1443, 1456 (2014) (noting the increasing prevalence of patent litigation against customers or "end users"); Colleen Chien & Edward Reines, *Why Technology Customers Are Being Sued En Masse for Patent Infringement and What Can Be Done*, 49 WAKE FOREST L. REV. 235, 245–46 (2014) (discussing how patent suits involving customers can disrupt business relations with customers); Brian J. Love & James C. Yoon, *Expanding Patent Law's Customer Suit Exception*, 93 B.U. L. REV. 1605, 1613 (2013) (discussing the potential loss of goodwill and future business resulting from a failure to defend customers entangled in patent lawsuits).

218. *Cf.* Lemley & Melamed, *supra* note 13920, at 2161–63 (discussing the dangers of competitor suits brought to harass competition).

Sichelman refers to this practice as 'patent bullying.'[219] It is hard to know how widespread it is, but it may be a significant factor in both cases in which large companies sue small startups and in which small companies sue their start-up competitors. Colleen Chien has found that these cases together account for 24% of patent lawsuits.[220] And the sizeable number of default judgments and injunctions by consent decree suggest that this strategy is frequently effective.[221] Indeed, Alberto Galasso and Mark Schankerman find that invalidating patents owned by large incumbents triggers more follow-on innovation by small firms.[222]

Third, litigation between large companies with significant patent portfolios may not be motivated by a desire to win but may instead be an extension of license negotiation by other means. When large companies sue other large companies, they run the risk that each may be held to infringe the other's patents.[223] The result is a sort of mutually assured destruction that tends to deter those companies from taking their cases to judgment.[224] Why then file suit at all? One reason may be that doing so signals seriousness in

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219. Sichelman, *supra* note 215, at 550–53.

220. Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1587, 1589, 1603 tbl.5 (2009) (defining "patent predation" as a situation in which large companies sue financially disadvantaged companies and "limited stakes" litigation as being between small- and medium-sized firms and finding that these types of suits combined make up 24% of patent suits). Notably, the America Invents Act changed the rules in 2011 to prevent naming multiple defendants in the same lawsuit in most circumstances. Leahy–Smith America Invents Act, Pub. L. No. 112-29, § 1(a), 125 Stat. 284, 284 (2011) (codified as amended 35 U.S.C. § 299(b) (2012)). The result was to increase the percentage of suits filed by patent trolls, who tend to sue many defendants at a time. *See* Chien, *supra*, at 1604 (noting that even in the mid-2000s, trolls accounted for 17% of suits but 36% of defendants sued). That number has increased since, and is now a majority by most counts (and depending on how one defines a patent troll). Cotropia et al., *supra* note 11, at 655; Feldman et al., *supra* note 15, at 7 (finding that "patent monetization entities [i.e. trolls] filed 58.7% of the patent lawsuits in 2012").

221. LEX MACHINA, *supra* note 9. Lex Machina data reports that, as of September 9, 2016, 3,202 of the 53,009 terminated patent cases since 2000, or approximately 6%, resulted in an entered consent or default judgment for the plaintiff. That probably significantly understates the number of defendants who cave in because they cannot afford to litigate a case to judgment, no matter how confident they are they would win. I have personally represented at least three such defendants in my litigation career.

222. Alberto Galasso & Mark Schankerman, *Patents and Cumulative Innovation: Causal Evidence from the Courts*, 130 Q.J. ECON. 317, 321–22 (2015).

223. An extreme example is patent litigation between Motorola and Hitachi in Texas in 1990. Each side sued the other for infringement of various patents. The district judge granted an injunction shutting down both parties' products. Needless to say, the parties quickly settled and asked the court of appeals to stay the injunctions while they did so. Andrew Pollack, *Motorola and Hitachi in Accord*, N.Y. TIMES, June 26, 1990, http://www.nytimes.com/1990/06/26/business/motorola-and-hitachi-in-accord.html [https://perma.cc/N532-ECDV].

224. Allison et al., *supra* note 133, at 468–69 ("The result is a sort of 'mutually assured destruction' in which very few companies [in the semiconductor industry] actually sue for patent infringement because they know that, if they do, their opponents will also be able to sue them for patent infringement."); Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 34–35 (2005).

a license negotiation and can bring a recalcitrant negotiating partner to the table or result in a more favorable license.[225] These patentees aren't suing because they want to win but because they want a business outcome somewhat more favorable than the one they would get without using litigation as a tool.[226]

Finally, in the life sciences, the fact of filing a lawsuit can itself have significant regulatory effects on the ability of competitors to enter the market. Under the Hatch–Waxman Act, a patent plaintiff who sues a putative generic entrant is entitled to an automatic thirty-month stay of the Food and Drug Administration's approval of the generic's application to enter the market.[227] In effect, this rule means that pharmaceutical and biotechnology companies can obtain an automatic preliminary injunction simply by filing a lawsuit, no matter how little merit the suit has. Even after that stay expires, generic companies are frequently reluctant to enter the market 'at risk' until the patent lawsuit is resolved.[228] The result is that patent lawsuits in the life sciences (which account for 25.3% of all suits)[229] buy pharmaceutical and biotechnology patent owners years of insulation from competition whether or not they go to trial. Patent owners regularly seek to extend that advantage by paying their generic competitors to stay out of the market rather than litigating the case to judgment or by 'product hopping'—switching formulations of their drug to take advantage of multiple thirty-month stays.[230]

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225. *See, e.g.*, Pollack, *supra* note 223 (reporting on a multi-suit patent dispute between Motorola and Hitachi that analysts predicted would end in a licensing deal because of the increased pressure for both parties to reach an agreement outside of court).

226. *See, e.g.*, C. Scott Hemphill & Mark A. Lemley, *Earning Exclusivity: Generic Drug Incentives and the Hatch–Waxman Act*, 77 ANTITRUST L.J. 947, 959–60 (2011) (describing litigants' repeated use of the Hatch–Waxman Act's automatic thirty-month stay of the Food and Drug Administration approval of generic drugs to achieve favorable business outcomes).

227. Drug Price Competition and Patent Term Restoration (Hatch–Waxman) Act of 1984, Pub. L. 98-417, § 101, 98 Stat. 1585, 1589 (codified as 21 U.S.C. § 355(j)(5)(B)(iii) (2012)). For a criticism of this system, see Hemphill & Lemley, supra note 209 (arguing that the thirty-month stay is vulnerable to manipulation).

228. *See, e.g.*, Joseph M. O'Malley, Jr. et al., *Failure to Launch*, INTELL. PROP. MAG., Apr. 2011, at 30, 30 (describing at-risk generic launches as "rare").

229. Allison et al., *supra* note 131, at 1095 tbl.2 (finding that 11.6% of suits are in the pharmaceutical industry, 10.5% in the medical-device industry, and 3.2% in the biotechnology industry).

230. *See, e.g.*, FTC v. Actavis, Inc., 133 S. Ct. 2223, 2227 (2013) (holding reverse-payment settlements potentially unlawful); New York *ex rel.* Schneiderman v. Actavis PLC, 787 F.3d 638, 643, 659 (2d Cir. 2015) (holding product hopping unlawful). For discussions of product hopping, see 1 HERBERT HOVENKAMP ET AL., IP AND ANTITRUST §15.3c1 (2d ed. 2009); Stacey L. Dogan & Mark A. Lemley, *Antitrust Law and Regulatory Gaming*, 87 TEXAS L. REV. 685, 709–17 (2009). For discussions of reverse payments, see generally Michael A. Carrier, *Unsettling Drug Patent Settlements: A Framework for Presumptive Illegality*, 108 MICH. L. REV. 37 (2009); C. Scott Hemphill, *Paying for Delay: Pharmaceutical Patent Settlement as a Regulatory Design Problem*, 81 N.Y.U. L. REV. 1553 (2006); Herbert Hovenkamp et al., *Anticompetitive Settlement of*

What is notable about each of these strategies is that the patentee can get what they want—money, a competitive advantage, regulatory insulation from generic competition—without ever taking the case to judgment. For that reason, changes in the strength of patent rights are largely irrelevant to all three classes of suit. As long as the fundamental economics of patent litigation remain unchanged, bottom-feeders will use the system to collect nuisance-value settlements, bullies will use the system to impose costs on competitors,[231] and big companies will use litigation as a form of license negotiation. As long as the regulatory framework stays the same, pharmaceutical plaintiffs will file patent suits no matter how weak the merits of the claim might be. For all of these reasons, most patent litigation, like most patent prosecution, may be driven by incentives to which the actual merits of the patent are only incidental.

But what of the small subset of cases that does go to judgment? The most difficult fact to explain about the resilience of the patent system is the unchanging nature of invalidity and overall patentee win rates. As noted above, I think selection effects can play some role here.[232] Parties may choose to take different cases to trial or judgment in a world where patents are strong than where they are weak, creating an equilibrating tendency. But I don't think that's the whole explanation. A complementary possibility is that the subset of filed cases that goes to judgment is essentially random. If patentees sue for reasons other than seeking a judgment but can't cow their competitors or settle their disputes in ways that get what they want, their cases will go to trial or judgment not because of a conscious plan but because the settlement didn't work out. If the selection of which cases make it to judgment is not conscious but largely an accident, it shouldn't surprise us that win rates don't vary that much with changes in patent doctrine. The percentages may reflect the long-term average of cases randomly (or at least stochastically) selected for judgment: patents are held valid somewhat more

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Intellectual Property Disputes, 87 MINN. L. REV. 1719 (2003); Aaron Edlin et al., *Activating Actavis*, ANTITRUST, Fall 2013, at 16, 16).

231. One important caveat concerns substantive changes to patent law that also affect the cost and uncertainty of litigation. For instance, in the wake of the Supreme Court's decision in *Alice*, it not only became easier to invalidate certain software and business-method patents than it was before, but it also became possible to do so earlier in the litigation process, often on a motion to dismiss. *See, e.g.*, OIP Techs., Inc. v. Amazon.com, Inc. 788 F.3d 1359, 1362, 1364 (Fed. Cir. 2015) (applying *Alice* and affirming the district court's grant of a motion to dismiss due to the patent's subject-matter ineligibility); buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1351, 1355 (Fed. Cir. 2014) (applying *Alice* and affirming the district court's grant of judgment on the pleadings in favor of the defendant because the patent claims were invalid). The possibility of winning a case on an early motion before spending much money should change the incentive to file those cases for process reasons, or at the very least should change how much money bottom-feeders can demand.

232. *See supra* subpart IV(A).

often than not, whether because of the presumption of validity[233] or because the PTO weeds out some bad patents. But the overall patentee win rate is low because of the fractioning of patent law: patent litigation involves multiple issues, and the patentee generally must win all of them to prevail in court.[234]

Again, my point is not that changes in the strength of patent laws could never have an effect on patent litigation patterns. After all, there was one fundamental shift in modern history—from a roughly 35% validity rate in the 1970s to a 55% rate thereafter—that arguably was driven by substantive changes in patent law.[235] And there is certainly evidence that outcomes on individual legal issues change as a result of changes in doctrine.[236] Rather, the point is that however dramatic the changes in patent doctrine seem to those of us inside the system, they don't seem to be enough to change the overall dynamics of the system. As with patent acquisition, resilience may have its limits, but those limits seem to be pretty broad.

D. Does Patent Law Matter?

The most likely explanation for the surprising resilience of the patent system, then, is that the substantive and procedural changes we have seen in the last forty years simply don't matter much to the ordinary operation of patent law. That seems to be true with respect to the acquisition of patents, which occurs for reasons largely unrelated to the substantive law that would govern those patents were they to end up in court. More surprisingly, it seems to be true even of patent litigation, which is increasingly driven by economic factors that don't much depend on the substantive merits of patent law. As Tim Holbook and Mark Janis observe, the fact is that changes in legal doctrine, while theoretically designed to affect *ex ante* incentives, are largely

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233. Microsoft Corp. v. i4i Ltd. P'ship, 564 U.S. 91, 95 (2011) (reaffirming that patents can be invalidated only on a showing of clear and convincing evidence). For a critique of the presumption of validity, see generally, Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45 (2007) (arguing that that presumption is unwarranted). This theory cannot explain why there was a long-term, significant increase in validity rates from the 1970s to the modern era. Allison & Lemley, *supra* note 36, at 206.

234. Lemley, *supra* note 112, at 508.

235. *See supra* note 36 and accompanying text. Even that is open to question. It may be that the creation of the Federal Circuit changed the litigation dynamic significantly. Alternatively, it may be that procedural changes such as the rise of the jury trial in patent cases changed the validity results. Lemley, *supra* note 25, at 1704–12.

236. *See, e.g.*, Cotropia, *Nonobviousnes*, *supra* note 31, at 913, 944, 952–53 (2007) (suggesting that the *KSR* decision may be a factor in changing the willingness of the Federal Circuit to find patents obvious); Scott Flanz, Octane Fitness*: The Shifting of Patent Attorneys' Fees Moves Into High Gear*, 19 STAN. TECH. L. REV. 332, 358–62 (2016) (confirming empirically that *Octane*'s "reinterpretation of § 285 has had observable effects").

unknown, or simply irrelevant to the way inventors and companies act in the real world.[237]

If I'm right in these explanations, what does that mean for the world? I can see three possible implications, which I will call the good, the bad, and the ugly.

1. Good: The Sky Isn't Falling.—First, the good news: we are unlikely to break the patent system, whether by passing patent reform legislation or by failing to pass it. Much of the academic and policy debate over patent law in the past twenty years has focused on the relative dangers of overprotection and underprotection. Both sides have worried that changes to the patent system will kill the goose that laid the golden egg, retarding, rather than promoting, innovation. Those who worry about overprotection fear that patent trolls will impose a tax on true innovators and that too many strong patent rights will make cumulative innovation and bringing products to market harder.[238] Those who (more recently) worry about underprotection tout the U.S. patent system as the primary reason for our national lead in innovation, and fear that weakening that system will discourage invention and prevent good ideas from getting to market.[239]

The evidence, however, suggests that both of these concerns are overblown. Radical changes in both patent substance and procedure that strengthened the hand of patent owners during the 1980s and 1990s and brought us a deluge of patent trolls didn't break the patent system, worries about the patent crisis notwithstanding. Indeed, they didn't seem to have a significant causal effect on patent applications, patent grants, patent lawsuits, or patent judgments.

By the same token, the more recent reforms to the patent system weakening patent rights will also not break the patent system. Indeed, those reforms too don't seem to have much changed the ever-increasing number of patent applications, patent grants, or patent lawsuits. Nor have they reduced patentees' win rate in court or the damage awards they receive when they do win. We don't, of course, know whether the courts and Congress will continue to cut back on the power of patent owners. There is some reason to think the pendulum is slowing down.[240] But previous changes to the

237. Mark D. Janis & Timothy J. Holbrook, *Patent Law's Audience*, 97 MINN. L. REV. 72, 74–75 (2012).

238. *See supra* note 1 and accompanying text.

239. *See supra* note 2 and accompanying text.

240. *See* Norman & Karlin, *supra* note 77 (discussing the collapse of patent reform efforts in 2014 and 2015). The Supreme Court, which has reliably sided with accused infringers for over a decade, has recently issued a string of decisions that support the patent owner. *E.g.*, Commil USA, L.L.C. v. Cisco Sys. 135 S. Ct. 1920, 1928–29 (2015) (holding that a defendant's belief regarding patent validity is not a defense to a claim of induced infringement); Microsoft Corp. v. i4i Ltd.

substance of patent law haven't derailed the patent system. Indeed, they haven't even changed its momentum very much. The same is likely to be true for the foreseeable future. The good news, then, is that the sky isn't falling. We aren't about to destroy the patent system or halt innovation.

That doesn't mean, of course, that nothing we do could destroy (or dramatically improve) the patent system. Perhaps it simply means we haven't been trying hard enough. Some might contest the claim that the changes we have made to the patent system in the last forty years are as dramatic as I suggest. One could imagine more radical changes—a working requirement for patents, or excluding software entirely from patent protection, for instance.[241] We haven't tried those things, so we don't know how the system would react. There may well be limits to the resilience of the system so that too strong or too weak protection could knock the system out of equilibrium. But the sorts of change we have seen in the last several decades, significant as they seem to patent lawyers, don't seem radical enough to bump the patent system out of its established track.

2. Bad: Why Bother With Patent Reform?—It's good to learn that we are unlikely to destroy the patent system or stop the flow of innovation by passing patent reform, or by failing to pass it, or indeed by doing anything else we are likely to do to change the substantive nature of patent law. But it's also a bit depressing. As someone who has devoted my life to the study of IP law and to figuring out ways to improve it, I confess that the resilience of the patent system can sometimes seem like a personal affront—the universe saying to those of us who study patent law, in effect, "Nothing you do matters very much.

That should probably worry more than just people like me who might feel like we can't effect change. Perhaps the lesson is simply that big institutions have a lot of inertia, so it's hard to change their direction. But I don't think the issue here is simply that the policy changes in one direction or another have simply been too small to have a measurable effect. Rather, patent institutions seem to have taken on a life of their own, one largely beyond the reach of the policy levers we employ to try to calibrate innovation incentives. The same may be true of litigation. A strong legal realist theory might conclude that legal doctrines don't matter for case outcomes because judges and juries pick who they want to win regardless of what the law

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P'ship, 564 U.S. 91, 95 (2011) (reaffirming that patents can be invalidated only on a showing of clear and convincing evidence); Global-Tech Appliances, Inc. v. SEB S.A., 563 U.S. 754, 766 (2011) (holding that willful blindness is sufficient to satisfy the scienter requirement of an induced infringement claim). And it did the same in its most recent patent case, decided on June 13, 2016. Halo Elecs. Inc. v. Pulse Elecs., Inc. 136 S. Ct. 1923, 1932–34 (2016) (invalidating the Federal Circuit's *Seagate* test for enhanced damages as unduly restrictive).

241. Or, on the pro-patent side of the ledger, longer patent terms, punitive damages without willful infringement, or limits on the ability to challenge the validity of patents.

says.[242] That could explain the lack of change in litigation outcomes. And if patentees only care about winning, and they are just as likely to win as they were ten or twenty years ago, all the changes in legal doctrine don't matter in the final analysis.

That doesn't mean changes in the law have no effect at all, of course. They change the cost of litigation, and they change who can obtain a patent and whether that patent can be enforced. Changing outcomes for individual inventors and manufacturers is certainly relevant for the parties involved. And there may be a Platonic sense in which we want to get the right outcome for its own sake, both in individual cases and in the overall balance of the system. But it seems that what we think we are doing when we make patent policy—aligning incentives in order to better promote innovation—happens only at the margins, if at all. It may not affect behavior because it doesn't much affect what people get out of the system.

3. Ugly: Why Patent at All?—Whether you think that is good or bad may depend on how you feel about the patent system in its current form. As I have noted elsewhere, persuasive evidence that the patent system drives innovation is surprisingly hard to come by.[243] Some have suggested that it works well in some industries and poorly in others.[244]

The problems with a patent system seemingly impervious to our efforts to manipulate it may go beyond frustration with our inability to effectuate policy levers (or, for those of us who write about patent policy, inability to justify our existence). The patent system is not handed down from on high by some benevolent deity. It is government regulatory policy: an effort to intervene in the free market in order to encourage more invention than we would otherwise have.[245] But if that policy is a good idea, we would expect changes in it to have some measurable effect, if not on innovation directly, at least on the behavior of patent owners and accused infringers. After all, the whole point of the system is to tweak incentives to innovate. If, as it seems,

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242. *See, e.g.*, Brian Leiter, *American Legal Realism*, *in* THE BLACKWELL GUIDE TO THE PHILOSOPHY OF LAW AND LEGAL THEORY 50, 52 (Martin P. Golding & William A. Edmundson, eds. 2005) (presenting "the Core Claim' of American Legal Realism—that, "in deciding cases, judges respond primarily to the stimulus of the facts of the case, rather than to legal rules and reasons").

243. Mark A. Lemley, *Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1334 (2015).

244. BESSEN & MEURER, *supra* note 1, at 14–16, 15 fig.1.1 (arguing that patents enhance social welfare only in the chemical and biomedical industries, not elsewhere). *Cf.* BURK & LEMLEY, *supra* note 1, at 49–65 (noting the industry-specific nature of innovation and the patent system).

245. For a discussion of the patent system as government regulatory policy, see generally Shubha Ghosh, *Decoding and Recoding Natural Monopoly, Deregulation, and Intellectual Property*, 2008 U. ILL. L. REV. 1125; Shubha Ghosh, *Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After* Eldred, 19 BERKELEY TECH. L.J. 1315 (2004); Mark A. Lemley, Response, *Taking the Regulatory Nature of IP Seriously*, 92 TEXAS L. REV. SEE ALSO 107 (2014); Mark A. Lemley, *The Regulatory Turn in IP*, 36 HARV. J.L. & PUB. POL'Y 109 (2013); Ted Sichelman, *Purging Patent Law of "Private Law' Remedies*, 92 TEXAS L. REV. 517 (2014).

the patent system has taken on a life of its own independent of efforts to manipulate it, it is worth asking what good it is doing for society to have the system at all. Is it just another government bureaucracy that exists because it has always existed? A system we keep around, not because the evidence supports it, but because it has become an article of faith?[246]

I think the evidence I discussed above provides a partial answer to this concern. Patent applications may be driven by economic considerations almost entirely independent of the enforceability of the resulting patents. And those patents may in turn facilitate venture financing or technology transfer.[247] If we step back and think about it, it seems a bit odd that people

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246. Lemley, *supra* note 243, at 1334–38 (discussing the implications of the inconclusive empirical evidence on the effectiveness of the IP and patent systems). To be sure, there are nonconsequentialist theories of patent law. *See, e.g.*, ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 3 (2011) (invoking "fundamental rights" to justify patent law). *Cf.* Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 978 (2012) (arguing against exclusive reliance on price, though not necessarily consequentialism). If one subscribes to one of those theories (I don't), I suppose it wouldn't matter whether patents were serving a useful end. The existence of the patent right could be viewed as an end in itself.

247. For a discussion of the impact of patents and technology transfers on competition in the product market, see generally ASHISH ARORA ET AL., MARKETS FOR TECHNOLOGY: THE ECONOMICS OF INNOVATION AND CORPORATE STRATEGY (2001) and Lemley & Feldman, *supra* note 170, at 188–90. New institutional economics theory suggests that patents may affect transactions, causing individuals to organize either within or outside firms depending on the scope of ownership rights. *See, e.g.*, Robert P. Merges, *A Transactional View of Property Rights*, 20 BERKELEY TECH. L.J. 1477, 1479–89 (2005) (arguing that the "transactional role" of property rights deserves increasing attention); Robert P. Merges, *Intellectual Property Rights and the New Institutional Economics*, 53 VAND. L. REV. 1857, 1863–64 (2000) (applying a transaction cost theory to show that patents can have an effect on the way firms structure transactions); *see also* Johnathan M. Barnett, *Intellectual Property as a Law of Organization*, 84 S. CAL. L. REV. 785, 824 (2011) (arguing that patents expand an innovator's transactional opportunities); Dan L. Burk, *Intellectual Property and the Firm*, 71 U. CHI. L. REV. 3, 9 (2004) (arguing that the exclusive property rights in patents might prevent opportunism and promote coordination of intangible resources in transactions). *Cf.* Jonathan S. Masur, *Patent Liability Rules as Search Rules*, 78 U. CHI. L. REV. 187, 187 (2011) ("The infringement doctrines allocate search responsibilities (and search costs) among the same parties. The rules governing patent liability are also rules that govern patent search. The explanation lies with the incentives that these rules create for parties to learn of patents (and infringing goods) earlier or later in time."). Whether increasing the number of transactions is itself desirable is a contested proposition, however. *See* Michael J. Burstein, *Patent Markets: A Framework for Evaluation*, 47 ARIZ. ST. L.J. 507, 512 (2015) ("[T]ransactional efficiency in itself is neither the goal of the patent system nor of financial markets."); Robert P. Merges, *The Trouble with Trolls: Innovation, Rent-Seeking, and Patent Law Reform*, 24 BERKELEY TECH. L.J. 1583, 1603 (2009) ("[I]t is quite apparent that we should not be blinded by fears of shutting down or regulating an existing market. The market for patents unrelated to innovation adds nothing to overall social welfare. Rent seekers who employ patents are often said to engage in a form of extortion. When a charge like this is true, conventional wisdom suggests only one efficient (and proper) course of action: shutting the socially wasteful market down." (footnote omitted)). As Rochelle Dreyfuss notes,

> [t]he result is a vicious cycle. The better patents are at protecting investments in innovation, the more firms rely on patents; the more evident it is that patents are good sources of income, the more they are used as investment vehicles. As the thicket of

would transact on the basis of patents without regard to the intrinsic value of those patents, but in some sense many markets—from tulips to gold to the stock market—share that fundamental characteristic. There is no underlying intrinsic value for which people are paying; the asset is valuable because, and only to the extent that, people *think* it is valuable.[248] That probably ought to make us worry about the stability of any of those markets, but most of them, including patents, have shown a fair bit of stability over the past several decades.[249] And if the market values patents for patents' sake, using them as markers of innovation or trading chits, we ought to be hesitant to disrupt that value by eliminating the patent system, even as we seemingly need not worry too much about disrupting that value by making changes to the patent system.

The same cannot be said for patent litigation, however. Obtaining patents in order to use them as market assets might be socially beneficial and in any event is largely costless to third parties. Suing third parties, by contrast, is not. Of the four reasons people litigate patent cases other than to win on the merits, three (nuisance-value settlements, bullying, and regulatory gaming) are actively socially harmful. The patent-litigation system imposes substantial costs on third parties, and most of those third parties are themselves innovators. It may be worth paying those costs if there is evidence that patent litigation is supporting new invention. But absent that evidence, the patent-litigation system looks more and more like a drag on society. Sure, it generates patent licenses in the form of settlements of lawsuits. But in the absence of technology transfer, those licenses are not beneficial to society.[250] And there doesn't seem to be much evidence in most industries that the ability to enforce a patent in court translates into greater invention or innovation.[251]

> rights grows, it becomes harder to maneuver without attracting litigation. Since the best defense is often a good offense, firms patent to the hilt, creating a base for even more suits.

Dreyfuss, *supra* note 170, at 1562.

248. *See generally* TIMOTHY KNIGHT, PANIC, PROSPERITY, AND PROGRESS: FIVE CENTURIES OF HISTORY AND THE MARKETS (2014) (recounting numerous examples of value being determined by speculation and market forces rather than by intrinsic value). For an application to patents, with concern that the lack of intrinsic value makes the patent market susceptible to bubbles, see Amy L. Landers, *Private Value Determinations and the Potential Effect on the Future of Research and Development*, 18 CHAP. L. REV. 647, 647 (2015).

249. Tulips, by contrast, are likely not coming back anytime soon. *See* KNIGHT, *supra* note 248, at 1–7 (describing the blossoming of Holland's early seventeenth century "tulipmania").

250. *See* Burstein, *supra* note 247, at 513 (arguing that when the value of a patent does not match that of the underlying technology, markets become inefficient); Lemley & Feldman, *supra* note 170, at 189 (reporting that patent licenses from NPEs rarely lead to innovation or the addition of new features).

251. The pharmaceutical industry is an important exception. *See* BESSEN & MEURER, *supra* note 1, at 143 & tbl.6.3 (finding that the patent system confers net social benefits only in the life sciences).

That doesn't mean we can just get rid of patent litigation. First, there are circumstances like enforcement of primary pharmaceutical patents in which it does seem to support innovation incentives.[252] I have argued elsewhere that the patent system operates differently in different industries, and what makes sense for one industry might not make sense for all.[253] Second, the ultimate threat to enforce a patent, however divorced from reality, may be what is propping up the market for technology transfer based on patents. Finally, the existence of the litigation system may prevent unproductive copying of inventions. The majority of patent suits today are filed by companies who are not themselves practicing the patent,[254] and the vast majority of patent suits are filed not against alleged copiers, but against defendants who invented the technology independently of the patentee.[255] But the fact that copying of inventions is rare today doesn't mean it would be if we had no patent litigation system. It may be the threat of patent litigation itself that deters copying.[256] As noted above, while the system is resilient to a surprising array of changes, that doesn't mean it always will be. Complex systems adapt to change until they don't, and, precisely because they are complex, it may be hard to predict a tipping point when the system stops equilibrating and flips over to a new equilibrium.[257]

E. Patent Reform for a System that Ignores Patent Reform

Maybe it's just my optimistic nature, but I am inclined to see the good, not the bad or the ugly, in these numbers. While the temptation is strong to throw up one's hands and give up on making the system better, or even give up on the system itself, I think the very resilience of the patent system offers opportunities to improve it. While we may not want to get rid of patent litigation for the reasons just noted, the evidence suggests that we need not

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252. I distinguish here between patents on a truly new chemical entity and the sort of secondary patents that are used primarily to game the regulatory system. C. Scott Hemphill & Bhaven Sampat, *Evergreening, Patent Challenges, and Effective Market Life in Pharmaceuticals*, 31 J. HEALTH ECON. 327, 327–28 (2012); C. Scott Hemphill & Bhaven N. Sampat, *When Do Generics Challenge Drug Patents?*, 8 J. EMPIRICAL LEGAL STUD. 613, 615 (2011). The former may provide needed incentives to invent, or at least to invest in the FDA regulatory process. Benjamin N. Roin, *Unpatentable Drugs and the Standards of Patentability*, 87 TEXAS L. REV. 503, 510–13 (2009). The latter generally do not.

253. BURK & LEMLEY, *supra* note 1, at 49–65; Burk & Lemley, *supra* note 47, at 1589.

254. Lemley & Feldman, *supra* note 170, at 188.

255. Cotropia & Lemley, *supra* note 142, at 1459.

256. *See id.* ("[J]ust because no one is copying patented inventions now doesn't mean they wouldn't do so under a different legal regime."). Petra Moser finds that patents can promote innovation when copying or reverse engineering is otherwise too easy in a particular industry. Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214, 1221 (2005).

257. *See* Michal Shur-Ofry, *IP and the Lens of Complexity*, 54 IDEA 55, 100 (2013) (discussing the implications of complexity theory on IP systems).

be wedded to any particular aspect of that system, precisely because the patent system as a whole is resilient to efforts to change it. Based on recent history, we shouldn't expect changes to patent litigation to move the needle very much one way or the other when it comes to encouraging or discouraging innovation. But for that reason, a number of changes that reduce the social cost of patent litigation can probably be made at little or no cost to innovation incentives.

The resilience of the patent system may therefore offer new prospects for patent reform that avoid traditional tradeoffs between the benefits of stronger and weaker protection.[258] Thus, we should look out for opportunities to simplify patent litigation, making it quicker and cheaper. We may also want to take some cases out of the litigation system altogether. Suits by NPEs against defendants who independently invented the technology, for instance, don't seem necessary to facilitate patent markets, and they may impose a substantial cost on innovation. We may be better off without them, relegating NPE lawsuits to cases in which a defendant is alleged to have obtained the technology from the NPE, directly or indirectly.[259] Finally, we might change the remedial structure of patent law in a way that reduces the costs of the system without much affecting incentives to invent or commercialize.[260] Indeed, those changes might even improve the examination side of the patent system by reducing the incentive to invest in low-quality patents for use in litigation.[261]

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258. *Cf.* Golden, *supra* note 147, at 96–104 (discussing a "double-ratio" test to try to identify reforms that do not simply increase or decrease patent protection).

259. Lemley & Feldman, *supra* note 170, at 191; *see also* Carl Shapiro, *Prior User Rights*, 96 AM. ECON. REV. 92, 95 (2006) (advocating "awarding one inventor a patent and the other the right to use the invention' when "simultaneous, independent invention occurs"); Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 479–80 (2006) (advocating an independent invention defense); *cf.* Oskar Liivak, *Rethinking the Concept of Exclusion in Patent Law*, 98 GEO. L.J. 1643, 1653–57 (2010) (advocating a "free entry patent system"). *But see* Mark A. Lemley, *Should Patent Infringement Require Proof of* Copying*?*, 105 MICH. L. REV. 1525, 1530 (2007) (noting the attractiveness of an independent-invention defense but offering some words of caution).

260. *See, e.g.*, John F. Duffy, *Reviving the Paper Patent Doctrine*, 98 CORNELL L. REV. 1359, 1383 (2013) (discussing the tendency of the "paper patent doctrine" to spur innovation while favoring those patents that are socially beneficial); Merges, *supra* note 247, at 1614 (arguing for the regulation and elimination of artificial rent seeking at the expense of actual innovation); Sichelman, *supra* note 245, at 536 (suggesting that the remedial structure of patent law should not include traditional tort principles).

261. Roger Allen Ford, *The Patent Spiral*, 164 U. PA. L. REV. 827, 832, 869–70 (2016) (arguing for improvements in the patent-examination process to reduce the number of low-quality patents that can form the basis for nuisance suits).

The surprising resilience of the patent system, then, might lead us to question why we need particular patent litigation rules. That may in turn point the way to patent reforms. Those reforms most likely won't achieve our long-standing goal of improving incentives to invent, either by strengthening or weakening patent protection. But precisely for that reason, reforms targeted at unproductive litigation behavior might reduce the cost of the patent system without doing much harm. In a system that seems largely impervious to our efforts to improve it, that may be the best we can hope for.

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Book Reviews

What Are Tax Havens and Why Are They Bad?

THE HIDDEN WEALTH OF NATIONS: THE SCOURGE OF TAX HAVENS. By Gabriel Zucman. Chicago, Illinois: University of Chicago Press, 2015. 200 pages. $20.00.

Conor Clarke*

Introduction

International taxation is a particularly distasteful portion of the current-events diet. There are plenty of good reasons to learn about it: presidential candidates rail against avoidance and inversions,[1] and headlines about Apple's offshore profits[2] and the Panama Papers[3] regularly find themselves on the front page. But there is also no avoiding the fact that the details of the international tax system can be bewildering. For most people, no amount of descriptive creativity (the 'double Irish, Dutch Sandwich' comes to mind[4]) will make it otherwise.

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1. *See* Catherine Rampell, *Clinton's Ambitious Plan: Make U.S.-based Corporations Pay Their Taxes*, WASH. POST (Dec. 14, 2015), https://www.washingtonpost.com/opinions/clintons-ambitious-plan-make-us-based-corporations-pay-their-taxes/2015/12/14/befce006-a2a6-11e5-b53d-972e2751f433_story.html [https://perma.cc/S6XC-6T2S] (reporting on Hillary Clinton's strategy for curbing tax inversions).

2. *See* Floyd Norris, *Apple's Move Keeps Profit Out of Reach of Taxes*, N.Y. TIMES (May 2, 2013), http://www.nytimes.com/2013/05/03/business/how-apple-and-other-corporations-move-profit-to-avoid-taxes.html?_r=0 [https://perma.cc/87XZ-9EX3] (describing Apple's tactic to avoid paying taxes by directing profits to low-tax or no-tax jurisdictions).

3. *See* Kylie MacLellan & Elida Moreno, *Prosecutors Open Probes as World's Wealthy Deny 'Panama Papers' Links*, REUTERS (Apr. 4, 2016), http://www.reuters.com/article/panama-tax-idUSL5N177452 [https://perma.cc/MXZ4-DPV4] (reporting on documents leaked from a Panamanian law firm specialized in setting up offshore companies).

4. This is a tax scheme in which a U.S. parent company moves profits from an Irish subsidiary to a Dutch subsidiary, then back to a (separate) Irish subsidiary to maximize deductions and avoid withholding taxes. *See, e.g.*, *'Double Irish with a Dutch Sandwich,'* N.Y. TIMES (Apr. 28, 2012), http://www.nytimes.com/interactive/2012/04/28/business/Double-Irish-With-A-Dutch-Sandwich.html?_r=0 [https://perma.cc/C2UV-QYZU] (diagramming the way numerous companies take advantage of international taxation strategies to avoid high U.S. tax rates); Toby Sterling & Tom Bergin, *Google Accounts Show 11 Billion Euros Moved Via Low Tax 'Dutch Sandwich' in 2014*, REUTERS (Feb. 19, 2016), http://www.reuters.com/article/us-google-tax-idUSKCN0VS1GP

One of the great virtues of Gabriel Zucman's new book on tax havens, and occasionally its great drawback, is that it distills this bewildering complexity down to just a few base elements. His analysis locates clear villains—in Luxembourg and Switzerland, mostly—and arrives backed by a few simple, hard numbers.

Two numbers, in particular, provide the center of gravity for Zucman's account. The first is the amount of household financial wealth that national statistics overlook. Zucman estimates that $7.6 trillion—8% of total worldwide wealth—is hidden in offshore accounts,[5] the vast majority of which goes untaxed.[6] The second is Zucman's attempt to quantify the costs of this unreported wealth. He estimates that it deprives governments of $200 billion in annual revenue, or about 1% of the worldwide total.[7] By his count, the United States alone loses $35 billion.[8]

Making the first of these numbers look daunting requires no great effort. The missing $7.6 trillion is only about $600 billion less than the national wealth of Canada.[9] The revenue figures require a bit more work, but not much: an additional $200 billion in revenue would, for example, handily cover America's annual interest payments on its national debt.[10] In short, unreported wealth and its potential consequences are a big deal, and the importance of the topic goes no small distance toward explaining Zucman's deserving rise (aided by his dissertation advisor and occasional co-author, Thomas Piketty) to something resembling wunderkind status.

But understanding where Zucman's numbers come from and knowing what to do with them are different matters. His book offers itself as an exercise in both quantification and evangelism: he comes armed with both a fact-laden diagnosis and a few simple prescriptions to make the world of international taxation a better place. Yet Zucman's figures should be viewed as conversation starters rather than argument enders: the connection between $7.6 trillion in unreported wealth and the wider issue of tax havens is not as obvious as it might seem.

[https://perma.cc/E8FN-NBZP] (describing Google's use of the "double Irish, Dutch Sandwich" to earn most of its foreign income free of tax).

5. GABRIEL ZUCMAN, THE HIDDEN WEALTH OF NATIONS: THE SCOURGE OF TAX HAVENS 35 (Teresa Lavender Fagan trans., 2015).

6. *Id.* at 47.

7. *Id.* at 52.

8. *Id.* at 53.

9. *See National Balance Sheet and Financial Flow Accounts, Second Quarter 2015*, STAT. CAN. (Sept. 11, 2015), http://www.statcan.gc.ca/daily-quotidien/150911/dq150911a-eng.htm [https://perma.cc/RP5R-MK6K] (reporting the national wealth of Canada as $8.3 trillion).

10. *See* Josh Zumbrun, *The Legacy of Debt: Interest Costs Poised to Surpass Defense and Nondefense Discretionary Spending*, WALL STREET J. REAL TIME ECON. (Feb. 3, 2015, 11:13 AM), http://blogs.wsj.com/economics/2015/02/03/the-legacy-of-debt-interest-costs-poised-to-surpass-defense-and-nondefense-discretionary-spending/ [perma.cc/99SQ-H3VJ] (stating that the U.S. government's interest costs are around $200 billion a year).

With that in mind, this review has three goals. The first is simply to summarize and explain Zucman's central findings for a legal audience—and to offer a sense of the limits of these estimates, particularly with respect to revenue loss. The second is to situate these findings against the backdrop of two long-running debates in international taxation. One is definitional: What is a tax haven? The other is diagnostic: Why are they bad? Answering these questions is crucial to understanding Zucman's findings, but they emerge only fleetingly throughout his book. The third and final goal is to comment critically on the prescriptions Zucman offers for battling unreported wealth, including his most novel: a global registry for financial securities. This proposal might be a good deal more ambitious than Zucman anticipates. Fortunately, it is a proposal about which legal scholarship should have something to say.

I. Missing Wealth and Missing Revenue

A. Missing Wealth

Zucman's book is built around two central findings—what one might call 'missing wealth' and 'missing revenue. Missing wealth can be described as the solution to a long-standing empirical puzzle: why, at the global level, do official statistics show that national liabilities exceed assets? As a matter of simple accounting definitions, this shouldn't be possible. I can have a net debt to my law review editor. The citizens of Connecticut can have a net debt to the citizens of California. And the citizens of the United States can have a net debt to the rest of the world. Globally, however, total liabilities should be matched by total assets: a liability recorded in one place should be equaled by an asset recorded in another.[11] But this is not what we observe: when the national assets and liabilities are summed up, the entire planet appears to be a net debtor. In their respective books, Zucman and Piketty actually make the same joke about this curious state of affairs: it appears as if Earth must be owned partly 'by Mars. '[12]

Why does this gap between assets and liabilities exist? Zucman's claim is that it is an illusion created by the vigorous use of offshore banking.[13] A simple example can illustrate.[14] Imagine a French citizen who owns

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11. ROBERT W. HAMILTON ET AL. THE LAW OF BUSINESS ORGANIZATIONS: CASES, MATERIALS, AND PROBLEMS 63–65 (12th ed. 2014) (discussing basic accounting principles and the requirement that a balance sheet of assets and liabilities must always state an equality).

12. THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST CENTURY 465 (Arthur Goldhammer trans. 2014); ZUCMAN, *supra* note 5, at 37.

13. *See* Gabriel Zucman, *The Missing Wealth of Nations: Are Europe and the U.S. Net Debtors or Net Creditors?*, 128 Q.J. ECON. 1321, 1322 (2013) (asserting that international statistics do not account for assets held in tax havens).

14. *See id.* at 1327–28 (describing how French authorities fail to account for assets held in offshore custodian banks).

American securities. U.S. national accounts will dutifully record this as a liability. But French accounts will record this as an asset only if it is held in the right place. If it's held in a French portfolio, the asset will end up recorded in French statistics and cancel out the American liability. But this won't happen if the security is held in, say, Switzerland—a great antagonist in Zucman's story. Swiss law does not require that the asset be reported to (and thus recorded by) either Swiss or French authorities. When the French citizen puts her American securities in a Swiss account, those securities simply disappear from the national statistics.[15]

This gap also provides the crucial tool for measuring the amount of wealth held in such accounts: Zucman's estimate is simply the difference between globally identifiable financial assets and liabilities.[16] This might seem trivial—a bit of addition followed by a dash of subtraction—but it isn't. Among other things, finding the value of this gap requires assembling aggregate data on portfolio assets and liabilities for just about every country in the world.[17]

This method does, however, require some crucial assumptions and comes burdened with a few limitations. A key assumption is that national accounts actually report and measure assets and liabilities accurately.[18] It should be said: there are aspects of this data that do not inspire much confidence. National flow-of-funds estimates have a funny, 'back-of-the-envelope' quality about them.[19] (In the Federal Reserve's U.S. estimates, for example, the value of closely held equities—which are not traded on an open market and are thus stubbornly hard to value—is calculated simply by taking the companies' self-reported book value and subtracting 25%, as a slapdash illiquidity adjustment.)[20] But at least these rough-and-ready estimates have, as Piketty sometimes puts it, the considerable virtue of existing.[21]

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15. *Id.*

16. *See id.* at 1338 (estimating that "the unrecorded wealth in all tax havens is equal to the difference between globally identifiable portfolio liabilities and assets").

17. *See id.* at 1339 (stating that computing this value requires "aggregate portfolio securities asset and liability figures for all countries").

18. *See id.* at 1337–38 (noting that determining the value of wealth held in tax havens requires assuming that "securities held by direct reporters and those held onshore by households are well measured globally").

19. For a recent discussion of these and related issues, see Chris William Sanchirico, *As American as Apple Inc. International Tax and Ownership Nationality*, 68 TAX L. REV. 207, 233–37 (2015) (exploring problems with Treasury International Capital staff reports).

20. Richard E. Ogden et al. *Corporate Equities by Issuer in the Financial Accounts of the United States*, BOARD OF GOVERNORS OF THE FED. RES. SYS. FEDS NOTES (Mar. 29, 2016), https://www.federalreserve.gov/econresdata/notes/feds-notes/2016/corporate-equities-by-issuer-in-the-financial-accounts-of-the-united-states-20160329.html [https://perma.cc/B6KM-EJ8W].

21. *See, e.g.*, PIKETTY, *supra* note 12, at 13 ("Although the information was not perfect, it had the merit of existing."). Piketty's point is that it's better to have rough estimates than no estimates; Piketty himself has written that Zucman's estimates are "by nature uncertain. *Id.* at 466.

A key limitation, meanwhile, is that Zucman's estimates are restricted to the gap of *financial* assets held offshore.[22] Stocks and bonds are included; yachts and Cézannes are not. Whether one views Zucman's estimates as satisfactory will depend largely on how generously or fastidiously one views these drawbacks.[23] But the burden, at least in this reader's mind, is now firmly on the skeptics to explain why they might be fatal or to offer another hypothesis that is consistent with Zucman's findings.

B. Missing Revenue: A Few Skeptical Notes

Zucman's missing-revenue calculation, meanwhile, is an attempt to quantify the tax consequences of missing wealth.[24] As with missing wealth, Zucman's method here is, in principle, quite simple: he takes the sum of unreported wealth and the rate of turnover, makes some assumptions about the rate of return, and asks how much tax would be paid on the income under existing rates.[25] And, like Zucman's missing-wealth calculations, his revenue calculations offer an important sense of the magnitude at stake.

But I stumbled over two features of the revenue calculations. The first was his assumptions: Zucman asks what would happen if the returns on hidden wealth were taxed at existing marginal rates for dividends and estate transfers.[26] Zucman knows that using these rates might be unrealistic and argues that this makes his estimates a likely *understatement*, since they don't 'include the cost of tax reductions that governments have had to agree to for fear that their taxpayers will hide their wealth in Switzerland.'[27] This is a fine, sporting point. But I thought the logic probably cut the other way: like it or not, almost no high-wealth taxpayers actually pay at the highest marginal rates on their investments and estates.

Consider the estate tax, which (in the U.S. case) Zucman assumes takes a full 40% bite out of transferred estates.[28] For starters, I'm not sure why Zucman assumes all undisclosed U.S. wealth that 'changes hands' will be

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22. *See* Zucman, *supra* note 13, at 1335–44 (outlining Zucman's method for estimating global offshore wealth and noting that this includes only financial wealth, even though tax havens can be used for art or real estate).

23. *Id.* at 1345 ("A basic objection to my estimation procedure is that the global portfolio assets–liabilities gap may reflect data deficiencies unrelated to tax havens.").

24. *See* ZUCMAN, *supra* note 5, at 34–35 ("To estimate the global cost of offshore tax evasion, we need to know how much additional taxes would be paid if all this wealth were declared.").

25. *See id.* at 35, 50 (estimating that a total of $7.6 trillion is held in tax havens, that 3% of these assets change hands each year, and that these assets would be taxed by an average rate of 32%, totaling a loss of $55 billion per year).

26. *See id.* at 51 (noting that his calculations are "based on the tax rates currently in force all over the world").

27. *Id.* at 82.

28. Gabriel Zucman, *The Hidden Wealth of Nations*, GABRIEL ZUCMAN, tbl.Data-Fig4_Tab1 (2015), http://gabriel-zucman.eu/files/Zucman2015TablesFigures.xlsx [https://perma.cc/8P2B-PVJB].

hit by the estate tax; it seems plausible that none of it would be.[29] (And if it's taxed at capital gains rates we would need to know something about basis.) But, even if we assume that all of these transfers are covered by the estate tax, there is still a large gap between the marginal and effective rates of this tax, which is classically described as voluntary. (That is, you can get around it with enough sly planning.)[30] Voluntary might be an overstatement,[31] but if a high-wealth taxpayer is actually paying an effective rate of 40%, she's probably not trying hard enough. (And if she's willing to evade taxes with offshore banking, then she's probably going to be trying pretty hard.)[32] The same is true of the dividend rates, which any number of moderately careful investment strategies can help avoid or delay on investment income.

The bottom line is that the strict binary—wealth is either wholly untaxed or taxed at the top marginal rate—isn't realistic. How sensitive are Zucman's results to these assumptions? Here's my attempt to offer a sense of an answer with data from the United States, which Zucman finds loses $35 billion in revenue annually.[33] He gets this by taking his estimate of total undisclosed U.S. wealth ($962 billion), assuming an 8% nominal rate of return taxed at 30.3%,[34] and a 3% estate turnover taxed at the top rate of 40%.[35] It's hard to know what the 'right' tax rate or rate of return for these estimates should be,[36] but reasonable estimates benchmarked to effective rates produce rather

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29. Zucman writes that "[a]round 3% of the [total] assets held in tax havens changes hands each year," but I do not see a reason why we should assume these are covered by the estate tax (which, in any event, has large exclusions). *Id.* at 50.

30. *See* George Cooper, *A Voluntary Tax? New Perspectives on Sophisticated Estate Tax Avoidance*, 77 COLUM. L. REV. 161, 164 (1977) (describing the estate and gift tax as "seriously eroded" and entirely avoidable with enough effort and sophisticated tax strategies).

31. *Cf.* Paul L. Caron & James R. Repetti, *The Estate Tax Non-Gap: Why Repeal a 'Voluntary' Tax?*, 20 STAN. L. & POL'Y REV. 153, 154 (2009) (suggesting that efforts to repeal the estate tax are evidence that the estate tax is not so easily avoided as some believe).

32. For a related discussion of these points, see Daniel Hemel, *What's the Matter with Luxembourg?*, NEW RAMBLER (Jan. 13, 2016), http://newramblerreview.com/book-reviews/economics/what-s-the-matter-with-luxembourg [https://perma.cc/3Q7J-FADQ].

33. ZUCMAN, *supra* note 5, at 53.

34. The 30.3% rate is an OECD figure that appears to be a top marginal rate imposed on dividends inclusive of both federal and state taxes. Zucman, *supra* note 28, at tbl.Data-Fig4_Tab1. The estate tax rate of 40% is the federal rate and ignores state variation in estate taxation. In what follows, I focus only on federal rates, which allows for a cleaner focus on federal revenue consequences.

35. Thus, [962*.08*.303] + [962*.03*.4] = 34.87. These numbers are from Zucman's online tables and figures. *Id.*

36. Both the rate of return and the tax rate will depend on how the funds are invested. If they're invested in long-term Treasury bonds, the rate of return will be lower, and the returns will be taxed at a higher ordinary income rate. If they're invested in corporate equity, the average rate of return will be higher, but the tax rate will be lower—and potentially nothing, depending on how the funds are invested and how the investments are held. For a helpful breakdown of the rates of return and investment types, see Aswath Damodaran, *Annual Returns on Stock, T.Bonds and T.Bills: 1928 Current*, N.Y.U. STERN SCH. BUS. http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html [https://perma.cc/R97F-236Z].

different results. If we start with the same stock of undisclosed wealth and nominal rate of return, but assume an effective income tax rate of 23.5%, and an effective estate tax rate of 16.6%—tax rates that are still too high but at least based on the actual effective rates that wealthy taxpayers face[37]—the U.S. revenue loss drops from $35 billion to about $23 billion.[38] If we assume a more modest 5% rate of return, it drops it to $16 billion.[39] With a modicum of investment tax planning, it would drop below $10 billion.

All of these numbers should be interpreted as a rough bounding exercise, not precise surgery. But ambiguities about tax rates and tax planning point toward a second and more general issue with Zucman's revenue estimates: they do not incorporate behavioral responses. This isn't an issue for Zucman's missing wealth estimates, since those calculations are an attempt to answer a beguiling factual question about the current state of the world: how much wealth is *actually held* in unreported offshore accounts? His revenue estimates, by contrast, are an attempt to answer a hypothetical question: if missing wealth were declared and taxed at existing marginal rates, what would the tax consequences look like? But a world in which an additional $7.6 trillion is subject to taxation is a world in which many variables would be different.

Much has been written about whether and how revenue estimates of this kind should anticipate both micro and macroeconomic behavior.[40] There may also be important differences between this behavior in the long run and the short run.[41] These estimates have been the source of some surprisingly fierce battles. But, without reenacting them, it seems fair to say that even the

37. Here I use the effective income tax rate paid by the top 1% of earners in 2011 (23.5%), and the effective estate tax rate (16.6%). Adrian Dungan & Michael Parisi, *Individual Income Tax Rates and Shares*, STAT. INCOME BULL. 44 (Spring 2014), https://www.irs.gov/pub/irs-soi/14insprbultaxrateshares.pdf [https://perma.cc/XXA2-NSFF]; Chye-Ching Huang & Chloe Cho, *Ten Facts You Should Know About the Federal Estate Tax*, CTR. ON BUDGET & POL'Y PRIORITIES (Sept. 8, 2016), http://www.cbpp.org/research/federal-tax/ten-facts-you-should-know-about-the-federal-estate-tax?fa=view&id=2655 [https://perma.cc/39T9-PUNM]. The 23.5% rate is likely too high because it averages across rates paid on capital income and labor income.

38. That is, [962*.08*.235] + [962*.03*.166] = 22.9.

39. That is, [962*.05*.235] + [962*.03*.166] = 16.1.

40. *See, e.g.*, Alan J. Auerbach, *Dynamic Scoring: An Introduction to the Issues*, 95 AM. ECON. REV. 421, 421–22 (2005) (discussing how dynamic scoring of revenue estimates can anticipate microeconomic effects); David Kamin, *Basing Budget Baselines*, 57 WM. & MARY L. REV. 143, 158–60 (2015) (discussing how revenue estimates in budget baselines are used in macroeconomic analysis).

41. If all currently undisclosed wealth was immediately declared and taxed, the short-run behavioral response would likely be close to zero. An important question here is whether such a view—immediate taxation of all currently undisclosed investments—is a realistic model for constructing revenue estimates.

most 'static' federal revenue estimates attempt to incorporate some kind of micro-level behavioral responses.[42]

In this case, two behavioral responses immediately come to mind.[43] First, there is the rate at which the undisclosed assets are transferred. If a tax system increases the tax owed on realized gains—as Zucman imagines—it will naturally affect the likelihood that and timing with which the assets change hands. Second, the owners themselves might live in different places. There is, inevitably, debate about the magnitude of these effects. My armchair suspicion is that there might be a relevant correlation between taxpayers who are willing to avoid taxes by illegally hiding money offshore and taxpayers who are willing to avoid taxes with deferral and emigration.[44] But it seems unlikely that these individuals will make the same consumption, investment, and residential decisions as they do now.

This uncertainty about the revenue consequences of hidden wealth points toward a set of issues that come up only fleetingly in Zucman's book. Is missing revenue *really* the reason we care about tax havens? And is it the *only* reason? If the answer to both questions is yes, we should get used to living with the uncertainties sketched above. But I think the answer, at least to the second question, is no—certainly not for Zucman and probably not for society as a whole. Arriving at this conclusion, however, requires answering two basic questions that Zucman's book doesn't ask.

II. What Are Tax Havens and Why Are They Bad?

A. Two Definitional Preliminaries

Zucman's calculations are about the size and costs of unreported wealth. Hence, the first half of the title of his book: *The Hidden Wealth of Nations*. But what about the second half: *The Scourge of Tax Havens*?

'Hidden wealth' and 'tax havens' are not coterminous concepts, much less self-defining ones. And they are not the only concepts deployed in Zucman's book: we are also warned about multinational companies shifting

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42. The Joint Committee on Taxation is charmingly direct on this point. (Question: 'Are Joint Committee on Taxation estimates 'static'?' Answer: "No.") *Frequently Asked Questions*, JOINT COMM. ON TAX'N, https://www.jct.gov/other-questions.html [https://perma.cc/6D29-YES4].

43. For a broad window into the general topic of behavioral response to taxation, see generally DO TAXES MATTER?: THE IMPACT OF THE TAX REFORM ACT OF 1986 (Joel Slemrod ed., 2d prtg. 1990).

44. Emerging momentarily from the armchair: perhaps the most probative evidence on this question comes from research on the international market for football players (in the global and not American sense), which finds evidence of high player mobility in response to taxation. *See* Henrik Jacobsen Kleven et al., *Taxation and International Migration of Superstars: Evidence from the European Football Market*, 103 AM. ECON. REV. 1892, 1922–23 (2013) (finding that low tax rates in Denmark on foreign football players is linked to greater mobility of higher skilled foreign players into the country).

and manipulating profits,[45] tax 'avoidance and evasion,'[46] as well as 'theft[,] pure and simple.'[47] Zucman uses these terms with the care of someone aware of their nuances, but rarely stops to define them for a generalist reader. For a book that is attempting to reach a wider audience—as, in the wake of 'Pikettymania,'[48] this one almost certainly is—it might make sense to steer clear of the tedious definitional weeds. But this strategy produces occasional ambiguity about the scope of the book's ambition.

Two definitional points are worth stressing. First, there is no universally accepted definition of a tax haven.[49] The Organisation for Economic Co-operation and Development (OECD) has offered one influential characterization that relies on four all-things-considered factors: low (or zero) tax rates, a reluctance to exchange information with other countries, a general lack of system transparency, and a failure to require that the economic activity of an incoming investor be 'substantial' to obtain preferential tax treatment.[50]

Of course, the OECD doesn't have a monopoly on definitions. In a series of influential papers, for example, economist James Hines has relied on another definition that stresses low tax rates.[51] Out of a total of forty-nine countries that appear on either the Hines or OECD lists, there is an overlap of thirty-two.[52] Whether this degree of overlap should be viewed as dispiriting or encouraging is largely a matter of interpretation, but the seventeen countries that appear on one list but not the other include many of Zucman's motivating examples (like Switzerland and Luxembourg). In this sense, tax havens bring to mind Justice Potter Stewart's old line about

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45. *See* ZUCMAN, *supra* note 5, at 1.

46. *Id.* at 4.

47. *Id.* at 79.

48. *See, e.g.*, Alan S. Blinder, *'Pikettymania' and Inequality in the U.S.* WALL STREET J. (June 22, 2014), http://www.wsj.com/articles/alan-blinder-pikettymania-and-inequality-in-the-u-s-1403477052 [https://perma.cc/4GQK-NU5H].

49. *See* JANE G. GRAVELLE, CONG. RESEARCH SERV., R40623, TAX HAVENS: INTERNATIONAL TAX AVOIDANCE AND EVASION 3 (2015) (stating that "there is no precise definition of a tax haven").

50. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, HARMFUL TAX COMPETITION: AN EMERGING GLOBAL ISSUE 22 (1998). For a general discussion of the OECD definition, see MICHAEL J. GRAETZ, FOUNDATIONS OF INTERNATIONAL INCOME TAXATION 492–93 (2003).

51. *See, e.g.*, James R. Hines Jr., *Tax Havens* 1 (Mich. Ross Sch. of Bus. Office of Tax Policy Research, Working Paper No. 2007-3, 2007), http://www.bus.umich.edu/otpr/WP2007-3.pdf [https://perma.cc/2XS6-QABZ] (defining tax havens as "low-tax jurisdictions that offer opportunities for tax avoidance").

52. *See* Dhammika Dharmapala, *What Problems and Opportunities Are Created By Tax Havens?*, 24 OXFORD REV. ECON. POL'Y 661, 676 (2008) (listing the countries that qualify as tax havens under the Hines and OECD definitions of tax havens).

pornography[53]: we might think we know tax havens when we see them, but it is surprisingly hard to draw up the precise list of family resemblances.

Second, there is the matter of the nitpicky-sounding distinction between tax avoidance and tax evasion. The difference is hardly intuitive, but it turns out to be highly important. Tax evasion usually refers to the illegal failure to report income.[54] Tax avoidance usually refers to legal (or at least not-yet-illegal) forms of tax planning that reduce tax liability.[55] This distinction is surely susceptible to further nitpicking—since what counts as legal is often determinable *ex post* and not *ex ante*[56]—but it captures the bulk of an important divide in policy and practice.

These preliminaries help clarify the precise scope of Zucman's project. He is concerned almost exclusively with one dimension of the tax haven universe: jurisdictions that are reluctant to share information. And he is concerned primarily with the interaction between this form of bank secrecy and illegal tax *evasion*—not tax avoidance. This, in turn, allows a simple restatement of the book's core argument: nations with bank-secrecy laws that limit information sharing allow super-rich individuals to hide their wealth and, in so doing, break the laws of their home countries.[57]

Zucman's book does have a brief final chapter that engages with issues of international corporate tax planning—that is, with legal tax avoidance.[58] In my view, this chapter—which builds on a distinct line of Zucman's research[59]—fits somewhat uncomfortably alongside the previous four. Zucman's data and analysis might allow for some fairly confident conclusions about the extent and harm of personal tax evasion. But, as we'll see, such conclusions are much more tenuous with respect to corporate tax planning.

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53. Jacobellis v. Ohio, 378 U.S. 184, 197 (1964) (Stewart, J. concurring) ("I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it, and the motion picture involved in this case is not that.").

54. *See* GRAVELLE, *supra* note 49, at 1 (distinguishing between tax avoidance and tax evasion on the basis that the latter refers to illegal tax reductions).

55. *Id.*

56. For a recent example of these problems, see Michael J. Graetz, *Behind the European Raid on McDonald's*, WALL STREET J. (Dec. 3, 2015), http://www.wsj.com/articles/behind-the-european-raid-on-mcdonalds-1449187952 [https://perma.cc/8FMR-XWF4].

57. *See* ZUCMAN, *supra* note 5, at 79 ("It's important to understand that we're not talking about tax competition, but of theft pure and simple ").

58. While corporations undoubtedly break the law, the consensus view is that evasion tends to be an individual issue and avoidance tends to be a corporate issue. *See* Dharmapala, *supra* note 52, at 665–66 (stating that tax havens are used by individuals for "illegally evading home-country taxes," while corporations use tax havens for "legal tax avoidance").

59. *See generally* Gabriel Zucman, *Taxing Across Borders: Tracking Personal Wealth and Corporate Profits*, J. ECON. PERSP., Fall 2014, at 121 (attempting to quantify revenue lost as a result of corporate tax avoidance).

B. Why Are Tax Havens Bad?

The background assumption of Zucman's text seems to be that both evasion *and* avoidance are problems—problems, in particular, for the revenue-gathering capacity of governments. But the difference between evasion and avoidance—between the illegal personal evasion and the legal corporate planning—turns out to have large consequences for why we might worry about tax havens. Other than a few die-hard tax protestors, few seem to doubt that illegal tax evasion is a problem worth solving. But whether this is true of the wider world of corporate tax planning remains hotly controversial.[60]

Views on this wider subject—corporate tax planning and its relationship to international tax competition—are sometimes sorted into the 'positive' and 'negative' camps.[61] The negative view—that international corporate tax planning harms the ability of individual nations to collect revenue—is certainly a respectable position and probably even the dominant one. The intuition behind it is easily grasped: if nations start selling services that allow foreign companies to reduce their domestic tax liabilities, it will trigger a race to the bottom in which no nation is able to gather more than a nominal fee from the most mobile companies.[62]

But this view does not hold the field unchallenged. The standard response: it's *desirable* that foreign havens let domestic governments distinguish between the less mobile and more mobile companies that operate in domestic jurisdictions.[63] The intuition is that taxes on particularly mobile firms will just end up driving those firms away—and so, in the end, the tax will be borne by the immobile firms regardless.[64] For this reason, the argument goes, nations have an interest in distinguishing between firms on the basis of mobility: taxes end up falling where they would have anyway—

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60. For competing views on this debate from a law-focused perspective, see generally Reuven S. Avi-Yonah, *Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State*, 113 HARV. L. REV. 1573 (2000) (arguing that tax havens are problematic because they deprive countries of necessary revenue and force countries to employ less-progressive tax forms); and Julie Roin, *Competition and Evasion: Another Perspective on International Tax Competition*, 89 GEO. L.J. 543 (2001) (arguing against reforms that would weaken tax havens for normative and practical reasons). For a general overview of the arguments on each side of this debate, see GRAETZ, *supra* note 50, at 487–541.

61. I use these terms following Dharmapala, *supra* note 52, at 662.

62. For an influential formal model of this view, see Joel Slemrod & John D. Wilson, *Tax Competition with Parasitic Tax Havens*, 93 J. PUB. ECON. 1261, 1263–64 (2009).

63. *See, e.g.*, Qing Hong & Michael Smart, *In Praise of Tax Havens: International Tax Planning and Foreign Direct Investment*, 54 EUR. ECON. REV. 82, 92 (2010) (arguing that, under certain assumptions, an increase in tax avoidance can lead to increased statutory and effective tax rates and increased citizen welfare).

64. This intuition is not new. *See, e.g.*, Roger H. Gordon, *Taxation of Investment and Savings in a World Economy*, 76 AM. ECON. REV. 1086, 1100 (1986) (constructing a model in which smaller countries that tax mobile capital or immobile labor see those taxes borne entirely by labor).

on those hapless immobile firms—and individual countries get the benefit of keeping the investments of mobile firms inside their borders.

Each side in this long-running debate has a few arrows of suggestive evidence in its quiver. For the negative view, a particularly stark fact is that nations rarely act as if they are eager to distinguish between more and less mobile firms. Indeed, industrialized nations often expend a great deal of grief and treasure trying to shut down the barely-legal-until-they-aren't planning games.[65] The more optimistic view of tax havens, on the other hand, points to the fact that tax havens seem to 'stimulate[] investment in nearby high-tax countries,'[66] and notes that the rise in tax haven investments is not associated with any precipitous decline in corporate tax revenues.[67] Lurking behind this disagreement of facts and formal models is perhaps a more fundamental—and probably intractable—disagreement about the nature of government: is tax competition a healthy stimulant that helps constrain the fecklessness of wasteful bureaucrats, or is it a downward spiral that prevents our noble, welfare-maximizing governments from striking the desired balance between equity and efficiency?[68]

C. The Moral Case Against Tax Evasion—and Its Wrinkles

The ongoing debate over international tax planning brings us back to tax evasion: given the apparently unyielding arguments over tax avoidance and corporate tax planning, can anything clearer be said about the illegal tax evasion that is the primary object of Zucman's firepower?

I doubt that anyone who defends the positive view of corporate tax avoidance would lend his seal of approval to personal tax evasion. Nonetheless, the above question is not as easy to answer as it first appears. It is hard to say with much confidence which countries are the net winners and losers from the tangled network of transactions that enables evasion.[69] More broadly, the incidence of personal tax evasion remains contested: one

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65. *See* Slemrod & Wilson, *supra* note 62, at 1262 (stating that the benefit of tax havens must be reconciled with the fact that nonhaven countries "expend considerable resources" to protect their own tax revenue threatened by haven transactions).

66. James R. Hines Jr., *Do Tax Havens Flourish?*, 19 TAX POL'Y & ECON. 65, 65 (2005); *see also* Mihir A. Desai et al., *Do Tax Havens Divert Economic Activity?*, 90 ECON. LETTERS 219, 219–20 (2006) (referring to the possibility that encouraging tax havens might facilitate investment in nearby high-tax countries).

67. Dharmapala, *supra* note 52, at 674. For a longer treatment of these issues, see generally Alan J. Auerbach, *Why Have Corporate Tax Revenues Declined? Another Look*, 53 CESIFO ECON. STUD. 153 (2007).

68. *See* GRAETZ, *supra* note 50, at 503 (commenting that tax havens undermine a sovereign nation's tax policy and ability to balance equity with efficiency as representatives and the populace desire, but noting that there is disagreement over whether this is a problem or benefit).

69. For a longer discussion of this point, see Hemel, *supra* note 32 (analyzing the impact of offshore tax evasion on the United States and United Kingdom and concluding that it is "difficult to know who wins and who loses from offshore tax evasion").

might expect, for example, that as certain industries or investments fall victim to evasion—and as their after-tax rates of return start to rise—those industries will be subject to an influx of labor or investment that works, once more, to reduce the inflated after-tax returns.[70]

Still, I think we can say something distinct, if not quite decisive, about tax evasion. Even if it turned out that the distributive consequences of tax evasion land in not-entirely-unappealing places, there is a distinctive reason why breaking the law is different: for both the elusive taxpayer and the facilitating tax haven, illegal tax evasion offends our sense of ordinary justice in a way that garden-variety corporate tax planning does not. In other words, to put it unsubtly, illegal tax evasion is *wrong*.

It is wrong for a country to help facilitate tax evasion because of a simple norm of international relations: one country should not undermine the legal system of another.[71] We are entitled to be appalled by countries that facilitate the evasion of domestic tax laws for the same reason one would be shocked by a country that facilitated the evasion of our domestic criminal laws. And we might think that tax evasion is wrong for the individual perpetrator because selecting which laws to obey, as if the U.S. Code were a cafeteria lunch line, violates the basic premise of our social contract. Zucman makes this point in passing,[72] but it is Piketty, in his brief foreword to Zucman's text, that presses it hardest: '[M]odern democracies are based on a fundamental social contract: everybody has to pay taxes on a fair and transparent basis.'[73] When that contract breaks down—when a 'rising fraction of the population feels that the system is not working for them'—then the 'interclass solidarity' that binds the state together is at risk.[74]

It is worth lingering on this point a bit longer, since it is a broader theme in Piketty's work (and what orbits it). Piketty has always stressed—as I suspect Zucman also believes—that the primary contribution of Piketty's research is the lush bushels of data it has gathered from around the world.[75] But when Piketty turns to diagnosis and prescription, he often invokes a faltering social contract: 'a fiscal secession of the wealthiest citizens' could,

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70. For a nice introduction to this argument, see James Alm & Keith Finlay, *Who Benefits From Tax Evasion?*, 43 ECON. ANALYSIS & POL'Y 139, 145–52 (2013) (summarizing different approaches to analyze the general equilibrium effects of tax evasion). One point of this general-equilibrium approach is that the distributional effects of tax evasion may depend on labor elasticity.

71. *See* GRAETZ, *supra* note 50, at 495 (claiming that "intentionally undermining the legitimate legal systems of other countries is wrong").

72. *See, e.g.*, ZUCMAN, *supra* note 5, at 56 ("When tax evasion is possible for the wealthy, there can be no consent for taxes.").

73. Thomas Piketty, *Foreword* to GABRIEL ZUCMAN, THE HIDDEN WEALTH OF NATIONS: THE SCOURGE OF TAX HAVENS vii, vii–viii (Teresa Lavender Fagan trans., 2015).

74. *Id.* at viii.

75. *See, e.g.*, Thomas Piketty & Emmanuel Saez, *Income Inequality in the United States: 1913–1998*, 118 Q.J. ECON. 1, 3 (2003) ("[T]he primary contribution of this paper is to provide new series on income and wage inequality.").

he has argued elsewhere, 'do great damage to fiscal consent in general"[76]—which would, in turn, exacerbate a variety of other social ills.

Provisionally. my chips are with Piketty and Zucman: creeping regressivity at the top of the distribution—whether it's generated by tax havens, rent-seeking, or technology—doesn't seem like a symptom of a healthy society. And yet two wrinkles in this line of argument must be kept in mind.

First, the predicted collapse of the democratic fiscal contract also implicates a bushel's worth of thorny data questions. The literature on the relationship between democratic preferences and redistribution is daunting. Actually, it's a mess.[77] But an extremely basic concern one might have, which Piketty himself sometimes echoes,[78] is that the public doesn't really understand the nature of modern inequality, much less the complex tax treatment of high incomes.[79] At the same time, fears about the fragility of interclass solidarity must depend on an empirical premise about what various classes *actually know*, or at least actually believe, about the state of the fiscal union.

Second, the moral principle at stake—"fiscal consent, divorced from whatever empirical consequences that might follow from its absence—seems like a geographically limited one. The wrongness of tax evasion depends, somewhat awkwardly. on *why* the investors use those unreported offshore accounts. For the United States and Europe, it's not difficult to conclude that investors use unreported offshore accounts to evade legitimately enacted and generally applied domestic laws. But I think this is a much more challenging conclusion to arrive at for investors from places like Russia, the Middle East, and Africa. With these investors, one encounters a range of motives, from the ignoble to the perfectly banal. Some investors surely use offshore accounts to steal; others to avoid the risk of confiscatory domestic policies;

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76. *See* PIKETTY, *supra* note 12, at 496–97 ("If taxation at the top of the social hierarchy were to become more regressive in the future, such a fiscal secession of the wealthiest citizens could potentially do great damage to fiscal consent in general. Individualism and selfishness would flourish: since the system as a whole would be unjust, why continue to pay for others?"). This is not to suggest that fiscal consent is the only reason Piketty objects to inequality. *See, e.g.*. Liam Murphy, *Why Does Inequality Matter?: Reflections on the Political Morality of Piketty's* Capital in the Twenty-First Century, 68 TAX L. REV. 613, 616 (2015) (discussing Piketty's concerns with economic inequality and economic justice).

77. *See, e.g.*, Daron Acemoglu et al., *Democracy, Redistribution and Inequality* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 19746, 2013), http://www.nber.org/papers/w19746 [https://perma.cc/VUU8-3PLU] (noting that "the empirical literature is very far from a consensus on the relationship between democracy, redistribution, and inequality").

78. *See, e.g.*, PIKETTY, *supra* note 12, at 259 ("[W]ealth is so concentrated that a large segment of society is virtually unaware of its existence ").

79. This is also a large research agenda. For a snowflake-sized tip of the iceberg, see Vladimir Gimpelson & Daniel Treisman, *Misperceiving Inequality* 5–21 (Nat'l Bureau of Econ. Research, Working Paper No. 21174, 2015), http://www.nber.org/papers/w21174 [https://perma.cc/56KD-UHJ8] (presenting survey findings of the public misperception of inequality).

others still to obtain wealth-management services that are simply unavailable at home.[80]

This need not change the general point: our reasons for cracking down on individual tax evasion can be different and indeed stronger than our reasons for cracking down on corporate tax avoidance. But it does point toward a need for careful distinctions in the data—especially as European and North American nationals occupy a shrinking percentage of offshore accounts[81] and as the research agenda moves from understanding the facts to assessing a response.

III. What Should We Do?

A. Expanding FATCA

So, what *should* we do about tax havens? Zucman's book contains two main proposals. The first is an expansion of America's Foreign Account Tax Compliance Act (FATCA).[82] FATCA requires that foreign banks and other institutions automatically report financial information about U.S. taxpayers to the IRS, just as is required of domestic institutions.[83] If a foreign institution refuses, the United States imposes an additional 30% withholding tax on income flowing into that institution from the United States.[84]

FATCA is important partly because it changes the default rules: it marks a shift from cumbersome 'on demand' information exchanges—under which a government can actively request information on a case-by-case basis, with cause—to automatic ones, under which financial institutions transmit data as a matter of course.[85] Zucman's basic point is that FATCA's unilateralism is necessary (and desirable) but not sufficient to truly control global tax evasion, since individual financial institutions can decide to stop dealing with the United States.[86] (And, even if they do report to the United States, American ownership and income might be hidden behind inscrutable veils of entity ownership.) Zucman's proposal, which fits snugly alongside similar

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80. *See* ZUCMAN, *supra* note 5, at 52 (noting that offshore banks may provide financial services to investors from countries that do not have a well-established financial system and who are unable to obtain such services without offshore banking). This wide range comes as no surprise, since one of the intriguing common features of tax havens is that they score extremely well on measures of stability and governance: they are countries that "can credibly commit not to expropriate foreign investors. Dhammika Dharmapala & James R. Hines Jr., *Which Countries Become Tax Havens?*, 93 J. PUB. ECON. 1058, 1058, 1064 (2009).

81. *See* ZUCMAN, *supra* note 5, at 33 ("If the current trend is sustained, emerging countries will overtake Europe and North America by the end of the decade.").

82. *Id.* at 76–77.

83. 26 U.S.C. § 1471 (2012).

84. *Id.*

85. ZUCMAN, *supra* note 5, at 64–65.

86. *See* ZUCMAN, *supra* note 5, at 65–66 (suggesting that banks may choose to invest only in Europe or Asia to avoid compliance with FATCA).

proposals from American law professors,[87] is to form a multilateral coalition of governments that more broadly share information and sanction noncompliant institutions. It's still plausible for a large bank to have no dealings with the United States. But good luck trying to pull that with the entire G-20 or the OECD.

To the benefits Zucman ascribes to an expanded FATCA, I'd like to add another: expanding FATCA would almost certainly help solidify it domestically. The domestic debate over the law has hinged largely on the costs it imposes on our citizens. Americans abroad, apparently dreading the additional hassle, have started giving up their passports at a higher rate.[88] Some foreign banks, sharing similar fears, have stopped offering banking services to U.S. clients.[89] As an absolute matter, these trends remain small. But that has not stopped the histrionics from getting large: FATCA is 'the neutron bomb of the global financial system';[90] FATCA 'destroys lives and the U.S. economy';[91] and so on.

The degree to which one views these costs as tragic may depend in part on how large of a violin one plays for expat bankers who need to open new checking accounts and financial institutions that need to file additional paperwork. In crucial respects, it may be too early to tell if FATCA works well. (Although we can, I think, breathe a collective sigh of relief about the neutron bomb.) Regardless, a fully global FATCA would not give Americans an incentive to give up their citizenship, or foreign banks an incentive to deny Americans their services. This also hints at a nice irony of

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87. *See* J. Richard (Dick) Harvey, Jr., *Offshore Accounts: Insider's Summary of FATCA and Its Potential Future*, 57 VILL. L. REV. 471, 487–88 (2012) (discussing the goals of FATCA, including the provision of a model for other countries to follow); Joshua D. Blank & Ruth Mason, *Exporting FATCA* 1245 (N.Y.U. Ctr. for Law, Econ. and Org. Working Paper No. 14-05, 2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2389500 [https://perma.cc/VEW2-5KFN] (arguing that FATCA provides a new global standard for automatic information exchange that has supported offshore tax compliance efforts of non-U.S. governments); Itai Grinberg, Beyond FATCA: An Evolutionary Moment for the International Tax System 57 (Jan. 27, 2012) (unpublished manuscript) (on file with author) (suggesting a framework for establishing a multilateral automatic information reporting regime based on existing OECD, EU, and U.S. systems).

88. *See* Sophia Yan, *Record 1,335 Americans Give Up Their Passports*, CNN MONEY (May 8, 2015), http://money.cnn.com/2015/05/08/pf/taxes/american-expats-passports-renounce/ [https://perma.cc/YS45-3XR4] (reporting the burden of complicated tax paperwork as a factor in the record-high number of renunciations of American citizenship in 2015).

89. *See* Sophia Yan, *Banks Lock Out Americans over New Tax Law*, CNN MONEY (Sept. 15, 2013), http://money.cnn.com/2013/09/15/news/banks-americans-lockout/index.html?iid=EL [https://perma.cc/VFH3-J8AJ] (claiming that some global banks now refuse U.S. customers because they are unwilling to comply with the requirements of FATCA).

90. Lynnley Browning, *Analysis: Critics Say New Law Makes Them Tax Agents*, REUTERS: MONEY (Aug. 19, 2011), http://www.reuters.com/article/us-usa-tax-fatca-idUSTRE77I38220110819 [https://perma.cc/Q5KR-GDL5].

91. Ellen Wallace, *EC Hails Proposed Deal to Catch Tax Evaders Between US and 5 EU Gov'ts*, GENEVALUNCH (Feb. 9, 2012), http://genevalunch.com/2012/02/09/ec-hails-proposed-deal-to-catch-tax-evaders-between-us-and-5-eu-govts/ [https://perma.cc/QRQ4-66TH].

the FATCA criticisms. Critics often interpret FATCA's burdens—the additional hardship for globetrotting Americans, the extraterritorial reach that smacks of imperialism—as a reason to roll it back.[92] In fact, these burdens disappear at either extreme—that is, a global FATCA, or no FATCA.

Still, a threshold issue for expanding FATCA is implementation: how do we transform a unilateral system into a multilateral one? Here, Zucman has the economist's occasional tendency to favor bloodless abstraction over the institutional nitty-gritty.[93] If one believes that global tax coordination resembles a prisoner's dilemma[94]—in which individual countries have an incentive to break ranks at the cost of global welfare—Zucman's analysis will offer little reassurance.[95]

But the facts, which are quickly outpacing the proposals, are cause for some comfort: in the summer of 2014, with a dose of inspiration from FATCA, the OECD approved a new standard for the global exchange of tax information, known informally as GATCA.[96] Pitfalls and land mines lie ahead, no doubt, but over ninety-five countries have a theoretical commitment to the standard, and the earliest adopters will start implementation around 2017.[97] The apparent plausibility of international coordination should provide particular cheer to Zucman—whose second proposal, more so than his first, may need to rely on it.

B. A Global Financial Registry

Zucman's second proposal is a public global registry for all circulated financial securities.[98] This would, he argues, serve the important purpose of verifying whether or not financial institutions are transferring the data

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92. *See, e.g.*, Stu Hagen, *An American Tax Nightmare*, N.Y. TIMES: THE OPINION PAGES (May 13, 2015), http://www.nytimes.com/2015/05/14/opinion/an-american-tax-nightmare.html [https://perma.cc/UWD2-EB6V] (describing FATCA as a "dangerous and growing government overreach" and arguing for its repeal).

93. *See, e.g.*, ZUCMAN, *supra* note 5, at 81 (noting that the cooperation of a handful of countries would be effective in imposing high losses on uncooperative territories, so an effective, multilateral FATCA only requires small and easy-to-form coalitions).

94. *See* DANIEL N. SHAVIRO, FIXING U.S. INTERNATIONAL TAXATION 136–37 (2014) (describing international taxation as an illustration of the prisoner's dilemma).

95. *See id.* at 136–39 (discussing barriers to global tax coordination based on the prisoner's dilemma).

96. *Automatic Exchange of Financial Account Information*, OECD 2 (2016), http://www.oecd.org/tax/exchange-of-tax-information/Automatic-Exchange-Financial-Account-Information-Brief.pdf [https://perma.cc/44P6-VCY9]; Wouter Delbaere, *FATCA v. GATCA: Which Will Rule in Asia?*, WOLTERS KLUWER FINANCIAL SERVICES 1 (2014), http://www.wolterskluwerfs.com/onesumx/comment-piece/FATCA-vs-GATCA-which-will-rule-in-asia.pdf [https://perma.cc/SV8V-KE7R].

97. OECD, *supra* note 96, at 8.

98. ZUCMAN, *supra* note 5, at 92. For an analogy between the proposed world financial register and public real-estate records, see *id.* at 97.

required by a global FATCA.[99] The proposal is novel. (Piketty hints at it in *Capital in the Twenty-First Century*[100]—the registry is a prerequisite for his global wealth tax—but Zucman had also sketched it in an earlier article.[101]) The proposal is also much more radical than expanding FATCA—and perhaps more radical than Zucman anticipates.

Zucman knows his proposal is likely to stoke some controversy and spends a few pages warding off two particular worries. The first is that the registry idea is an unrealistic utopian fantasy.[102] (Since this criticism has bedeviled Piketty's call for a global wealth tax, it's no surprise to see Zucman acting like the best defense is a good offense.) Zucman argues that much of the information needed for a registry is already held in diffuse form by private companies, and could be merged and managed by an international institution like the IMF.[103] The second anticipated problem is that the registry would invade privacy. Zucman responds (convincingly in my view) by observing that existing property registries already make a great deal of ownership information publicly available—and are not, as far as I know, interpreted as evidence of a coming dystopia.[104] It's hard to see why doing the same for financial instruments is qualitatively different.

And yet, it seems to me that Zucman does not engage with what is most radical and challenging about his registry proposal: ownership isn't a brute fact that can be reported and verified as easily as the number of dollars sitting in a bank account or the number of shares sold on an exchange. And while Zucman knows that identifying ownership is a challenge,[105] he seems to view it as a logistical problem rather than an interpretive one. His book asserts that the global registry must look through to the 'ultimate owner[s]' or 'true holders' of securities, as well as the 'actual clients' of secretive banks.[106] But ownership is a matter of legal construction, not scientific discovery. If ownership is defined by national (and often *local*) legal systems, how can it be reported in a registry shared by many nations?

To see this problem, take an analogy that Zucman starts with: registries for real property. In the United States such registries are held at the local

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99. *Id.* at 92.

100. *See* PIKETTY, *supra* note 12, at 519–20 (noting that a small, global wealth tax "would be more in the nature of a compulsory reporting law than a true tax").

101. *See* Zucman, *supra* note 59, at 136–37 (explaining how a world financial registry would allow countries to monitor the distribution of corporate tax revenue across the globe).

102. *See* ZUCMAN, *supra* note 5, at 93 ("A global financial register is in no way utopian, because similar registers already exist ").

103. *See id.* at 93–95 (describing the IMF as one of the only truly global international organizations and technically capable of creating and maintaining a global registry).

104. *See id.* at 96–97 (offering land and real estate records as demonstrative of how much information is already publicly available).

105. *Id.* at 95.

106. *Id.* at 96.

level, usually in county offices.[107] Among other things, these registries allow owners and third parties to verify whether or not there are encumbrances on a title. But what counts as an encumbrance varies by jurisdiction. Take mortgages: as anyone who has studied for the bar exam may painfully recall, some states follow a 'title theory' (a mortgage means the bank has title) while others follow a 'lien theory' (the occupant retains title).[108] Now imagine a registry that encompasses several jurisdictions, each with a different theory of the mortgage. Asking such a registry to identify the true owners of mortgaged properties would be a bit like asking what one city is the capital of both New York and California. It will vary.

This point generalizes the monstrously complex entities that roam the landscape of international taxation. Complicated forms of ownership—owning through layers of trusts and holding companies, or by executing instruments that are simply hard to categorize—don't just make it more complicated to identify the true owners. Depending on the jurisdiction, they actually change the ownership. There will always be easy cases; Zucman's registry will have no problem sorting those. But international tax planners are sophisticated actors and they won't make the categories easy.

To a large extent, this issue already bedevils international taxation: it is why so-called hybrid entities and instruments—treated one way in jurisdiction *X* and another way in jurisdiction *Y*—are so popular. As an example, simply revisit one of the classic brainteasers of tax planning: the old debt–equity distinction. Debt (held by creditors) and equity (held by owners) are easy to distinguish at the extremes.[109] But between those extremes sits a wide scrubland of hard-to-classify instruments.[110] Because jurisdictions tax debt and equity differently, there are often strong incentives to make debt look like equity or vice versa. But jurisdictions disagree about where and how to draw the line between the two categories—a traditional source of tax arbitrage[111]—and there isn't a right answer about where and how to do it. So if a holding company's capital structure contains an instrument that is 'equity' by U.S. standards and 'debt' by French standards, how would Zucman's registry classify the holders? Who would be the ultimate owners?

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107. *See* THOMAS W. MERRILL & HENRY E. SMITH, PROPERTY: PRINCIPLES AND POLICIES 919 (2007) (explaining the function of the recorder of deeds and noting that there is typically a recorder's office in every county in the state).

108. JESSE DUKEMINIER ET AL., PROPERTY, 618 n.17 (7th ed. 2010).

109. The economic difference is that debt has limited risk and limited return, while equity has unlimited risk and (potentially) unlimited returns.

110. For a general discussion of this distinction and its U.S. tax implications, see RICHARD L. DOERNBERG ET AL., FEDERAL INCOME TAXATION OF CORPORATIONS AND PARTNERSHIPS 89–104 (5th ed. 2014).

111. *See* Andriy Krahmal, *International Hybrid Instruments: Jurisdictional Dependent Characterization*, 5 HOUS. BUS. & TAX L.J. 98, 116–17 (2005) (explaining that jurisdictional distinctions between debt and equity instruments create opportunities for tax arbitrage).

To be sure, there will be plenty of easy cases where a registry would have no problem identifying the owners. But those plain-vanilla owners are already paying their taxes. It is precisely the borderline cases—involving aggressive planning through complicated deals—that are both the most important targets and the hardest to keep in sight.

In other words, asking a registry to record ownership will also require asking jurisdictions to coordinate on the legal treatment of instruments and entities. This is not to say that Zucman's registry idea is a nonstarter. But it does raise issues beyond how to best scoop up piles of existing data and dump them into an existing international institution.

Fundamentally, those issues bring us back to the questions of multilateral coordination that we saw above with FATCA—but, this time, with a twist. Coordinating on an automatic information exchange—the transmission of those brute facts—is a good deal easier than coordinating on the substantive legal categories. Substantive coordination often occurs by treaty, but these deals are historically bilateral, not multilateral.[112] In the context of trade, the General Agreement on Trade and Tariffs provides a shared set of rules and the World Trade Organization provides a central body for decision making and enforcement. Similar agreements and bodies exist for international finance.[113] But nothing equivalent exists for international taxation, at least not at the global level.[114]

There is, in the OECD's recent 'Base Erosion and Profit Shifting' project, a faint glimmer of hope on the horizon.[115] Among other things, this effort targets exactly the types of "hybrid mismatche[s]' described above.[116] But the project's progress lags far behind GATCA and may face unique structural obstacles—like the treaty obligations of the various OECD member states.[117] At least for now, I'm not holding my breath.

And, even if there is enough progress on international coordination such that a Zucman-style registry can be made a reality, it would end neither tax

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112. *See, e.g.*, Victor Thuronyi, *International Tax Cooperation and a Multilateral Treaty*, 26 BROOK. J. INT'L L. 1641, 1641 (2001) (stating that international tax law has over 1,500 bilateral treaties meant to prevent double taxation).

113. *See, e.g.*, *International Monetary Fund Factsheet*, INT'L MONETARY FUND 1 (Sept. 2016), https://www.imf.org/About/Factsheets/The-IMF-and-the-World-Trade-Organization?pdf=1 [https://perma.cc/HWV2-MZC7] (highlighting the International Monetary Fund's role in supporting a 'sound international financial system").

114. GRAETZ, *supra* note 50, at 487.

115. For a comprehensive overview of this process, see generally Itai Grinberg, *The New International Tax Diplomacy*, 104 GEO. L.J. 1137 (2016).

116. *See* JOINT COMM. ON TAXATION, BACKGROUND, SUMMARY, AND IMPLICATIONS OF THE OECD/G20 BASE EROSION AND PROFIT SHIFTING PROJECT, S. DOC. NO. JCX-139-15, at 13 (2015) (noting that the "Base Erosion and Profit Sharing" plan would task the OECD with developing rules to neutralize the duplicative effects of hybrid entities and instruments).

117. *See* Michael J. Graetz, *Can a 20th Century Business Income Tax Regime Serve a 21st Century Economy?*, 30 AUSTL. TAX F. 551, 563 (2015) (listing various barriers to an OECD multilateral tax agreement, including domestic treaties between European nations).

evasion nor tax avoidance. It wouldn't end evasion because such a registry would apply only to *circulated* and *financial* securities; I don't doubt the ability of motivated tax cheats to migrate into investments that are neither. As for avoidance, my suspicion is that widespread agreement on international tax standards would simply make international tax planning look more like its domestic counterparts: we might not see as much tax arbitrage, but we would still see the classic tricks—namely, walking right up to the precipitous edge of the bright-line rules, and exploiting the fact that standards are hard for overburdened agencies to enforce.

This is all by way of saying that Zucman's registry leaves a lot to the imagination. And there's an odd way in which this shouldn't be surprising: it's not, after all, the kind of "registry' with which contemporary law has any experience. It actually has little in common with registries as the law has come to imagine them. There is, coincidentally, a small renaissance of academic interest in the subject of registries.[118] But the focus of this new literature, as with its earlier incarnations,[119] is on how registries aid the coordination and verification efforts of *private* parties. Relatively little attention—practically none, as far as I know—has focused on registries as a tool for enforcement and verification by the state *against* private parties.[120]

This is despite the fact that, historically, public enforcement and taxation are two of the registry's ostensible goals.[121] Zucman has done well to remind us of that fact. His quantitative efforts provide an important foundation for setting priorities, and his proposals add a dose of creativity to a debate that can feel stale. But designing the institutions to achieve his vision remains the burden of future work.

118. *See* Abraham Bell & Gideon Parchomovsky, *Of Property and Information*, 116 COLUM. L. REV. 237, 243–44 (2016) (discussing the functions of registries in modern property law).

119. *See* Douglas Baird & Thomas Jackson, *Information, Uncertainty, and the Transfer of Property*, 13 J. LEGAL STUD. 299, 302–03 (1984) (discussing the role of registries in early conceptions of private property rights).

120. For a brief mention of these issues, see Bell & Parchomovsky, *supra* note 118, at 277.

121. *See, e.g.*, Robert C. Ellickson & Charles DiA. Thorland, *Ancient Land Law: Mesopotamia, Egypt, Israel*, 71 CHI.-KENT L. REV. 321, 373 & n.305 (1995) (describing taxation as one of the primary goals of ancient land registration).

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Immigrant Neighbors, Workers, and Caregivers in Our Midst: What We Owe Each Other

STRANGERS IN OUR MIDST: THE POLITICAL PHILOSOPHY OF IMMIGRATION. By David Miller. Cambridge, Massachusetts: Harvard University Press, 2016. 240 pages. $35.00.

Michael J. Sullivan*

Over the span of four decades, David Miller has developed an expansive research agenda in political philosophy encompassing the fields of social justice, nationalism, and global justice.[1] In his previous book, *National Responsibility and Global Justice*, Miller developed a theory of how we should combine our obligations towards our compatriots with our duties of global justice.[2] In the wake of the mass movement of asylum seekers from Syria and beyond into the European Union in 2015, Miller's *Strangers in Our Midst* builds on this expertise in nationalism and global justice to offer a provocative and timely account about how citizens should think about and respond to immigration 'to join our societies.'[3] His message will likely continue to resonate with United Kingdom citizens' concerns about immigration policy raised during Britain's June 23, 2016 referendum vote to renegotiate its relationship with the European Union.[4]

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1. *See generally, e.g.*, DAVID MILLER, MARKET, STATE, AND COMMUNITY: THEORETICAL FOUNDATIONS OF MARKET SOCIALISM (1989); DAVID MILLER, ON NATIONALITY (1995); DAVID MILLER, SOCIAL JUSTICE (1976).

2. *See generally* DAVID MILLER, NATIONAL RESPONSIBILITY AND GLOBAL JUSTICE (2007).

3. DAVID MILLER, STRANGERS IN OUR MIDST: THE POLITICAL PHILOSOPHY OF IMMIGRATION 1 (2016). Beyond legal immigration and naturalization, Miller also refers to a process of social incorporation, and a form of belonging that he describes as social membership with rights and obligations. *Id.* at 124, 132, 134–35. An immigrant may have a moral claim to social membership in a community or country as a contributing member even when she has not entered legally. *See id.* at 124 (claiming it would be unjust to force a migrant who has contributed to a society to withdraw from that society without reciprocation for those contributions).

4. *See* David Miller, *Win or Lose, the Brexit Vote Shows How Hard It Is To Defend the EU*, FOREIGN POL'Y (June 22, 2016), http://foreignpolicy.com/2016/06/22/win-or-lose-the-brexit-vote-shows-how-hard-it-is-to-defend-the-eu/ [https://perma.cc/2NGM-H2DP] (describing immigration's role in the Brexit vote); Sarah O'Connor & Gonzalo Viña, *What Will Brexit Mean for Immigration?*, FIN. TIMES (June 24, 2016), http://www.ft.com/cms/s/0/a874de26-34b2-11e6-bda0-04585c31b153.html#axzz4IRtKRKrL [https://perma.cc/3MJH-EJKG] (elaborating on immigration policy after Brexit).

Miller's *Strangers in Our Midst* seeks to balance citizen apprehensions about regulating, integrating, and potentially naturalizing millions of newcomers, while meeting international obligations and safeguarding the basic human rights of all migrants.[5] Miller begins and concludes his account of immigration regulation, integration, and naturalization from what he describes as both a 'communitarian' and 'social democratic' perspective.[6] As a communitarian, he disavows the idea that 'a political philosopher could lay down' a single immigration policy 'as the just or correct policy for all the liberal democracies (let alone all societies) to pursue.'[7] He is adamant about the value of national identity grounded in the shared historical experiences of people with memories and obligations to one another that extend into the past, are remembered today, and extend into the future.[8] As such, he challenges the notion that there is a universal prescription for how diverse nations should think about or regulate immigration and naturalization.

It should come as no surprise to the reader, then, that Miller writes with a particular interest in the challenges that mass migration has posed for Great Britain and its European neighbors in recent years. Miller's work often begins from the vantage point of the citizen of European states witnessing the mass movement of migrants across the sea and through border-control posts.[9] Here, he prefaces his discussion with the statement that in 'European societies, large majorities of citizens wish to see levels of immigration reduced.'[10] Miller emphasizes the salience of this concern in his home country of Britain, where anti-migrant pressures fueled calls for UK independence from the European Union.[11]

Concerns about the future of border controls; interior immigration regulation; social, cultural, and civic integration; and naturalization requirements are front and center in Miller's book. *Strangers in Our Midst* also shows some concern for the distinct challenges that North Americans have faced with long-term unauthorized immigrant settlement over several generations and the United States' long history of integrating newcomers.[12] Miller is aware that despite political polarization in the immigration debate

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5. David Miller, *The Migration Crisis: How Should European States Respond?*, DEP'T POL. & INT'L REL. KNOWLEDGE EXCHANGE, OXFORD U. http://www.politics.ox.ac.uk/ke-feature/the-migration-crisis-2015-how-should-european-states-respond.html [https://perma.cc/5JJF-U399].

6. MILLER, *supra* note 3, at 161.

7. *Id.*

8. *Id.* at 26–28.

9. *See* DAVID MILLER, ON NATIONALITY 2–4 (1995) (posing a series of questions related to the legitimacy of nationality-based immigration and territorial policies).

10. MILLER, *supra* note 3, at 1.

11. *Id.* at 1–2; Will Somerville, *Brexit: The Role of Migration in the Upcoming EU Referendum*, MIGRATION POL'Y INST. (May 4, 2016), http://www.migrationpolicy.org/article/brexit-role-migration-upcoming-eu-referendum [https://perma.cc/JE9K-MWC7].

12. MILLER, *supra* note 3, at 4–5.

in the United States, public opinion 'is more evenly divided between supporters and opponents.'[13] Here, Miller offers some valuable insights into the challenges associated with the influx of asylum seekers for states seeking to maintain credible and consistent immigration policy commitments. Religious differences between immigrants and multigenerational citizens feature more heavily in Miller's discussion of cultural integration than in comparable works about immigration to the United States.[14] His concern that adherents of minority religions 'should have the freedom and opportunity to create places of worship that meet their religious needs' while respecting 'the existing character of public space' still has some resonance in the United States in the wake of the Ground Zero mosque controversy.[15] However, given the United States' long history as a nation of immigrants and more laissez-faire attitude towards civic integration, American readers may be more drawn to Joseph Carens's concern that demands for expansive accommodations by immigrants to the 'historic culture of the majority group' would interfere unjustly with their personal liberty.[16]

Readers versed in the political debate over immigration in the United States may also wonder why Miller devoted less attention in his work to the future of family-based immigration policies. People who apply to enter a state on the grounds of family reunification—which on average comprised 65.1% of all U.S. immigration visas issued between 2003 and 2012—are only mentioned in a single paragraph in Miller's discussion about the rights of immigrants.[17] Miller justifies this omission because the right to immigrate as a family member often depends on the sponsorship of a citizen or legal permanent resident and not on the immigrants themselves.[18] This point should not be sufficient to end discussion of this important immigration category if we are concerned with citizen interests in immigration selection, influences affecting the integration of immigrants, and pull factors that cause migrants to come to one country, rather than another, with or without

13. *Id.* at 2.

14. *Compare id.* at 146–50 (contemplating how religious values embedded in the national culture create difficulties for the cultural integration of immigrants with different religious views), *with* LIAV ORGAD, THE CULTURAL DEFENSE OF NATIONS: A LIBERAL THEORY OF MAJORITY RIGHTS 66–67 (2015) (deemphasizing the role of religious differences in modern American immigration debates).

15. *See* David S. Gutterman & Andrew R. Murphy, *The 'Ground Zero Mosque' Sacred Space and the Boundaries of American Identity*, 2 POL. GROUPS & IDENTITIES 368, 377 (2014) (observing that President Obama framed the legitimacy of the Ground Zero mosque in terms of First Amendment rights, while others 'question[ed] the 'wisdom' of constructing a mosque and suggested that the project be moved to a 'less sensitive'' location).

16. MILLER, *supra* note 3, at 135, 148; JOSEPH H. CARENS, THE ETHICS OF IMMIGRATION 78, 83 (2013).

17. MILLER, *supra* note 3, at 113; Michael J. Sullivan, *Legalizing Parents and Other Caregivers: A Family Immigration Policy Guided by an Ethic of Care*, 23 SOC. POL. 263, 265 (2016).

18. MILLER, *supra* note 3, at 113.

authorization. One of the central concerns of *Strangers in Our Midst* is whether 'states are obliged to weigh the interests of all human beings equally when deciding upon their policies, or whether they are legitimately allowed to give more weight to the interests of their own citizens.'[19]

Family reunification is an immigration-policy consideration that affects all citizens, in theory, who may have a potential interest in sponsoring a spouse or family member to come to their country.[20] In practice, it sets some citizens—who have continuing family ties to other countries through travel or immigration and who want expansive family-immigration policies—against others who have no eligible relatives to sponsor and who would prefer that these slots be reallocated to migrants with special skills, refugees, or asylum seekers.[21] Indeed, family reunification is related to one of the central concerns of Miller's book: how to attend first to one's own citizens in the construction of an immigration policy and the limits to this partiality.[22] Second, family immigration plays a role in another one of Miller's central concerns: the social and civic integration of immigrants. In Miller's brief discussion of the family and immigration, he notes that conceptions of family life that are foreign to the society in question—like gender inequality, polygamy, and forced marriages—can hinder immigrant civic integration.[23] Conversely, American sociologists Alejandro Portes, Rubén Rumbaut, Richard Alba, and Mary Waters credit selective acculturation with upward socioeconomic assimilation and biculturalism among second-generation immigrant youth.[24] Ideally, through the process of selective acculturation, parents and children both learn the language and customs of their new country while remaining a part of an ethnic community that bridges adopted and inherited cultural influences.[25] Like Miller, Portes and Rumbaut insist on the incorporation of these communities into their adopted societies, decrying the preservation of cultural enclaves that 'weake[n] national solidarity.'[26] The process of selective acculturation depends on immigration policies that promote family unity within cultural institutions in which family

19. *Id.* at 11.

20. *See* CARENS, *supra* note 16, at 180–87 (describing people's interests in living with immediate family members and mentioning how states should respect those interests when possessed by their citizens).

21. *See* CARENS, *supra* note 16, at 186 (contending that other reasons could outweigh the family-reunification rationale of immigration policy).

22. MILLER, *supra* note 3, at 11.

23. *Id.* at 137. For a critical perspective on family-immigration policies that indirectly aim to prevent illiberal marriage practices, see CARENS, *supra* note 16, at 191.

24. ALEJANDRO PORTES & RUBÉN G. RUMBAUT, LEGACIES: THE STORY OF THE IMMIGRANT SECOND GENERATION 54 (2001); THE NEXT GENERATION: IMMIGRANT YOUTH IN A COMPARATIVE PERSPECTIVE 3 (Richard Alba & Mary C. Waters eds., 2011).

25. ALEJANDRO PORTES & RUBÉN G. RUMBAUT, IMMIGRANT AMERICA: A PORTRAIT 282, 388–89 (4th ed. 2014).

26. *Id.* at 389.

members work together across generations with the help of civic groups and schools to learn the local language and social norms.[27] Given the family's role in the integration process, it is important to develop a clear understanding of how different family-immigration policy alternatives might support or undermine broader policy goals, including a nation's self-understanding as an egalitarian society. This theme should be developed in more detail in a work that follows up on Miller's discussion of integration in *Strangers in Our Midst*.

Miller's *Strangers in Our Midst* is, in many ways, a direct response to the strong cosmopolitan argument that Joseph Carens made in *The Ethics of Immigration* for more inclusive immigration policies with minimal integration requirements as a nonideal solution and open borders as an ideal aspiration.[28] On the subject of immigrant integration, Miller defends policies, including government-sponsored civic education and high-stakes tests, to promote civic integration for the benefit of immigrants and citizens alike.[29] From an immigrant's perspective, he argues that migrants should welcome the opportunity to acquire government assistance equipping them with the linguistic, social, and political skills to take advantage of the resources of the society they are joining.[30] From the perspective of citizens and long-settled immigrants, he argues that integration is necessary to prevent illiberal practices from taking hold.[31] Further, if civic education is permissible for all children in school who are preparing for future adult citizenship, why should it not be expected of immigrants who are preparing for future citizenship?[32] Miller's case for civic-integration exercises is grounded in a broader philosophical argument about the obligations that citizens and newcomers owe one another as they become coparticipants in a system of social cooperation that transcends the differences emphasized in American and European immigration and naturalization debates.[33] This is a more universal philosophical argument that highlights national citizenship's role in defining and sharing the burdens and benefits of self-governance, which should appeal to a wider audience.

In crafting a 'social democratic' position on immigration policy, Miller first and foremost accepts the legitimacy of the division of the world into nation-states with borders and immigration controls. Miller's stance is in clear contrast to Joseph Carens's case for open borders on cosmopolitan

27. *See id.* at 388–89 (proposing a set of policies to promote selective acculturation).

28. *See generally* CARENS, *supra* note 16 (discussing a more inclusive immigration policy and advocating for open borders).

29. MILLER, *supra* note 3, at 136–37.

30. *Id.* at 136–37, 144.

31. *Id.* at 137.

32. *Id.*

33. *Id.* at 26–29, 139.

grounds at the end of his *Ethics of Immigration*.[34] Part of the reason for what he regards as a 'realist' approach is that he wants to help governments devise more effective institutions and policies to set priorities on whom to admit given limited resources.[35] The question of whether the resources of wealthy liberal democracies like Great Britain and the United States are sufficient to attend to the needs of both disadvantaged citizens and what Alexander Betts describes as 'survival migrants' is highly controversial.[36] Joseph Carens is likely correct to note that '[d]espite occasional political rhetoric that the boat is full, no democratic state can pretend that it could not take in many, many more immigrants than it does now without collapsing or even suffering serious damage.'[37] Still, Miller raises an important objection to Carens's view that open borders, or even more inclusive admissions policies on the part of wealthy liberal democracies, would dramatically expand equality of opportunity to poor people living in disadvantaged societies.[38] Other development and migration studies support Miller's position that the poorest of the poor, who would benefit most from the chance to live and work in an affluent liberal democracy, lack the savings, education, and social capital abroad to travel and take advantage of this opportunity.[39] Those who are able

34. *Compare id.* at 15–16 (highlighting the tension between Carens's coexisting commitments to cosmopolitan immigration policies and operating within a statist framework), *with* CARENS, *supra* note 16, at 288, 295 (suggesting that cosmopolitan immigration policies do not require completely rejecting the status quo).

35. MILLER, *supra* note 3, at 17–18.

36. ALEXANDER BETTS, SURVIVAL MIGRATION: FAILED GOVERNANCE AND THE CRISIS OF DISPLACEMENT 23 (2013). Betts defines survival migrants as "persons who are outside their country of origin because of an existential threat for which they have no access to a domestic remedy or resolution." *Id.*

37. CARENS, *supra* note 16, at 235.

38. *See* MILLER, *supra* note 3, at 48 ("We can reasonably assume that far more people will try to move from poor countries to rich countries than in the opposite direction. But the ones who have the resources—the savings and the education—that enable them to do this will be the ones who are already relatively advantaged in their societies of origin.").

39. *Id.* In the absence of remittances from family members living abroad, the poorest prospective migrants cannot pay the fees necessary to travel or, in the absence of prior permission to immigrate, to pay human smugglers to assist the migrants or prospective asylum seekers to reach their intended destinations. *See, e.g.*, ROBERT E.B. LUCAS, INTERNATIONAL MIGRATION AND ECONOMIC DEVELOPMENT: LESSONS FROM LOW-INCOME COUNTRIES 260–65 (2005) (providing case studies from Bangladesh, Pakistan, the Philippines, Thailand, and Albania explaining why migrants are often from lower middle class or even above-average, rather than extremely impoverished, segments of the population); ALLAN M. WILLIAMS & VLADIMÍR BALÁZ, MIGRATION, RISK AND UNCERTAINTY 110 (2015) ("Minimum resources are required to migrate, even if the advantages of migration as a means of diversifying against risk are recognised. The poorest do not tend to migrate."); Hein de Haas, *Turning the Tide? Why Development Will Not Stop Migration*, 38 DEV. & CHANGE 819, 832 (2007) (observing that only those with the requisite human, financial, and social resources are able to migrate); Dane Rowlands, *The Effects of Poverty, Environmental Degradation, and Gender Conditions on South-to-North Migration*, 25 CAN. J. DEV. STUD. 555, 557–58 (2004) (listing reasons why poverty is a "barrier to migration, including the costs of migration, impoverished persons' perception of risks associated with migration, and the

to migrate are often relatively advantaged in their host society, and, if they were educated at the state's expense, their departure may result in a drain of professional talent from the country of origin.[40] But we cannot easily discharge our responsibilities to the poorest of the global poor in a way that will prevent them from seeking to migrate. Foreign development assistance designed to reduce the need for migration can actually have the opposite effect when it provides previously destitute prospective migrants with the resources to finance the journey, with or without authorization.[41]

Miller's postscript on the 2015 immigration crisis, written after the completion of the *Strangers in Our Midst* manuscript, appears to have brought Miller somewhat closer to Carens's position.[42] In the face of this crisis, Miller is more inclined to adopt Alexander Betts's definition of a 'survival migrant" beyond the parameters of what he calls 'the narrow Geneva Convention' to include all persons whose rights cannot be secured so long as they remain in their country of origin.[43] He is still cautious. Miller wants to hold on to the category of the more excludable 'economic migrant' and deter persons from leaving squalid but safe refugee camps to enter wealthy Northwestern European countries simply to seek a better life, 'turning their borders into a free-for-all.'[44] But in the end, Miller's 'weak cosmopolitanism' appears to have been expanded by the crisis to bear some real transnational redistributive content that limits a policy of partiality towards compatriots.[45] To this end, Miller supports 'a burden-sharing financial arrangement that redistributes resources to [other] states that carry the heaviest responsibility for processing arriving migrants.'[46] During the 2015 migrant crisis he saw a place for Britain in the EU 'as an insurance mechanism for states that find themselves in unexpected difficulties' resulting from global movements of capital or people.[47] Here, Miller seems to admit that much as citizens may want to express their will to national self-

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relative inability of impoverished groups to have communications or information regarding "the benefits of living elsewhere").

40. MILLER, *supra* note 3, at 48, 108–11.

41. *See, e.g.*. Filippo Belloc, *International Economic Assistance and Migration: The Case of Sub-Saharan Countries*, 53 INT'L MIGRATION, Feb. 2015, at 187, 198; De Haas, *supra* note 39, at 832–34 (arguing that foreign development assistance "raise[s] people's aspirations as well as their actual capabilities to migrate").

42. *See* MILLER, *supra* note 3, at 166–67 (suggesting his position defending the qualified right of states to close their borders "might seem to collapse when confronted with the physical realities of Europe in late 2015").

43. *Id.* at 169.

44. *Id.* at 168, 172.

45. *Id.* at 172–73.

46. *Id.* at 172.

47. *Id.* In light of support among his fellow British citizens for leaving the European Union on the eve of the June 23, 2016 UK referendum, Miller's support for the union appears tempered by skepticism that "there could be a future for Britain" within the EU "that keeps national democracy alive and well. Miller, *supra* note 4.

determination or their will to go it alone, it may be unwise for them to do so in an interconnected world. He supports state spending on training programs for migrants even if the end goal is repatriation so they can later rebuild their societies.[48] And he takes these positions in full awareness of their cost, their unpopularity with local citizens, and the probability that survival migrants will compete for jobs and housing with the disadvantaged citizens of host countries.[49]

The needs and interests of citizens whose generosity is being tested by the 2015 immigration crisis and the mass movement of newcomers into their homelands is still the central concern of Miller's work. Miller's defense of compatriot partiality and a far-reaching account of the special obligations citizens owe to their compatriots within political communities remains a valuable intervention into the literature on the political philosophy of immigration policy, which is typically written from the perspective of the necessitous migrant. He bases his defense of compatriot partiality in part on a compelling account of how human beings actually take on responsibilities according to their awareness of the needs of others arising out of preexisting give-and-take relationships.[50] At the individual level, we share an intuition that we have a unique responsibility to people that is only partly chosen, like the family we are born into and the children we bring into the world, whose needs we come to know intimately through our care and companionship. We also choose to enter into broader relationships with others in society arising from shared interests or to accomplish projects of mutual need and importance.

The challenge—for Miller and other like-minded defenders of national self-determination like Michael Walzer—is whether we can extrapolate commonly shared understandings of special relationships at the individual level to communities that are wider in scope, including nation-states.[51] Miller is convinced that members of a society can share associative obligations with one another—such as providing for health care and other social assistance for a member who cannot work—that they do not always owe to persons outside the community.[52] Moreover, Miller goes so far as to claim that the first obligation that a state bears is to 'protect and fulfill the human rights of its own citizens, with the implication that a state that fails to do so, despite

48. MILLER, *supra* note 3, at 172.

49. *Id.* at 172–73.

50. *See id.* at 24–25 (discussing moral-equality claims under which certain actors are given responsibilities for particular groups based on natural sentiments).

51. *See id.* at 25–26 (asking how the implicitly higher duties owed to a friend as compared to a mere acquaintance apply to the broader nation-state context); MICHAEL WALZER, SPHERES OF JUSTICE: A DEFENSE OF PLURALISM AND EQUALITY 35–42 (1983) (analogizing political communities to neighborhoods, clubs, and families).

52. *See* MILLER, *supra* note 3, at 26–27 (explaining the benefits of sharing these obligations).

having the necessary resources, is illegitimate.[53] By this logic, a wealthy state like Britain may be condemned for using resources that could be spent improving the welfare of its most disadvantaged citizens on military campaigns to protect the human rights of foreigners endangered by other governments or spending the money on foreign aid for noncitizens who are less well off than the poorest Briton. Miller is clear on this point: a state with a cosmopolitan governing coalition that wants to do more than what is absolutely necessary to protect the basic human needs[54] of noncitizens abroad must consult with its citizens and secure their explicit assent first or risk undermining social justice at home.[55]

The kind of nation-state that Miller is envisioning is a political community that has decided to extend expansive legal, political, and social-welfare rights to newcomers as prospective citizens and to respect cultural diversity.[56] It is not the nightwatchman state of the nineteenth century, which minimized its risks by forcing migrants to fend for themselves.[57] Nor for that matter is it the United States of today, with its limited social safety net and minimal public resources for integration, which denies recent immigrants some forms of social assistance.[58] Preserving the modern social-welfare state—and the relationships between citizens that Miller describes—requires a level of social trust and reciprocity that may be undermined by rapidly admitting too many immigrants as prospective citizens without a waiting period and sufficient political education in the interim.[59] Miller is not a restrictionist of the type that would seek to lower immigration levels and deport unauthorized migrants like the Federation for American Immigration Reform in the United States and Migration Watch in the United Kingdom.[60] But he also recognizes that irrational suspicions among citizens drive populist political movements that are undermining support for immigrant inclusion and redistribution in favor of the poor more generally.[61] For this reason, he supports integration policies that explicitly teach immigrants to meet the

53. *Id.* at 34.

54. *Id.* at 32.

55. *Id.* at 36.

56. *See id.* at 6–7 (explaining the cultural protections offered to incoming immigrants while acknowledging the inherent responsibilities that exist when becoming a part of a new political system).

57. *Id.* at 4.

58. *See* ORGAD, *supra* note 14, at 124 (portraying the American policy toward immigrant integration as "don't invest, don't expect").

59. *See* MILLER, *supra* note 3, at 10, 64 (acknowledging that trust levels tend to decline as societies become more diverse, and that an acclimation period may be necessary to develop the confidence among the citizenry that is necessary for productive political deliberation).

60. *How to Win the Immigration Debate*, FED'N FOR AM. IMMIGR. REFORM 4, 6–7 (June 2015), http://www.fairus.org/DocServer/research-pub/FAIR_HowToWin_2015.pdf [https://perma.cc/5Q9T-57BJ]; *What Can Be Done?*, MIGRATION WATCH UK (Mar. 21, 2016), http://www.migrationwatchuk.org/what-can-be-done [https://perma.cc/2SZM-AQRE].

61. MILLER, *supra* note 3, at 64.

expectations that their fellow citizens have of them, thereby demonstrating that they are contributing to their adopted societies in exchange for a pathway to citizenship.[62]

Interestingly, Miller recognizes that there is a class of immigrants that he calls 'particularity claimants' who have already established a relationship to a state that entitles them to enter before subsequent integration takes place within the host country.[63] One type of particularity claimant is analogous to what Rogers M. Smith calls persons whose identities were 'coercively constituted by past and present actions of the nations' and citizens' governments."[64] These particularity claimants have been so profoundly influenced by foreign military intervention, colonization, or environmental or economic exploitation that they cast their fate with the intervening country.[65] Some, like political theorist James Souter, would argue that the state owes these migrants entry and a pathway to citizenship as a form of reparation for past harm.[66] Miller acknowledges that the state that causes the harm—such as a country like America that invades Iraq and employs its people as interpreters, only to find them under threat in the face of a military withdrawal—is uniquely responsible for rectifying the harm in question.[67] However, he wants to avoid turning this admission of responsibility into a claim to immigration as a form of reparation. He argues that the state should always try first to rectify the damage that was done to them in their home country before granting them the right to immigrate permanently as a second-best alternative.[68] In the case of the military translators and other affected migrants who can never live in security as they did before the foreign intervention, it seems disingenuous to suggest that assistance from afar could be sufficient. Even Miller acknowledges that in some cases admission as a form of reparation is warranted.[69] This claim could be strengthened to state that any time an individual or a group sacrifices on behalf of a state that

62. *See id.* at 136–37 (justifying citizenship tests on the grounds that they delineate the host society's expectations of its citizens and equip immigrants with the "linguistic, social, and political skills" to succeed in the society).

63. *Id.* at 77.

64. ROGERS M. SMITH, POLITICAL PEOPLEHOOD: THE ROLES OF VALUES, INTERESTS, AND IDENTITIES 220 (2015).

65. *See* MILLER, *supra* note 3, at 77, 113–14 (describing different categories of particularity claimants and their corresponding justifications for claiming permanent admission).

66. James Souter, *Towards a Theory of Asylum as Reparation for Past Injustice*, 62 POL. STUD. 326, 339–40 (2014).

67. MILLER, *supra* note 3, at 114; *see also* Michael J. Sullivan, *Which Prospective Immigrants Are Political Communities Morally Obliged to Include*, J. IDENTITY & MIGRATION STUD., Autumn/Winter 2012, at 18, 30 (2012) (arguing that a state intervening abroad has special obligations toward a citizen of the affected country when, as after America's invasion of Iraq in 2003, the citizen has acted to benefit the intervening state and in doing so risked separation from her community of origin).

68. MILLER, *supra* note 3, at 114–15.

69. *Id.* at 115.

sought economic, military, or diplomatic advantages by intervening in its affairs, that individual or group ought to become eligible for shelter in the intervening country.

Miller also raises the possibility that there is a second type of particularity claimant who has self-integrated through extraordinary service to the state outside the ordinary immigration and naturalization process.[70] He suggests there is still a problem with rewarding noncitizens for exemplary contributions, even in the case of the military service of the Gurkhas who had served in the British army and in retirement wanted to move from Nepal to Britain.[71] In spite of their contributions to Britain's defense, which exceeded those of Britain's citizens in an age of voluntary military service, Miller suggests that the Gurkhas may only be owed 'something like 'the conditions for a comfortable life, rather than the right to immigrate as such. '[72] We can acknowledge that military service or other extraordinary contributions to the well-being of a state can be outweighed by extraordinarily adverse factors, like a violent criminal record, in ways that make the noncitizen particularity claimant somewhat less deserving. But in most cases, the very fact that a noncitizen has made a potentially sacrificial contribution to the defense of the state that exceeds that of most ordinary native-born citizens should decisively grant that person a right to live and benefit from the privileges of citizenship in the country he served.[73] Miller's quote from the French Foreign Legion is more fitting to the extraordinary service of a noncitizen volunteer than his own hesitant rejoinder: '[H]ow better to recognize and reward those who are willing to shed their blood for the country than to give them the right to live there (in the French case as full citizens)?"[74] Earlier, Miller asks whether immigrants need to earn their membership in an elaborate scheme of resource distribution, rights, and benefits, bound by a sense of belonging over time.[75] I argue in turn that military service is only one among many contributions that noncitizens are making that should be accepted as sufficient evidence of noncitizen self-integration and acceptance of the obligations of citizenship, as Miller defines them. In keeping with Miller's contention that each state, based on historical experiences, has a different view of what it means to be a citizen of that nation-state,[76] nonmilitaristic states should be able to choose to valorize peacekeeping, volunteer work, or civil-rights activism as contributions meriting

70. *Id.* at 114–15.

71. *Id.* at 115.

72. *Id.*

73. *See* Michael John Sullivan, *By Right of Service: The Military as a Pathway to Earned Citizenship*, 2 POL. GROUPS & IDENTITIES 245, 255–56 (2014) (highlighting the DREAM Act's military-service provision and advocating in favor of that path to citizenship).

74. MILLER, *supra* note 3, at 115.

75. *Id.* at 9.

76. *Id.* at 28–29.

membership in their polity. Fast-tracking forms of self-integration through service by particularity claimants can be in keeping with Miller's concern for citizen self-determination over the immigration policy process if citizens, through their representatives, deliberate about which values exemplify extraordinary forms of citizenship and predetermine a process in their immigration policies for honoring noncitizens who meet these criteria.[77]

But what about the case of irregular migrants who take it upon themselves to enter the country without permission or overstay their temporary worker visas with the intent of settling more or less permanently in the country? At the outset of his work, it would seem that Miller would be unwilling to entertain their claims to equal treatment, as, arguably, 'they are going to break the terms of the social contract' by bypassing the procedure ordained by citizens and their representatives for admission and integration.[78] Instead, Miller adopts a more lenient posture.[79] For a state to enjoy the territorial jurisdiction that he claims grants it the right to control movement of people in and out of the territory, the state must at the very least 'protect the human rights of all those present, whether legally or not."[80] Elsewhere, he argues that even '[b]y arriving at the border, or indeed crossing it illegally, the migrant is putting herself at the mercy of the receiving state,' making her vulnerable to the state's power and thereby granting her moral claims against it that noncitizens abroad do not share.[81] Like his more cosmopolitan interlocutors, including Joseph Carens, Ayelet Shachar, and Linda Bosniak, Miller is willing to entertain the argument that even irregular migrants acquire moral claims to legal permanent residence over time as they develop social ties and continually engage in a system of social cooperation by contributing to the well-being of their society.[82]

Unlike Carens and Shachar, for Miller neither time of residence nor social ties appear decisive in his reasoning for allowing irregular migrants to

77. *See id.* at 62–65, 69–70 (elaborating on the interaction between democracy, self-determination, and immigration).

78. *Id.* at 18.

79. *See id.* (arguing that individuals should be treated equally absent specific evidence that they will break the terms of the respective society's social contract).

80. *Id.* at 117.

81. *Id.* at 15.

82. *Id.* at 121. *See* LINDA BOSNIAK, THE CITIZEN AND THE ALIEN: DILEMMAS OF CONTEMPORARY MEMBERSHIP 105 (2006) (arguing that the concept of citizenship is no longer confined to political or civil domains, but additionally extends to the domain of economic justice); CARENS, *supra* note 16, at 160–61 (asserting that the theory of social membership provides the foundation for a moral claim to a legal right of citizenship); AYELET SHACHAR, THE BIRTHRIGHT LOTTERY: CITIZENSHIP AND GLOBAL INEQUALTIY 164–66 (2009) (recommending the adoption of a genuine-connection process to determine eligibility for citizenship). The argument concerning the moral significance of time spent in a territory between arrival and naturalization as preparation for citizenship has been developed in further detail by Elizabeth F. Cohen. Elizabeth F. Cohen, *The Political Economy of Immigrant Time: Rights, Citizenship, and Temporariness in the Post-1965 Era*, 47 POLITY 337, 341, 349–50 (2015).

stay.[83] Indeed, Miller urges that we guard against the assumption that the very fact that migrants break social ties by leaving their home country suggests that 'the losses involved in removal are so great as always to make it an injustice.'[84] He is willing to tolerate the deportation of long-term residents and separation of families to further 'the other goals that immigration policy is intended to achieve' on behalf of citizens and the state.[85] This becomes a problematic assumption when we distinguish the claims of younger, unauthorized immigrants that did not make the choice to migrate, and the strength of those immigrants' ties to what is now their only home, from their parents who made the decision to leave and retain ties abroad.[86] For Miller, time and social membership mean less than the extent to which an irregular immigrant has entered into a system of social cooperation where she is contributing to society through working, owning property, and—he might also add—caring for citizens that depend on her.[87] Miller's associative-obligations argument extends to contributing, irregular immigrants and requires as a matter of reciprocity that they be allowed to stay and continue to benefit from the fruits of their social labor.[88] At this point, we might wonder why, by the logic of his previous argument about particularity immigrants, Miller would not simply be content with remunerating irregular immigrants for their contributions—like the Gurkhas who entered legally and are now seeking entrance to Great Britain—and send them elsewhere to receive their benefits. But here, Miller insists that despite the problems associated with their decision to bypass selection procedures, immigration officials have the resources and should be able to launch an investigation to determine whether irregular migrants 'earned citizenship' in the same way as legally selected immigrants must: through social ties and economic contributions.[89] This is Miller's strongest statement about the need to recognize contributions and attachments as evidence of earned integration that merit a pathway to citizenship. It is a statement, for the sake of consistency, that he should apply to other particularity claimants who made the requisite contributions—including Gurkhas seeking resettlement and guest workers that want to stay beyond the terms of their contract in light of changed circumstances.

Despite Miller's assurances that he is open to a pathway to earned citizenship for contributing, irregular migrants, those looking for a stronger normative defense of irregular immigrant rights will be disappointed to find

83. MILLER, *supra* note 3, at 125.

84. *Id.* at 124.

85. *Id.*

86. *See* CARENS, *supra* note 16, at 46–47 (arguing that children who arrive to a state at a young age should have the same citizenship rights as the children who are born in that state).

87. MILLER, *supra* note 3, at 124.

88. *Id.*

89. *Id.* at 125.

that this does not preclude deportations, 'so long as the methods employed do not themselves violate human rights by virtue of their brutality.'[90] Miller indicates that he approves of the threat of removal as a penalty for unlawful residence—whereby unauthorized immigrants 'remain liable to deportation until their status is made regular, that is, categorized as permanent, conditional, or temporary by the state.'[91] Unauthorized immigrants in the United States and other countries without a pathway to amnesty. regularization, or adjustment of status will continue to suffer under this penalty until they are removed from the country; this is hardly in keeping with Miller's general position of sympathy for their plight. Moreover, Miller strongly disapproves of unauthorized immigration as a practice that is unfair to individual immigrants who attempt to enter through legal channels that are costly and time consuming and to citizens and administrators with an interest in the orderly selection, admission, and integration of newcomers into society.[92] But in keeping with the view that immigration violations are civil infractions that ought to be deterred rather than criminal offenses meriting punishment, Miller does not indicate that migrants should be imprisoned or punished severely for entering without inspection.[93] He views the economic hardships that prompted them to migrate as mitigating factors and denies that their presence threatens the rights of citizens or legal immigrants.[94]

In the end, it is clear—and not surprising given his strong stance in favor of citizen self-determination over admission, integration, and naturalization procedures—that Miller considers the behavior of unauthorized immigrants to be disorderly and unfair to immigrants who bore the cost and burdens of the legal process.[95] Despite the fact that he clearly values the social and economic contributions of long-term unauthorized immigrants as a form of good citizenship that ought to be rewarded, Miller indicates that it would be inappropriate to grant amnesty to former queue-jumpers without paying 'redemption.'[96] He rejects Linda Bosniak's suggestion that we forgive and forget the offense of unlawful entry and residence as a threat to the integrity

90. *Id.* at 117.

91. *Id.* at 120.

92. *Id.* at 117–18.

93. *See id.* at 117 (contrasting the justification for imprisoning criminals with the lack of justification for applying the same punishment to illegal immigrants); *see also* Immigration and Naturalization Serv. v. Lopez-Mendoza, 468 U.S. 1032, 1038 (1984) ("A deportation proceeding is a purely civil action to determine eligibility to remain in this country, not to punish an unlawful entry, though entering or remaining unlawfully in this country is itself a crime."). *But see* Padilla v. Kentucky, 559 U.S. 356, 365–66 (2010) ("Although removal proceedings are civil in nature deportation is nevertheless intimately related to the criminal process."); Juliet P. Stumpf, *The Process is the Punishment in Crimmigration Law*, *in* THE BORDERS OF PUNISHMENT: MIGRATION, CITIZENSHIP, AND SOCIAL EXCLUSION 58, 63–64 (Katja Franko Aas & Mary Bosworth eds., 2013) (recounting the Court's holding in *Padilla*).

94. MILLER, *supra* note 3, at 118.

95. *Id.*

96. *Id.* at 124–26.

of immigration procedures chosen by citizens and their representatives.[97] Instead, Miller suggests that some form of accounting for the offense of unlawful entry or visa overstaying should be put in place.[98] The contributions of those who have already performed an exceptional act of service on behalf of the state—like noncitizen soldiers—will be counted as recompense.[99] Failing this, Miller envisions that noncitizens who cannot prove they have contributed to society for long enough, or to a significant enough degree as judged by citizens in a future procedure, will be asked 'to undertake part-time military or civilian service for a suitable period of time.'[100] What Miller appears to be hinting at here is a full-fledged account of restorative justice for the social harm arising from immigration offenses, though only the vaguest outlines of this theory of restitution appear in this text. Still, Miller's demand for conditional amnesty—and an accounting for past immigration offenses—is a necessary outgrowth of a defense of citizen control of immigration regulation and enforcement procedures that will lead to predictable consequences for noncompliance in the future.[101] Some will argue that Miller is too lenient—on the one hand, he supports admission, integration, and naturalization procedures that will keep some migrants out.[102] On the other, he supports a conditional amnesty that will let some of those migrants who entered anyway but cannot meet these standards stay in the country—albeit without citizenship status unless they meet an integration requirement and pass a test.[103] A more conclusive response to this problem would be to craft more inclusive admissions requirements that any immigrant can meet provided that they comply with the law and work to the best of their abilities.

In light of Miller's tolerance for conditional amnesty and a pathway to legal permanent residence for irregular migrants, it is surprising that Miller departs from a strict construction of Michael Walzer's admonition against guest-worker programs.[104] After all, guest workers entered the country legally, following admissions protocols rather than taking matters into their own hands, so their priority and rights to adjust to legal resident status should always exceed the priority and rights of irregular migrants who circumvented this procedure because there was no other option available to them. Miller's

97. *Id.* at 126; Linda Bosniak, *Amnesty in Immigration: Forgetting, Forgiving, Freedom*, 16 CRITICAL REV. INT'L SOC. & POL. PHIL. 344, 347 (2013).

98. *See* MILLER, *supra* note 3, at 126 (suggesting that irregular migrants should be required to demonstrate their contributions to the host society before receiving amnesty).

99. *Id.* at 115, 126; Sullivan, *supra* note 73, at 257.

100. MILLER, *supra* note 3, at 126.

101. *See id.* at 127 (claiming that conditional amnesty is the best solution to accepting irregular migrants without undermining immigration procedures).

102. *See, e.g.*, at 128 (defending the use of citizenship tests to determine which migrants should be granted citizenship).

103. *Id.* at 124–29.

104. WALZER, *supra* note 51, at 61.

rationale for allowing citizens to set the terms of guest-worker programs in ways that might undermine their basic rights is based on a view that 'economic migrants' seeking better wages and working conditions in wealthy liberal democracies 'cannot claim admission as a matter of justice.'[105] Here, citizen interests clearly take priority. If a migrant does not face a clear and present threat to his physical security, leaving aside threats that might arise from economic deprivation and food insecurity, the only thing that can justify their admission is a calculation of 'mutual advantage' on the part of the citizen and the migrant.[106] Consequently, Miller holds that 'there are rights that belong to permanent residents that are not essential to temporary migrants.'[107] Citizens can—in the third category of permissible admission policies Miller outlines—enact immigration policies that force migrants to leave the country at the end of their labor contract without a transfer route to permanent residence.[108] Miller strongly supports the proposition that citizens can require migrants to accept contracts that do not guarantee their right to a family life.[109] This may result in separating guest workers from their spouses and children.[110] This would also seem to enable the kind of abuses that wealthy but less-than-liberal democratic countries that depend on large numbers of those workers inflict on temporary workers—as when Singapore forces guest workers to return home if they become pregnant.[111] Any 'temporary' guest-worker program that requires migrants to separate from their children for an extended period of time undermines a migrant's right to family life and destabilizes the family unit, raising the question whether this option should be available in the first place, even if migrants with no other options will take it.[112]

Throughout his discussion of guest-worker programs, Miller assumes that temporary migrants will maintain a static set of interests: 'Their primary purpose in migrating is to work and earn money that they can send or bring back home.'[113] If their needs and interests do not change over time as they develop relationships and ties in their host society, perhaps this is a fair deal for temporary migrants who do not have to bear the burdens of social

105. MILLER, *supra* note 3, at 95.

106. *Id.* at 105.

107. *Id.* at 98.

108. *Id.* at 96.

109. *Id.* at 98, 113, 199 n.3.

110. *Id.* at 98.

111. CARENS, *supra* note 16, at 111; Brenda S. A. Yeoh & Heng Leng Chee, *Migrant Wives, Migrant Workers, and the Negotiation of (Il)legality in Singapore*, *in* MIGRANT ENCOUNTERS: INTIMATE LABOR, THE STATE, AND MOBILITY ACROSS ASIA 184, 191–92 (Sara Friedman & Pardis Mahdavi eds., 2015).

112. GERALDINE PRATT, FAMILIES APART: MIGRANT MOTHERS AND THE CONFLICTS OF LABOR AND LOVE 70–71 (2012).

113. MILLER, *supra* note 3, at 98–99.

membership like social security or pension contributions.[114] The problem is one that Swiss writer Max Frisch wrote about guest workers in his own country: '[W]e asked for workers, but people came.'[115] These guest workers, initially motivated by the desire to accept whatever terms they were offered to improve their economic status, might fall in love with and seek to marry a local citizen at work.[116] They may get pregnant and give birth to a citizen child.[117] They may become involved in the communities where they live to the point that their social and economic contributions give rise to associative obligations on the part of society at large, notwithstanding the desire of citizens to limit the terms of guest workers' stays to maximize advantages for themselves.[118] So, to hold migrants to the terms of an initial contract that might have seemed advantageous at the time to the state, citizens, migrants, and employers that claim they cannot find enough local workers to accomplish necessary tasks in a wealthy, liberal, democratic country may be unjust. Miller allows that receiving societies can 'choose to allow temporary migrants to transfer to permanent resident status'—as is the case with the Canadian Live-In Caregiver Program—though he does not believe that justice to migrants requires this.[119] He indicates that this provision is 'anomalous given the program's aim.'[120] Failing to allow temporary migrants to adjust to permanent residency is unjust for the same reason that Miller believes that forcing someone to withdraw from a cooperation scheme arising from work, owning property, and so forth, would be a breach of society's obligations to its migrant participants.[121] This objection leaves aside the other powerful considerations already raised by Patti Tamara Lenard and Christine Straehle that guest workers will be afraid to assert their labor rights and join unions if they can be deported for noncompliance.[122] In

114. *Id.* at 99.

115. Hiroshi Motomura, *We Asked for Workers, but Families Came: Time, Law, and the Family in Immigration and Citizenship*, 14 VA. J. SOC. POL'Y & L. 103, 103 (2006).

116. *See* Yeoh & Chee, *supra* note 111, at 184–86 (introducing the issue of temporary workers meeting and falling in love with citizen workers).

117. *See id.* at 194 (noting a story of a migrant worker and citizen worker having a child together).

118. MILLER, *supra* note 3, at 124.

119. *Id.* at 99, 195 n.13.

120. *Id.* For a more limited defense of a similar position to Miller's regarding permissible restrictions on the right to family reunion of guest workers, see MARTIN RUHS, THE PRICE OF RIGHTS: REGULATING INTERNATIONAL LABOR MIGRATION 175–76 (2013). Ruhs recognizes a right to the protection of the family under Article 23 of the International Covenant on Civil and Political Rights and argues that any restriction of this right must therefore be based on 'strong arguments.' *Id.* at 175. He provides that guest workers should not be deprived of their right to family reunion for more than a few months, allowing that migrants should have to earn a minimum salary to bring in a family member or dependent to offset potential social costs to the state. *Id.* at 176.

121. MILLER, *supra* note 3, at 124.

122. Patti Tamara Lenard & Christine Straehle, *Temporary Labour Migration, Global Redistribution, and Democratic Justice*, 11 POL. PHIL. & ECON. 206, 215 (2012).

short, if Miller accepts that irregular migrants may have cause to adjust their status to legal permanent residence by earning legalization and a pathway to citizenship, there seems no reason to prevent legal guest workers from doing the same, provided their plans change, and they contribute in relationships with employers, families, and communities in their adopted country.

Conclusion

Voters in Britain have decided to leave the European Union, indicating their desire to regain more domestic control over trade and immigration policies.[123] In the United States, border control, interior enforcement, and immigration policies are important issues dividing the major parties and candidates for President in 2016 and their supporters.[124] At a time when voters in wealthy, liberal, democratic states like Britain and the United States are advocating policies on trade and immigration that are sometimes at odds with the views of politicians who want to stay the course and academics who want more inclusive immigration policies, David Miller offers a reasoned, balanced, and realistic case for a 'clear policy on immigration that can be set out and defended publicly," and 'effectively enforced. '[125] Miller offers a credible defense of immigration controls from a social–democratic perspective that is deeply concerned with the distribution of resources to less-advantaged citizens and legal permanent residents. Though the book is framed as a work of political philosophy,[126] *Strangers in Our Midst* may be profitably consulted by left-of-center politicians and advocates 'whose liberal instincts in the case of immigrants have continually to be reined in to avoid alienating their working and middle-class supporters, fearful that their government's immigration policies are inattentive to their immediate economic plight.[127]

Strangers in Our Midst may disappoint advocates of a stronger cosmopolitan defense of open borders inspired by Joseph Carens's more idealistic policy suggestions in *The Ethics of Immigration*. It may seem harsh to state that 'giving good reasons for their exclusion to those who are barred from entering' is any consolation to barred or deported migrants, or akin to

123. *See* Brian Wheeler & Alex Hunt, *Brexit: All You Need to Know About the UK Leaving the EU*, BBC NEWS (Oct. 2, 2016), http://www.bbc.com/news/uk-politics-32810887 [https://perma.cc/VH9J-LXBX] ("Critics say [the European Union] generates too many petty regulations and robs members of control over their own affairs.").

124. *See Clinton, Trump Supporters Have Starkly Different Views of a Changing Nation*, PEW RESEARCH CENTER 3–4, 24, 27–30 (Aug. 18, 2016), http://www.people-press.org/files/2016/08/08-18-2016-August-political-release.pdf [https://perma.cc/7H5R-34ML] (showing the differences in how each candidates' supporters view the relative importance of these and other major policy issues).

125. MILLER, *supra* note 3, at 160.

126. *See, e.g.*, *id.* at 13 (recognizing that the immigration issue should be considered from the perspective of political philosophy).

127. *Id.* at 160.

any form of cosmopolitan moral philosophy, 'weak' or otherwise.[128] But overall, Miller's argument is written with a great deal of sensitivity for the plight of irregular immigrants and asylum seekers. He is likely correct that it will not be popular among those who are inclined to be 'hawkish about immigration' on the right, even among those who agree with his views on border control, rapid assessment of asylum claims, and interior immigration enforcement to reassure citizens 'that the policy is going to be effectively enforced.'[129] Miller's suggestions in his chapters on 'The Rights of Immigrants' and 'Integrating Immigrants' are useful as a moderate policy response to those who would seek to build walls, bar migrants of a particular religion, and deport contributing members of society without even giving them the chance to earn the rights and responsibilities of legal residence and citizenship.

Miller recognizes the present and potential contributions of immigrants to the well-being of their receiving societies. He is motivated by considerations of reciprocity, rather than mere altruism, to allow irregular migrants who are already contributing to the system of social cooperation, through their work and community involvement, to earn legal status and citizenship. Reciprocity leads Miller to understand why extensive sacrifices should be rewarded with immigration benefits and eventual citizenship. This same concern should be extended to guest workers whose personal circumstances change while in their host country, and the citizens who depend upon their work, care, and companionship. A fuller account of care in relationships as a contribution to the scheme of social cooperation that gives rise to associative obligations and the role that family members play in the integration of new immigrants would only strengthen this argument. In short, academics, policymakers, ordinary citizens, and prospective migrants who want to understand why a fair-minded compatriot concerned with social justice at home and protecting the basic needs of migrants would offer a moderate defense of states' rights to set and enforce their own immigration policies would profit by grappling with Miller's argument.

128. *Id.* at 153.
129. *Id.* at 153, 160.

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Notes

Arbitration Unbound: How the Yukos Oil Decision Yields Uncertainty for International-Investment Arbitration*

I. Introduction

Multilateral treaties are becoming a prominent method for enabling international investments as globalization increases. However, negotiating the provisions of a multilateral treaty is difficult because multiple countries must agree on the terms while each seeks adequate protection for its own affairs and each may have different priorities. One example of a multilateral treaty signed by fifty-two nations is the Energy Charter Treaty (ECT). This treaty facilitates energy investments in foreign countries by binding multiple nations to the provisions of the treaty. With this collaborative agreement, research and development in the energy industry across the world is possible. International investments are necessary to keep up with the demand for energy, and therefore a uniform law is crucial to handle any disputes that may emerge.

A huge dispute arose under the ECT between an oil company and the Russian Federation. This resulted in the largest arbitration in history with $50 billion awarded to the oil company against Russia. Many celebrated the tribunal's award as a symbol that Russia's unethical domination tactics would not be tolerated, and the award gave investors assurance that international arbitration would adequately protect them against expropriation. However, Russia successfully appealed the award to a Dutch district court. In a surprising opinion that was recently released, the court quashed the entire arbitration award, claiming that the tribunal lacked jurisdiction to decide the case despite the arbitration provision in the ECT.

This Note argues that the Dutch district court's opinion leads to poor policy in international law and will deter the effectiveness of international arbitration in multilateral treaties. Whether the Dutch court was influenced by Russian pressures or not, the result will chill future investments in energy because investors cannot count on the protection that the arbitration provision usually provides.

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II. The Emergence of the Energy Charter Treaty

International law is 'virtually exploding"[1] and, correspondingly, the need for uniformity in laws and regulations is crucial. Multilateral treaties deposited with the Secretary-General of the United Nations are the primary source of international law.[2] Currently, over 550 multilateral treaties are deposited with the Secretary-General.[3] Once a treaty is adopted, the Secretary-General distributes certified true copies of the treaty for states to sign.[4] Once a country consents to be bound by the terms of the multilateral treaty, most commonly through a definitive signature, ratification, acceptance or approval, or accession, it becomes a party to the treaty.[5] For example, if the treaty determines that states provide signatures subject to ratification, there is no time limit after signing within which a state must ratify, but once ratified it is legally binding.[6] Some treaties also provide for provisional application, which ceases upon a nation's entry into force.[7]

One example of a multilateral treaty that requires ratification and includes a provisional application is the ECT. The ECT entered into force in 1998 and 'provides a multilateral framework for energy cooperation that is unique under international law[,] dealing specifically with inter-governmental cooperation in the energy sector."[8] The purpose of the treaty is to promote sustainable development and energy security through open and competitive energy markets, and to respect state sovereignty.[9] It is also designed to address the increasing need for uniform rules in the energy industry.[10] Recent historical events played a large role in the initiation of the ECT. The dissolution of the former Soviet Union in 1991 threatened energy transit systems, and, therefore, stability was needed to promote future

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1. Anne Peters, *The Growth of International Law Between Globalization and the Great Power*, 8 AUSTRIAN REV. INT'L & EUR. L. 109, 109 (2003).

2. TREATY SEC. OFF. LEGAL AFF. UNITED NATIONS, TREATY HANDBOOK iv (rev. ed. 2012) [hereinafter TREATY HANDBOOK] https://treaties.un.org/doc/source/publications/THB/English.pdf [https://perma.cc/8D7W-HLHQ].

3. *Id.* at 1. To view current multilateral treaties deposited with the Secretary-General, see *Multilateral Treaties Deposited with the Secretary-General*, UNITED NATIONS, https://treaties.un.org/pages/participationstatus.aspx [https://perma.cc/DC26-HMAD].

4. TREATY HANDBOOK, *supra* note 2, at 21.

5. *Id.* at 8.

6. *Id.* at 9.

7. *Id.* at 11.

8. ENERGY CHARTER SECRETARIAT, THE ENERGY CHARTER TREATY AND RELATED DOCUMENTS: A LEGAL FRAMEWORK FOR INTERNATIONAL ENERGY COOPERATION 13 (2004), http://diaviou.auth.gr/sites/default/files/pegatraining/1_ECT.pdf [https://perma.cc/5JRR-3NL2].

9. ENERGY CHARTER SECRETARIAT, INTERNATIONAL ENERGY CHARTER: AGREED TEXT FOR ADOPTION IN THE HAGUE AT THE MINISTERIAL CONFERENCE ON THE INTERNATIONAL ENERGY CHARTER ON 20 MAY 2015, at 5 (2015), http://www.energycharter.org/fileadmin/DocumentsMedia/Legal/IEC_EN.pdf [https://perma.cc/4V6K-NPTF.].

10. Saamir Elshihabi, *The Difficulty Behind Securing Sector-Specific Investment Establishment Rights: The Case of the Energy Charter Treaty*, 35 INT'L LAW. 137, 143 (2001).

investments from Western nations in Russia.[11] The Dutch Prime Minister called for a pan-European Energy Charter to address the concerns of investors seeking to invest in the former Soviet Union, leading to the establishment of the European Energy Charter in 1991.[12] This Charter lacked binding legal force, so the ECT was drafted and then signed in 1994.[13] The Treaty provides a dispute resolution mechanism, which increases confidence by investors, ensures investment, strengthens the financial community. and promotes international cooperation in a globalized economy.[14] As of today, the ECT has been signed by fifty-two states, the European Union, and the European Atomic Energy Community (EUROTOM)—thus, the signatories consist mainly of European countries, Japan, and Australia, but notably not the United States.[15]

The ECT is designed to encourage foreign investments by including standard investment-protection provisions. These protections to the investor include general, discrimination, and expropriation protections.[16] Additionally, the treaty includes freedom-of-transfer provisions and war and civil-disturbance protections, and states that any disparities must be construed in favor of the investor.[17] The dispute-resolution mechanisms under the ECT also favor investors because they establish the right to arbitrate, rather than limiting investors to litigation in local courts.[18]

A. The Necessity and Possibility of Broad Membership in the ECT

With fifty-two signatories, the ECT is the most expansive multilateral investment treaty.[19] However, multilateral treaties of any size are difficult to implement and sustain. So when foreign investment increased dramatically beginning in the late 1980s, the number of bilateral investment treaties (BITs) also increased. Before 1989, approximately 400 BITs had been concluded, but from 1990 to 2005, roughly 2,000 BITs were concluded.[20] One scholar attributes this dramatic increase to the 'victory of market ideology' and to

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11. Edna Sussman, *A Multilateral Energy Sector Investment Treaty: Is it Time for a Call For Adoption by All Nations?*, 44 INT'L LAW. 939, 954 (2010).

12. Elshihabi, *supra* note 10, at 143.

13. *Id.* at 143–44.

14. Sussman, *supra* note 11, at 954.

15. *Id.* *Constituency of the Energy Charter Conference Members of the Energy Charter Conference*, INT'L ENERGY CHARTER (Mar. 19, 2015), http://www.energycharter.org/who-we-are/members-observers/ [https://perma.cc/JTN6-3XX4].

16. Energy Charter Treaty, art. 10, para. 1, art. 13, para. 1, Dec. 17, 1994, 2080 U.N.T.S. 100.

17. *Id.* at art. 12, paras. 1–2, art. 14, para. 1.

18. *Id.* at art. 26, para. 3.

19. *See* THOMAS ROE & MATTHEW HAPPOLD, SETTLEMENT OF INVESTMENT DISPUTES UNDER THE ENERGY CHARTER TREATY 8 (2011) (showing that the ECT is "the most widely ratified investment protection agreement" and that it has "global reach").

20. Kenneth J. Vandevelde, *A Brief History of International Investment Agreements*, 12 U.C. DAVIS J. INT'L L. & POL'Y 157, 179 (2005).

the 'loss of alternatives to foreign investment as a source of capital' because of the debt crisis of the 1980s.[21] These reasons transformed the prior hostility towards foreign investments into a desire to attract it. This led to investment provisions being included in multilateral treaties or trade agreements.[22] Therefore, a multilateral agreement that would eliminate the need for thousands of separate BITs is an attractive option. However, negotiating and accepting such a multilateral agreement is not an easy task, and many failed attempts have already been made. For example, the 1990s Multilateral Agreement on Investment failed because even countries with identical provisions in BITs could not agree on provisions in the multilateral agreement.[23] Eventually, the parties abandoned negotiations.[24] The ECT is different in one crucial aspect—its focus is entirely on the energy sector rather than a broad multilateral agreement encompassing multiple sectors.[25]

As the population continues to grow, the demand for energy also grows. Energy infrastructure investments are predicted to increase drastically: 'to keep up with development needs, around US$45 trillion may need to be invested in the next 15 years.'[26] Because of this explosion in energy demand, uniform international law and protections in the energy sector are necessary to promote investments and global cooperation in joint ventures for energy development. Otherwise, countries will continue to separately protect their own energy resources in BITs, limiting energy research and development.

While countries could continue negotiating joint ventures country by country, a multilateral treaty would ensure that each country gets a fair bargain. This global cooperation benefits the energy industry more than others. For example, if two countries enter into a BIT, and investors from those countries want to work with a third country that is not a party to that BIT, the investors would not have adequate protection in the third country and would likely not pursue further engagement. This detrimentally reduces efficiency in research and development of energy technology.

Provisions designed to protect a country's sovereignty over energy resources are evident in the North American Free Trade Agreement (NAFTA). In that agreement, Mexico insisted on protections to respect energy principles manifested in its constitution and reserved the right to

21. *Id.* at 177–78.

22. *Id.* at 182.

23. *Id.* at 191.

24. *Id.* at 192.

25. *See supra* notes 8–9 and accompanying text.

26. THE GLOB. COMM'N ON THE ECON. & CLIMATE, BETTER GROWTH, BETTER CLIMATE: THE NEW CLIMATE ECONOMY SYNTHESIS REPORT, ENERGY 4 (2014), http://newclimateeconomy.report/2014/wp-content/uploads/sites/2/2014/08/NCE_Chapter4_Energy.pdf [https://perma.cc/J7J7-8UWK].

control investments in almost all energy sectors.[27] Mexico's restrictions resulted in few options for foreign investors in the energy sector through NAFTA.[28] Additionally, the United States' BITs traditionally created strategic exceptions for the energy industry, leaving a void in this investment sector.[29] For example, in a U.S. BIT with Argentina, 'the United States reserves the right to make or maintain limited exceptions to national treatment in the following sectors: energy and power production; use of land and natural resources.'[30] This protocol places Argentina at a disadvantage because the United States may deny national treatment to Argentine investors after Argentina invested in energy, power, and natural resources.[31]

Because of the gap that BITs left in the energy sector, the need for unified energy investment options was abundant and, therefore, the ECT was negotiated—to bind parties to fundamental norms in international energy investments.[32]

B. Major Provisions of the ECT

The provisions in the fifty articles of the ECT aim to reach the goal stated in Article 2: to 'establish[] a legal framework in order to promote long-term cooperation in the energy field.'[33] There are two main differences between the ECT and traditional BITs: first, its provisions focus on the characteristics of the energy sector, and second, it uses specific language about rights or prohibitions rather than general language normally used in BITs.[34] Some of the main provisions in the ECT are protections regarding trade-related investments,[35] unfair competition,[36] expropriation,[37] subrogation,[38] transparency,[39] and compensation for losses.[40] Most notable

27. *See* North America Free Trade Agreement ann. 602.3, Dec. 17, 1992, 107 Stat. 2057, 32 I.L.M. 289 (1993) (reserving the right to control investment in oil, natural and artificial gas, and basic petrochemicals to the Mexican government).

28. Elshihabi, *supra* note 10, at 140.

29. *Id.* at 141–43.

30. Treaty Between the United States of America and the Argentine Republic Concerning the Reciprocal Encouragement and Protection of Investment, Arg.-U.S., Protocol 2, Nov. 14, 1991, 31 I.L.M. 128.

31. Elshihabi, *supra* note 10, at 141.

32. *Id.* at 143–44.

33. Energy Charter Treaty, *supra* note 16, at art. 2, para. 1.

34. Elshihabi, *supra* note 10, at 145.

35. Energy Charter Treaty, *supra* note 156, at art. 5.

36. *Id.* at art. 6.

37. *Id.* at art. 13.

38. *Id.* at art. 15.

39. *Id.* at art. 20.

40. *Id.* at art. 12.

for this Note, the ECT provides for settlement of dispute provisions between an investor and a contracting party[41] and includes a provisional application.[42]

C. *Dispute Resolution Under the ECT*

Dispute settlement is governed by Part V, Articles 26 through 28 of the ECT.[43] Article 26 allows the investor party to submit its dispute to the courts or tribunals in the country of the contracting party, or it can submit a dispute based on a previously-agreed-upon procedure.[44] However, an investor party will likely avoid bringing a claim to the local courts of the opposing party. Therefore, the ECT also gives investors the right to arbitrate so they do not have to 'resort to local courts [,] which may fail to be neutral or [be] subject to influence from the government.'[45] Article 26 states that, a with few limitations, 'each Contracting Party hereby gives its unconditional consent to the submission of a dispute to international arbitration or conciliation in accordance with the provisions of this Article.'[46] If the investor chooses to submit the dispute to international arbitration, it must consent to submit the dispute to either the International Centre for Settlement of Investment Disputes (ICSID), an arbitrator or arbitration tribunal as established under the United Nations Commission on International Trade Law (UNCITRAL), or to a proceeding under the Arbitration Institute of the Stockholm Chamber of Commerce.[47] The tribunal that is established must decide the issues in accordance with the ECT and the 'applicable rules and principles of international law.'[48] The awards are binding upon the parties.[49]

Another provision, which gave rise to much discussion and controversy, is the Provisional Application of Treaty Obligations provision in Article 45 of the ECT. It states in relevant part 'each signatory agrees to apply this Treaty provisionally pending its entry into force for such signatory in accordance with Article 44, to the extent that such provisional application is not inconsistent with its constitution, laws or regulations.'[50] Article 44 states that the '[t]reaty shall enter into force on the ninetieth day after the date of deposit of the thirtieth instrument of ratification, acceptance or approval thereof, or of accession thereto, by a State.'[51] Basically, this means that treaty obligations take effect even before a nation's formal ratification or

41. *Id.* at art. 26.
42. *Id.* at art. 45.
43. *Id.* at art. 26–28.
44. *Id.* at art. 26, para. 2.
45. Sussman, *supra* note 11, at 956.
46. Energy Charter Treaty, *supra* note 156, at art. 26, para. 3(a).
47. *Id.* at art. 26, para. 4(a)–(c).
48. *Id.* at art. 26, para. 6.
49. *Id.* at art. 26, para. 8.
50. *Id.* at art. 45, para. 1.
51. *Id.* at art. 44, para. 1.

accession to the treaty. Provisional applications are often used in situations where implementing a treaty is urgent to the country, the treaty is certain to obtain approval, or the negotiators wish to circumvent political obstacles to approval.[52] However, a state may choose to forego the provisional application—Article 45 states that 'any signatory may, when signing, deliver to the Depository a declaration that it is not able to accept provisional application. The obligation contained in paragraph (1) shall not apply to a signatory making such a declaration. '[53] Also, any signatory may terminate its provisional application of the treaty by written notification.[54] However, the signatory remains obligated to apply Parts III and V of the Treaty—Investment Promotion and Protection, and Dispute Settlement—with respect to any investments made in the state during the provisional application for twenty years.[55] At least, this was how parties and scholars interpreted the treaty before the Yukos Oil case, discussed below.[56] When a state provisionally applies a treaty that has entered into force 'the intention of the State would generally be to ratify, approve, accept or accede to the treaty once its domestic procedural requirements have been met. '[57] The Russian Federation was subject to the ECT under Article 45 because it signed the Treaty in 1994 and began the ratification process in 1996, but ratification has been postponed several times, and it did not register a declaration of nonapplication.[58]

III. Major Dispute Arising Under the ECT

Russia's provisional application of the ECT led to the largest arbitration award in history, against the Russian Federation in 2005.[59] The immense award was brought against the Russian Federation from three parallel arbitrations for the expropriation of OAO Yukos Oil Company (Yukos Oil): *Hulley Enterprises Limited (Cyprus) v. The Russian Federation*,[60] *Yukos*

52. Andrew Michie, *The Provisional Application of Arms Controls Treaties*, 3 J. CONFLICT & SECURITY L. 345, 346 (2005).

53. Energy Charter Treaty, *supra* note 156, at art. 45, para. 2.

54. *Id.* at art. 45, para. 3(a).

55. *Id.* at art. 45, para. 3(b).

56. *See infra* Part III.

57. TREATY HANDBOOK, *supra* note 2, at 11.

58. Alex M. Niebruegge, Comment, *Provisional Application of the Energy Charter Treaty: The Yukos Arbitration and the Future Place of Provisional Application in International Law*, 8 CHI. J. INT'L L. 355, 356 (2007).

59. Matthew Belz, Comment, *Provisional Application of the Energy Charter Treaty:* Kardassopoulos v. Georgia *and Improving Provisional Application in Multilateral Treaties*, 22 EMORY INT'L L. REV. 727, 727 (2008).

60. Hulley Enters. Ltd. (Cyprus) v. Russian Fed'n, Case No. AA 226, Final Award (Perm. Ct. Arb. 2014), http://www.pcacases.com/web/sendAttach/418 [https://perma.cc/6VZN-CLYP].

Universal Limited (Isle of Man) v. The Russian Federation,[61] and *Veteran Petroleum Limited (Cyprus) v. The Russian Federation*.[62] The claimants owned over 70% of Yukos Oil.[63] In its final awards on July 18, 2014, the tribunal ordered Russia to pay over US$50 billion in compensation for the expropriation of Yukos Oil[64]—this figure included damages for the value of the claimants' shares in Yukos Oil, the value of lost dividends, and interest on both.[65]

A. Background of the Yukos Oil *Case*

The majority shareholders of Yukos Oil brought this claim under the ECT to conduct arbitration under UNCITRAL rules.[66] Yukos Oil was Russia's largest company in the oil and gas sector and one of the most successful oil and gas companies by market capitalization in the world.[67] What makes this arbitration even more interesting is that it was, and continues to be, riddled with political overtones. The chairman of Yukos Oil in the 1990s launched the company into success by adopting Western technologies. Eventually, however, he 'fell out of favor' with Russia's President Putin.[68] The chairman was subsequently arrested in 2003 and served ten years in jail on charges of tax fraud and embezzlement.[69] There are vast claims that the Russian government bankrupted the company with punitive tax demands based on the chairman's politics.[70] Yukos Oil even argued before the tribunal that Russia expropriated Yukos Oil's assets by 'driving the company into bankruptcy through bogus tax claims in a vendetta

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61. Yukos Universal Ltd. (Isle of Man) v. Russian Fed'n, Case No. AA 227, Final Award (Perm. Ct. Arb. 2014), http://pcacases.com/web/sendAttach/420. [https://perma.cc/Z2VJ-JKR4].

62. Veteran Petroleum Ltd. (Cyprus) v. Russian Fed'n, Case No. AA 228, Final Award (Perm. Ct. Arb. 2014), https://pcacases.com/web/sendAttach/422 [https://perma.cc/U397-ANQC]; Belz, *supra* note 59, at 727 n.3; Martin Dietrich Brauch, *Yukos v. Russia: Issues and Legal Reasoning Behind US$50 Billion Awards*, INV. TREATY NEWS (Int'l Inst. for Sustainable Dev., Winnipeg, Can.), Sept. 2014, http://www.iisd.org/itn/wp-content/uploads/2014/09/iisd_itn_yukos_sept_2014_1.pdf [https://perma.cc/VGT6-W5LQ].

63. Brauch, *supra* note 62.

64. *Yukos Universal*, Case No. AA 227, paras. 1825–26.

65. Brauch, *supra* note 62.

66. *Focus Europe: The Arbitration Scorecard*, AM. LAW. (June 1, 2007), http://www.americanlawyer.com/id=900005482789/Focus-Europe-The-Arbitration-Scorecard [https://perma.cc/DWX9-4KXC].

67. *Yukos Universal*, Case No. AA 227, para. 108(4).

68. Stanley Reed, *Dutch Court Overturns $50 Billion Ruling Against Russia in* Yukos *Case*, N.Y. TIMES (Apr. 20, 2016), http://www.nytimes.com/2016/04/21/business/international/yukos-russia-50-billion-ruling.html [https://perma.cc/38AT-JGQC].

69. *Id.*

70. *See, e.g.*, Gregory L. White & Jeanne Whalen, *Arrest of Yukos Chairman Imperils Russia's Revival*, WALL STREET J. (Oct. 27, 2003), http://www.wsj.com/articles/SB106708186126770800 [https://perma.cc/5EHZ-VM2M] (linking the arrest of Yukos's chairman to President Putin's concerns over the chairman's rising political power and discussing other instances where wealthy businessmen were "driven into exile" because they interfered with politics).

against [its] founder."[71] Eventually, Yukos Oil's assets were nationalized and acquired by two other Russian state-owned companies.[72]

The claimants alleged that Russia breached the ECT in its criminal prosecutions against the company, tax reassessments, fines and asset freezes, an annulment of a merger, and harassment of executives, among other things.[73] According to the claimants, the Russian Federation's acts breached its obligations under Article 10(1) and Article 13(1) of the ECT as a 'deliberate and sustained effort to destroy Yukos, gain control over its assets and eliminate [its Chairman] as a potential political opponent."[74] Russia argued that the ECT is not binding because Russia has not yet ratified it, even though it had applied the ECT provisionally.[75] The provisional application of the ECT applies as long as it is not in conflict with domestic law.[76] When Russia signed the Treaty, it did not declare that its domestic laws were in conflict with the provisional application of the ECT.[77] Therefore, the critical issue in the arbitration was whether or not 'the Russian Federation waived its right to assert that provisional application conflicted with its domestic law post-signature of the Treaty."[78]

The tribunal's interim awards ruling, rather than the final awards ruling, issued on November 30, 2009, discussed the tribunal's jurisdiction and whether the provisional application applied to the Russian Federation.[79] The tribunal held that the provisional application applies until sixty days after Russia notifies the depository of its intent not to ratify the Treaty, and that investments made during the provisional application period are protected under the ECT for twenty years after the provisional application period ends.[80] Further, Russia's argument that the provisional application provision is inconsistent with its domestic law also failed. The tribunal held that 'either the entire Treaty is applied provisionally, or it is not applied provisionally at all' and that the principle of the provisional application itself was consistent with Russian law.[81] To decide whether each and every provision of the

71. *Focus Europe: The Arbitration Scorecard*, *supra* note 62.

72. Brauch, *supra* note 62.

73. *Yukos Universal*, Case No. AA 227, at para. 108; Brauch, *supra* note 62.

74. *Yukos Universal*, Case No. AA 227, at para. 108.

75. Hulley Enters. Ltd. (Cyprus) v. Russian Fed'n, Case No. AA 226, Interim Award on Jurisdiction and Admissibility, para. 247, (Perm. Ct. Arb. 2009), http://pcacases.com/web/sendAttach/419 [https://perma.cc/QN2R-5JDB].

76. Energy Charter Treaty, *supra* note 156, at art. 45, para. 1.

77. *Hulley Enters. Ltd.* Case No. AA 226 at para. 247.

78. Morgan R. Davis, Comment, *How Central Asia Was Won: A Revival of "The Great Game*, 36 N.C. J. INT'L L. & COM. REG. 417, 466 (2011).

79. Hulley Enters. Ltd. (Cyprus) v. Russian Fed'n, Case No. AA 226, Interim Award on Jurisdiction and Admissibility (Perm. Ct. Arb. 2009), http://pcacases.com/web/sendAttach/419 [https://perma.cc/QN2R-5JDB].

80. *Id.* at paras. 338–39.

81. *Id.* at paras. 311–12.

Treaty is consistent with domestic law would 'run squarely against the grain of international law."[82] By finding in favor of Yukos Oil, the arbitration tribunal sent 'a signal to all member-states that provisional application of the ECT is not without consequence. '[83]

In the final awards ruling, the tribunal discussed the Russian Federation's liability under Article 10(1) of the ECT—the fair and equitable treatment standard—and Article 13(1) of the ECT—expropriation of claimants' investment in Yukos Oil.[84] The tribunal held that the Russian Federation indirectly expropriated Yukos Oil and therefore breached Article 13(1) and that it does not need to consider whether it also breached Article 10 after deciding Russia already breached the ECT.[85] The proper compensation for a breach of Article 13 under the Treaty is the fair market value of the Investment expropriated minus contributory negligence amounts.[86] As noted, the total award amounted to over US$50 billion.[87] Various scholars and investors have contemplated the reality of collecting US$50 billion: some are optimistic that most of the award will be enforced and collected in European jurisdictions within ten years, while others are more skeptical.[88] However, there is no indication that Russia will voluntarily pay the award.

Many, not just the Yukos Oil shareholders, celebrated this decision. According to the head of Shearman & Sterling's International Arbitration Group, 'this is a great day for the rule of law: a superpower like the Russian Federation is held accountable for its violations of international law by an independent arbitral tribunal of the highest possible caliber."[89] The jubilation of the award was not long-lasting.

B. Russian Withdrawal from the ECT

In 2009, Prime Minister Putin rejected Russia's participation in the Energy Charter Treaty, likely as a response to the Yukos Oil lawsuit.[90] The Prime Minister terminated the provisional application of the ECT by stating

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82. *Id.* at para. 312.

83. Davis, *supra* note 778, at 465.

84. Yukos Universal Ltd. (Isle of Man) v. Russian Fed'n, Case No. AA 227, Final Award, paras. 1448–1574 (Perm. Ct. Arb. 2014), http://pcacases.com/web/sendAttach/420 [https://perma.cc/Z2VJ-JKR4].

85. *Id.* at paras. 1579–85.

86. *Id.* at paras. 1591–92, 1633.

87. Brauch, *supra* note 61.

88. *Id.*

89. *Enforcement Proceedings Launched Relating to Historic $50 Billion Award for Yukos Majority Shareholders*, SHEARMAN & STERLING LLP, http://www.shearman.com/en/services/practices/international-arbitration/yukos-enforcement-proceedings [https://perma.cc/FHB5-B3GE].

90. Sussman, *supra* note 11, at 964–65.

Russia's intention not to become a contracting party to the ECT.[91] This means that Russia intends not to ratify the Treaty. However, the Yukos Oil tribunal found that Russia is bound to the whole treaty by the Treaty's provisional application clause and that the arbitration provisions remain in force until 2029 for any investments prior to 2009.[92] Thus, the Treaty covers Russia's investments prior to 2009, but not investments made after 2009.[93] Also, there is some controversy about whether Russia's withdrawal from the ECT is even possible.[94] Interestingly, Russia continued participating in Energy Charter meetings and events after it withdrew until July 18, 2014, when the final decision of the Yukos Oil case was released.[95]

C. *Initial Implications of the Yukos Oil Case and Russia's Rejection of the ECT*

Since Russia's withdrawal, some scholars ponder 'whether without Russia the ECT can be a vehicle for a meaningful future multilateral treaty' and whether negotiations to alter the ECT to address Russia's concerns are possible.[96] Scholars are right to be concerned about Russia's potential withdrawal from the ECT. Russia is the world's largest energy supplier; it produces more gas than any other country and exports more oil than any other country except Saudi Arabia.[97] However, it seems that Russia's withdrawal will not have much of an impact on energy trade outside of Russia because the ECT is still the only binding energy agreement. Also, Russia does not want to step out of the energy investment arena completely: Russia is now proposing a new Energy Charter to replace the ECT.[98] President Putin proposed this new document to 'de facto replace the Energy Charter, but this proposal is seen by many as a tactical move to justify Russia's rejection

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91. *Id.*

92. Yukos Universal Ltd. (Isle of Man) v. Russian Fed'n, Case No. AA 227, Interim Award on Jurisdiction and Admissibility, para. 339 (Perm. Ct. Arb. 2009), http://pcacases.com/web/sendAttach/421 [https://perma.cc/G3GL-3HWM].

93. *Id.*

94. *See Russia's Withdrawal from the Energy Charter Treaty*, NORTON ROSE FULBRIGHT, (Aug. 2009), http://www.nortonrosefulbright.com/knowledge/publications/22691/russias-withdrawal-from-the-energy-charter-treaty [https://perma.cc/RE6D-RDLY] (noting disagreement as to whether the Treaty allows Russia to instantaneously withdraw its provisional application or requires that Russia ratify the treaty and then wait five years to withdraw).

95. Daria Nochevnik, *Russia and the Energy Charter Process: Which Way Forward?*, EUR. ENERGY REV. (Aug. 3, 2015), http://www.europeanenergyreview.eu/russia-and-the-energy-charter-process-which-way-forward/ [https://perma.cc/K8ZE-BMQJ].

96. Sussman, *supra* note 11, at 965.

97. *Russia's Withdrawal*, *supra* note 94.

98. Kirsten Westphal, *The Energy Charter Treaty Revisited: The Russian Proposal for an International Energy Convention and the Energy Charter Treaty*, GER. INST. FOR INT'L & SEC. AFFAIRS 4 (2011) https://www.swp-berlin.org/fileadmin/contents/products/comments/2011C08_wep_ks.pdf [https://perma.cc/3JBB-NFG2].

of the ECT.[99] The proposed document largely resembles the ECT, with only a few changes.[100] Overall, Russia takes issue with the current version of the ECT, but is open to continuous participation in a treaty that binds nations in international energy investments. But Russia's involvement in battling the enforcement of the arbitration that arose under the current energy treaty is far from over.

IV Annulment of the US$50 Billion Award by the Dutch District Court

President Putin is fighting the US$50 billion judgment against the Russian Federation and having success. On April 20, 2016, the Hague District Court annulled the tribunal's decision in the *Yukos Oil* case—an immense victory for Russia.[101] Although only the Dutch text is authoritative, this Note will refer to the English translation of the Hague District Court's opinion. The Dutch District Court has jurisdiction to review the arbitration award because The Hague was the seat of arbitration.[102]

A. Overview of the Court's Decision

The court held that the tribunal lacked jurisdiction under the ECT to make the decision because it was incompetent to take cognizance of the claims and issue the ensuing award. Therefore, the court quashed and reversed all three interim awards and corresponding final awards in the Yukos Oil arbitration.[103]

The Russian Federation asked that the court quash the awards of the Yukos Oil arbitration and based its claims on five grounds under the Dutch Code of Civil Procedure that, according to the court, each lead to reversal of the awards:

> (1) *a* (absence of valid arbitration agreement), in connection with which the Tribunal was not competent to take cognizance of and given an award on the defendant's claims; (2) *c* (the Tribunal overstepped its remit); (3) *b* (there were irregularities in the Tribunal's composition), (4) *d* (the Yukos Awards lack substantiation in several critical aspects); (5) *e* (the Yukos Awards are contrary to

99. *Id.*

100. *See id.* (describing the Russian proposals as sharing many points with and being "in accord" with the principles of the Energy Charter Treaty, if one views the proposals favorably).

101. Reed, *supra* note 68.

102. Rb's-Gravenhage [The Hague District Court] 20 April 2016 (Die Russische Federatie/Yukos Universal Ltd.) (Neth.), http://deeplink.rechtspraak.nl/uitspraak?id=ECLI:NL:RBDHA:2016:4229 [https://perma.cc/N8FC-RVDR], *translated in* The Hague Dist. Court, *Judgment of 20 April 2016 in Russian Federation v. Yukos Universal Ltd.* DE RECHTSPRAAK paras. 5.97–6.9 (Apr. 20, 2016) [hereinafter The Hague District Court], http://deeplink.rechtspraak.nl/uitspraak?id=ECLI:NL:RBDHA:2016:4230 [https://perma.cc/4RHA-YHZ5].

103. The Hague District Court, *supra* note 102, at para. 5.3.

> Dutch public policy and public morality, including in this case the fundamental right of the Russian Federation to a fair trial), since the Awards show the Tribunal's partiality and biases.[104]

In analyzing the competence of the tribunal, the court looked at the interpretation and requirements of Article 45 of the ECT, dealing with the provisional application,[105] in connection with Article 26 of the ECT,[106] providing for arbitration.

1. The Court's Analysis of Article 45.—The court rejected the tribunal's 'all or nothing' approach with regard to the phrase 'to the extent that such provisional application is not inconsistent with its constitution, laws or regulations' of Article 45 (the 'Limitation Clause") in favor of the piecemeal approach.[107] Therefore, it concluded that the Russian Federation was only bound by the individual treaty provisions not contrary to Russian law—meaning every provision must be analyzed independently for reconciliation with domestic law.[108]

To reach this interpretation of Article 45, the court analyzed the word 'such' in the phrase 'such provisional application' in context with Article 45(1) and 45(2)(c).[109] Article 45(1) reads: 'Each signatory agrees to apply this Treaty provisionally pending its entry into force for such signatory in accordance with Article 44, to the extent that such provisional application is not inconsistent with its constitution, laws or regulations. '[110]

> Article 45(2) states:
>
> (a) Notwithstanding paragraph (1) any signatory may, when signing, deliver to the Depository a declaration that it is not able to accept provisional application. The obligation contained in paragraph (1) shall not apply to a signatory making such a declaration. Any such signatory may at any time withdraw that declaration by written notification to the Depository.
>
> (b) Neither a signatory which makes a declaration in accordance with subparagraph (a) nor Investors of that signatory may claim the benefits of provisional application under paragraph (1).
>
> (c) Notwithstanding subparagraph (a), any signatory making a declaration referred to in subparagraph (a) shall apply Part VII provisionally pending the entry into force of the Treaty for such signatory in accordance with Article 44, to the extent that such provisional application is not inconsistent with its laws or regulations.

104. *Id.* at para. 4.2.
105. *Id.* at paras. 5.6–5.31.
106. *Id.* at paras. 5.32–5.95.
107. *Id.* at paras. 5.7–5.18.
108. *Id.* at para. 5.23.
109. *Id.* at paras. 5.7–5.18.
110. Energy Charter Treaty, *supra* note 156, at art. 45 para. (1).

The phrase in paragraphs 45(1) and 45(2)(c) are identical, except that paragraph 1 includes 'constitution' in the phrase 'to the extent such provisional application is not inconsistent with its *constitution*, laws, or regulations' and paragraph 2(c) does not.[111] The court rejected the tribunal's conclusion that 'such provisional application' referencing 'this Treaty" clarifies that the provisional application applies to the Treaty as a whole.[112] Paragraph 2(c) clearly applies provisionally only to Part VII, as it references in the text, whereas the tribunal treated the phrase in paragraph 1 as referring to the whole Treaty. The court looked at the interaction between the two paragraphs and concluded that the Limitation Clause means that the provisional application depends on compatibility of individual treaty provisions with domestic laws.[113]

The court went on to analyze the defendants' (the claimants in arbitration) claim that Article 45(1) and (2) required Russia to submit a declaration to not accept the provisional application, and it failed to do so.[114] Although the court concluded that the issue could not be raised in the reversal proceedings, it discussed the issue anyway to state that Article 45 does not require any submission of a declaration to rely on the Limitation Clause.[115]

2. The Court's Analysis of Article 26.—Because the court decided that only the provisions of the ECT that are consistent with Russian domestic law bind the signatory, it analyzed whether Article 26—the Settlement of Disputes Provision—was contrary to Russian law. The panel of arbiters obtained jurisdiction based on the arbitral provision in Article 26,[116] so if that provision were void the tribunal would have lacked proper jurisdiction.

The defendants in the district court, the Yukos Oil shareholders, argued that a provision of the ECT can only be incompatible with Russian law 'if the Treaty provision concerned is *prohibited* in national law T]here cannot be incompatibility if Russian law does not expressly provide for the treaty provision concerned.'[117] The court disagreed with this narrow interpretation of the Limitation Clause in Article 45—again, by focusing on the phrase 'to the extent that such provisional application is not inconsistent with its constitution, laws or regulations.'[118] Rather, 'the arbitral provision contained in Article 26 is also contrary to Russian law if there is no legal basis for such method of dispute settlement, or—when viewed in a wider

111. *Id.* at art. 45 para. (2)(c) (emphasis added).
112. The Hague District Court, *supra* note 102, at para. 5.12.
113. *Id.* at paras. 5.14–5.18.
114. *Id.* at para. 5.24.
115. *Id.* at paras. 5.26–5.31.
116. *See supra* notes 33–42 and accompanying text.
117. The Hague District Court, *supra* note 102, at para. 5.33.
118. *Id.*

perspective—if it does not harmonise with the legal system.'[119] The court based its opinion in large part on expert reports provided by both parties regarding relevant Russian laws.[120] The court examined provisions in Russia's Law on Foreign Investments and various other laws to conclude that the arbitral provision is contrary to domestic Russian law.

The court analyzed Article 9 and Article 10 of the Russian Law on Foreign Investments, both the 1991 and 1999 versions, because the tribunal stated that its jurisdiction depended on those laws.[121] The court held that Article 9 concerns civil law disputes arising from public law legal relations between foreign investors and Russia, but that it favors proceedings before the local Russian court.[122] Therefore, the provision did not offer an independent legal basis for arbitration.[123] In another convoluted argument, the court also stated that Article 10 of the Russian Law on Foreign Investments did not provide an independent basis for arbitration under the ECT because it only creates an option for arbitration, which is conditional on arbitration provisions in treaties and federal law.[124]

The court then claimed that its holding regarding inconsistency with local law 'is not altered' by the Russian government's remarks in its memorandum for the intended ratification of the ECT.[125] This explanatory memorandum stated, in relevant part:

> The provisions of the ECT are consistent with Russian legislation.
>
> The legal regime of foreign investments envisaged under the ECT is consistent with the provisions of the existing Law [. .] on Foreign Investment in [Russia], as well as with the amended version of the Law currently being discussed in the State Duma. [sic]
>
> [The regime of the ECT for foreign investments] does not require the acknowledgment of any concessions or the adoption of any amendments to the abovementioned Law. [sic][126]

Because the explanatory memorandum was primarily aimed at prompting the Duma, the Russian Parliament, to ratify the ECT, and because the parliament never ratified the ECT, it cannot be endorsed as the Russian government's views.[127] The court reasoned that these were very general statements, that they did not address the specific provisions of the ECT, and that the statements should be viewed with Parliament's intent on whether to

119. *Id.*
120. *Id.* at para. 5.34.
121. *Id.* at para. 5.42.
122. *Id.* at para. 5.51.
123. *Id.*
124. *Id.* at para. 5.56–5.58.
125. *Id.* at para. 5.59.
126. *Id.* (alteration in original).
127. *Id.* at para. 5.60.

ratify in mind.[128] Therefore, the arbitration clause of Article 26 has no legal basis in Russian law, leading to the conclusion that it cannot be applied provisionally.

3. The Court's Limited Scope of the Provisional Application.—The court then analyzed the tribunal's decision that because Russia signed a treaty containing a provisional application clause it consented to arbitration of disputes. Because the court already held that the Limitation Clause is not considered an 'all or nothing' provision, it, concluded that the signatory does not need to provisionally apply the arbitration if the application would be contrary to its domestic laws.[129] Article 26 could not be provisionally applied without ratification because the principle of separation of powers in the Russian constitution necessitates that the Russian Parliament must ratify treaties 'that supplement or amend Russian law by adopting a federal law.'[130] The court again relied on experts to make its determination about Russia's constitution and the separation-of-powers doctrine within it to conclude that the provisional application of the arbitration clause was incompatible with the constitution.[131] Because the provisional application of the arbitration clause conflicts with Russian law, the Russian Parliament must ratify the treaty for its provision to apply. The court's final conclusion that 'based only on the signature of the ECT, the Russian Federation was not bound by the provisional application of the arbitration regulations of Article 26 ECT' is the reason that the tribunal 'wrongly declared itself competent in the Arbitration to take cognizance of the claims and issue the ensuing award.'[132]

V Strengths and Weaknesses of the Dutch Court's Analysis

The court's decision has some positive qualities to it, but it has far more holes in its reasoning. Its holding that the provisional application of the Treaty applies to individual pieces, rather than to the whole Treaty, is somewhat rational, but only if coupled with a notice requirement. However, the explanation the court offers using textual and structural interpretations is far from clear. The court's analysis is extremely confusing (though that might be based on quick or sloppy translations) and seems to be searching for textual explanations to support a policy- (or politically) based explanation. The court is establishing a protection for countries that only provisionally apply the Treaty rather than fully ratify the Treaty to create a difference between provisionally applying versus ratifying the Treaty. The rationale seems to be as follows: allowing countries to apply the ECT provisionally is only meaningful if the provisional application is piece by

128. *Id.*
129. *Id.* at para. 5.72.
130. *Id.* at para. 5.73.
131. *Id.* at para. 5.94.
132. *Id.* at paras. 5.65–5.95.

piece. Otherwise, there is no difference between provisional application and ratification. While this would encourage more countries to provisionally apply the Treaty while deciding whether or not to ratify it, this protection needs to be coupled with notice to investors about which provisions are, or more importantly are not, consistent with domestic law. The signatory should be required to declare *ex ante* which parts of the Treaty, if any, it will not apply provisionally because they are inconsistent with domestic law.

It is irrational that a country can sign the Treaty and later, when convenient for the signatory and without prior notice to investors and other countries: (1) reject the provisional application of the Treaty without first filing a public declaration, and (2) argue piece by piece which provisions of the ECT are contrary to domestic law ex post facto. First, the investor presumably invested in a country in part because it was afforded the protections of the arbitration provision and other provisions of the ECT. The investors now are stripped of that protection because a signatory can provisionally apply only pieces of the Treaty and because the signatory can reject the provisional application of those pieces without notice to investors. Certain investors may, with good reason, choose not to invest in a country that they know has rejected the arbitration provision of the ECT. Therefore, this should be disclosed and not sprung upon an investor after a dispute has arisen.

The court's unnecessary arguments on the issue regarding whether or not the Treaty requires a declaration to withdraw from provisional application are not convincing. The court bases its analysis on the fact that paragraph 2 of Article 45 begins with 'notwithstanding, severing it from paragraph 1, and states that a signatory 'may' deliver a declaration. The court found that paragraph 2 does not contain a procedural rule requiring a declaration to prevent the provisional application of the Treaty in paragraph 1.[133] While generally those terms would be dispositive of a discretionary choice to submit a declaration, the defendants argued that 'if Article 45 paragraph 1 ECT would allow a Signatory to dodge provisional application at any given time and with immediate effect, the detailed provisions of Article 45 paragraph 3 ECT would not have any effect.'[134] Article 45(3)(a) and (b) detail the specific ramifications that occur as a result of a signatory's termination of the provisional application under 45(1)(a)—namely that the termination will take effect sixty days after the Depository receives the notification, and that the Treaty will remain effective for investments already made for twenty years following the date of termination.[135] To have a termination date from which to measure twenty years and to determine how long the Treaty remains effective, the signatory should be required to file a declaration. While the

133. *Id.* at para. 5.27.

134. *Id.* at para. 5.29.

135. Energy Charter Treaty, *supra* note 156, at art. 45, para. (3)(a)–(b).

court placed great importance on the how paragraphs related to each other when analyzing whether the Limitation Clause relates to the whole Treaty or to individual parts, the court, in this analysis, dismisses the relations between paragraphs and emphasizes textual arguments. The court must have addressed this question for the sake of a potential appeal, but the arguments are shaky.

Further, this dicta discussion outlining the reasons why a signatory does not need to present a written declaration of termination to the Depository is poor policy and cannot be reconciled with the court's holding that the provisional application refers to parts of the Treaty rather than the whole Treaty. If the Limitation Clause in the provisional application applies to the entire Treaty, as the tribunal held, then naturally no declaration is necessary because the country would not sign if any part of the Treaty was contrary to its laws. However, because the court held that the Limitation Clause refers to individual parts of the Treaty, it certainly follows that a declaration is necessary: otherwise no one would know which parts apply and which do not. The Yukos Oil shareholders assumed that they were protected by the arbitration provision in the ECT, but apparently they were not because Russia argued that the provision was inconsistent with national laws. The court's arguments against the declaration are particularly frustrating because in 2009, Russia made the 'required' declaration when it terminated the provisional application of the ECT by stating its intent not to become a party. By doing so, Russia conceded that an announcement is necessary. Yet, the court found that the statement to withdraw is unnecessary, so Russia's declaration meant nothing. This will have a chilling effect on international investments because investors will not be able to predict whether they are protected by the arbitration provision or not—the court destroys the uniformity that the Treaty and international law work toward.

Russia argued that by not ratifying the ECT, it was not bound by the investment-protection provisions. This is an illogical and hypocritical argument considering Russia pushed to ratify the Treaty and wanted to circumvent its national parliament with the provisional application to gain investments in the country.[136] Because of Russia's desire for inward investments, it 'used the possibility of the ECT provisional application and repeatedly returned to the consideration of this issue at the level of the State Duma.'[137] The State Duma is the lower house of the Federal Assembly, the parliament of the Russian Federation.[138]

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136. *See* Irina Mironova, *Russia and the Energy Charter Treaty*, INT'L ENERGY CHARTER (Aug. 7, 2014), http://www.energycharter.org/what-we-do/knowledge-centre/occasional-papers/russia-and-the-energy-charter-treaty/ [https://perma.cc/SG95-AJFH] (noting that the issue of the ECT's ratification was before the Duma several times).

137. *Id.*

138. *The State Duma of the Federal Assembly of the Russian Federation*, POLITIKA, http://www.politika.su/e/fs/gd.html [https://perma.cc/4SAT-PSFW].

The explanatory memorandum provides reliable evidence that the Russian government fought for the provisional application and ratification of the Treaty.[139] The court makes a valid point that, because Parliament did not ratify the Treaty, it could be inferred that the reason it did not ratify was that the Treaty is contrary to domestic law. However, the court does not provide the rationale behind the Russian Parliament's refusal to ratify.[140] The court would have a stronger argument if it could show that the Parliament's refusal was based on incompatibility with national law, weakening the government's statements in the memorandum. Otherwise, the Russian government's statements about the Treaty's compatibility with Russian law should be given more deference—the Russian government should serve as an authority of what is or is not contrary to domestic laws, especially in the face of Parliament's silence on the topic.

The piecemeal approach that the Hague District Court takes cultivates the difficulties already present in international law and international arbitration. This approach would allow every single country to dissect the content of the ECT and choose what they like. This is totally contrary to the essence of the Treaty. The purpose of the Treaty in the first place was to establish a legal framework to promote long-term cooperation among signatories, thereby creating international legal order and a level playing field.[141] The purpose of the arbitration provision before international tribunals was to increase investors' confidence, which would lead to investment and economic growth.[142] The court's decision has demolished these primary purposes of the ECT.

VI. Effects of This Decision on International Law

The effects of this decision have the potential to be far reaching. However, the former Yukos Oil shareholders are definitely going to challenge the decision. The shareholders immediately announced plans to appeal to the controlling Dutch appellate court,[143] and the lead counsel for the Yukos Oil shareholders stated: 'I am confident that today's decision will be reversed.'[144] The arbitration and the district court case already had huge political and global consequences, and the outcome of the inevitable appeal will exacerbate these issues.

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139. For the court's discussion on the explanatory memorandum, see *supra* notes 125–28 and accompanying text.

140. *See* The Hague District Court, *supra* note 102, at para. 5.60.

141. *See supra* Part II.

142. *See supra* subpart II(C).

143. Neil Buckley, *Russia Wins Legal Victory Over Yukos*, FIN. TIMES (Apr. 20, 2016), http://www.ft.com/intl/cms/s/0/2a23a352-06ce-11e6-a70d-4e39ac32c284.html#axzz46knwwoyD [https://perma.cc/TCM9-5S4K].

144. Reed, *supra* note 68.

The Yukos Oil shareholders have been fighting to enforce damages around the world since the tribunal released the final opinion of the arbitration. Each step of the appeal affects whether or not courts will enforce the arbitration award. Over the past two years, the former shareholders have begun enforcement proceedings in France, Belgium, Germany, the United States, and the United Kingdom.[145] Russia has been fighting each enforcement attempt since the tribunal's opinion, and will likely continue to do so with more legal strength since the district court's decision. In one case in 2015, France seized four hundred million US dollars in Russian assets carrying out the arbitration decision at the behest of the Yukos Oil shareholders;[146] however, just prior to the release of the Dutch district court opinion, a French court invalidated that seizure.[147] Enforcement proceedings have also begun in Belgium and Austria, but Russia made clear it would move to overturn those asset seizures, and 'will continue to fight in every court and every jurisdiction. '[148] The Yukos Oil shareholders have announced that despite the Dutch district court decision, they will continue efforts to seize Russian assets.[149] While it is up to the national courts to interpret the rulings, Russia is adamant that the seizure of assets should now cease.[150]

The outcome of the appeal will be extremely significant and have large implications for politics and future energy investment arbitration around the world. At least when it comes to investments in Russia, the arbitration provision that is meant to protect investors has lost its strength and enforcement power. Without this, the protections investors seek are virtually eliminated. If Russia is so powerful that other countries are frightened to enforce the awards or to uphold arbitrations in general, then the protections are worthless.

This Note does not intend to dive into the complexities of Russian politics, but it seems feasible that Russia's power and intimidation measures could deter district court judges in other countries from enforcing awards and asset seizures—particularly judges enforcing asset seizures in Eastern European countries that are still at the mercy of Russia's dominance.

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145. *Id.*

146. Uliana Pavlova, *France Seizes $1 Billion in Russian State Assets*, POLITICO (Apr. 11, 2016), http://www.politico.eu/article/france-seizes-1-billion-in-russian-state-assets/ [https://perma.cc/UZ33-82TS].

147. Angela Charlton, *French Courts Caught Up in Yukos Vs. Russia Assets Fight*, AP NEWS (Apr. 16, 2016), http://bigstory.ap.org/article/fbcd99bdf13043c39702b65378566454/french-courts-caught-yukos-vs-russia-assets-fight [https://perma.cc/U939-DCQR].

148. Cynthia Kroet & Uliana Pavlova, *Dutch Court Overturns $50 Billion Yukos Arbitration Ruling*, POLITICO (Apr. 20, 2016), http://www.politico.eu/article/dutch-court-overturns-50-billion-yukos-arbitration-ruling/ [https://perma.cc/59QZ-KGG8].

149. Maarten Van Tartwijk, *Dutch Court Quashes $50 Billion Award to Former Yukos Owners*, WALL STREET J. (Apr. 20, 2016), http://www.wsj.com/articles/dutch-court-quashes-50-billion-award-to-former-yukos-owners-1461141241 [https://perma.cc/RJ76-9872].

150. Buckley, *supra* note 1433.

Notably, in 2015 after the seizure proceedings in France, Austria, and Belgium, Russia threatened to retaliate against any European nations that uphold Yukos Oil's requests to seize Russian assets—the Russian Foreign Minister stated that Russian entities will go to Russian courts asking to seize the property owned by state-owned foreign companies.[151]

Some reporters claim that the breakdown of Yukos Oil and the arrest of its CEO in 2003 marked the period when the Russian government "began to take back control of the country's energy industry and sought to re-assert itself internationally as a force to be reckoned with rather than a crumbling post-communist shell."[152] The arbitration decision that was supposed to be final and binding marked a triumph against Russian expropriation, but time will soon tell how the Dutch district court's decision and the inevitable appeal will shape global politics and international arbitration.

VII. Conclusion

This district court case highlights what makes international arbitration, and international law in general, extremely complicated and filled with problems. If companies and nations want to conduct business internationally, then a system for dispute resolution under uniform international law is necessary. This applies in all areas of the law—from international investments to international insolvency proceedings. A country has to know what it is getting itself into when it signs a multilateral treaty, and a company should know what it signs up for when it enters into an international contract, each with international arbitration provisions. Not only has the Dutch district court decision ignored principles of international law and gutted the primary purposes of the ECT, it also has the potential to set an unfavorable precedent. The protection that the arbitration provision served to investors has been rendered meaningless, and the piece-by-piece approach to the application of international law allows no room for predictability for the parties involved. This decision will have a chilling effect on international investments in the energy sector—exactly the opposite of the intended goal of the Energy Charter Treaty.

—Lena U. Serhan

151. Robert Coalson, *Russia Threatens Tit-For-Tat Response to European Asset Inquiries*, RADIO FREE EUROPE, RADIO LIBERTY (May 10, 2016), http://www.rferl.org/content/russia-european-asset-seizures/27081579.html [https://perma.cc/ELN4-8YA3].

152. Mike Corder, *Dutch Court Quashes $50 Billion Yukos Shareholders' Award*, AP NEWS (Apr. 20, 2016), http://bigstory.ap.org/article/11f45a28420443c59df7dc6d6888c166/dutch-court-quashes-50-billion-yukos-shareholders-award [https://perma.cc/GBK7-X3Y4].

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Wind Energy's Dirty Word. Decommissioning*

Introduction

On July 21, 2015, British Member of Parliament David Davis stood up in the House of Commons and leveled a startling allegation against Britain's wind companies.[1] These companies, Mr. Davis said, were organizing themselves in a way that rendered them judgment proof against the costs of decommissioning their generation facilities and against nuisance claims brought by neighbors.[2] This could allow wind farms to be abandoned at the end of their operational lifespan, creating 'visual blight in perpetuity.'[3] The problem that Mr. Davis identified was the use of shell companies—where a large parent creates a subsidiary to set up and control the operations of a specific wind farm.[4] The problem with these subsidiaries, Mr. Davis said, is that they are marginally capitalized and often owe a large loan to the parent company.[5] This 'makes it impossible to bring litigation against a wind farm, simply because there is nothing to win from them.'[6]

Davis's speech brought some light to an imperative question that has, heretofore, been largely ignored on this side of the Atlantic. That question: What is going to happen to the thousands upon thousands of wind turbines sitting in fields across America when they reach the end of their useful life? More specifically, how are we ensuring that an industry largely dependent on federal and state subsidies, with an incredibly vast physical footprint, can afford to restore the sites where it has placed its massive installations? The short answer to the latter question is, unfortunately, that we are not.

Like in the United Kingdom, the production of wind energy is a relatively novel experiment in the United States.[7] As with many industries in their infancy, regulation of wind-energy production remains largely

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* I dedicate this Note to the memory of my grandfather, Hayes F. Stripling, Jr. A model West Texan, he saw opportunity and beauty in the land and people of a dry, dusty place. Once, he took me to see a wind farm and I listened to him wonder aloud about whether anyone would ever take the massive installations down. I hope that I inherited a fraction of his foresight. I am grateful to Professor Rod Wetsel for his expertise, enthusiasm, and helpful comments. Finally, I thank my fellow members of the *Texas Law Review*, particularly Vin Recca, Matt Sheehan, and Alex Hernandez, for their hard work in preparing this Note for publication.

1. 598 Parl Deb HC (6th Ser.) (2015) col. 1384–86 (UK).
2. *Id.* at col. 1384–85.
3. *Id.* at col. 1386.
4. *Id.* at col. 1384.
5. *Id.*
6. *Id.*
7. ERNEST E. SMITH ET AL., WIND LAW § 1.01[2] (2016).

undeveloped.[8] This is especially true in the realm of wind farm decommissioning. The useful life of a modern wind turbine is thought to be about twenty years.[9] Because of this, worries about cleaning up the massive wind installations now in place across the country remain problems for another day. Texas, the state with the highest wind-energy generation capacity,[10] imposes no requirement that wind farms be decommissioned at all.[11] Other producing states simply have blanket requirements imposing a duty on wind-farm owners to close their facilities but do not require any sort of financial guarantee of performance.[12]

This regulatory framework creates a system highly dependent on promises. In unregulated states like Texas, promises generally come in the form of lease provisions between a wind company and a landowner where the company promises to decommission and restore the surface of the land.[13] In states with decommissioning requirements, some variation of these promises is imposed on wind companies by statute or state regulation.[14] But a promise is only as good as the person that makes it. And promises are especially ineffective when held against companies that have long been bankrupt or otherwise judgment proof. Taking wind-company promises to clean up at face value largely ignores history. Of America's earliest wind farms, six were abandoned in Hawaii.[15] At one wind farm, '37 derelict wind turbines [sat] idle' for six years before being removed.[16] Early developers in California also walked away from several large projects[17]—some think that as many as 4,500 abandoned turbines remain in place in California.[18]

In closing his speech in Parliament, Mr. Davis called for the enactment of a bill that would require wind-farm operators to hold certain amounts of

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8. *See id.* § 1.01[3] (discussing the relative lack of regulation and permitting requirements for wind-energy projects in Texas).

9. *Id.* § 2.02.

10. RICHARD P. WALKER & ANDREW SWIFT, WIND ENERGY ESSENTIALS: SOCIETAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS 66 (2015).

11. JONATHAN VOEGELE & DANIELLE CHANGALA, VT. L. SCH. INST. FOR ENERGY AND THE ENV'T, DECOMMISSIONING FUNDS FOR RENEWABLE ENERGY FACILITIES 1 (2010).

12. *See id.* app. at 5 tbl.1 (citing CAL. PUB. RES. CODE § 25532 (2010) as an example of a state statute imposing general facility-closure requirements for energy-facility licensing, but requiring no bond or financial surety).

13. SMITH ET AL., *supra* note 7, § 2.12.

14. *See* VOEGELE & CHANGALA, *supra* note 11, at 1–3 (discussing several states' legislative or regulatory mechanisms that impose decommissioning requirements).

15. Tom Leonard, *Breaking Down and Rusting, Is This the Future of Britain's Wind Rush?*. DAILY MAIL (Mar. 18, 2012), http://www.dailymail.co.uk/news/article-2116877/is-future-Britains-wind-rush.html [https://perma.cc/T4MD-QMRP].

16. Alan Yonan, Jr.. *Turbines Come Down at Defunct Wind Farm*, HONOLULU STAR-ADVERTISER (Mar. 31, 2012), http://www.staradvertiser.com/business/turbines-come-down-at-defunct-wind-farm/ [https://perma.cc/J76R-TPMP].

17. WALKER & SWIFT, *supra* note 10, at 215.

18. Leonard, *supra* note 15.

cash in addition to posting bonds as security against potential liabilities.[19] Under the proposed bill, wind farms that fail to meet these financial requirements would lose their government subsidies—subsidies that amounted to more than £797 million in one year.[20] Mr. Davis's bill had its first reading on July 21, 2015 but received no further action from Parliament.[21]

This bill represents an example of what this Note will call 'decommissioning security. Decommissioning security refers to the idea that state regulation should require wind developers, early in the life of wind-farm projects, to provide financial assurances and comprehensive plans for decommissioning wind-farm installations. The United States is not completely devoid of regulations in this vein.[22] However, currently, these regulations have not been enacted broadly and are essentially absent in many of the largest wind-producing states.[23]

This Note seeks to illustrate the general failure of current law to ensure decommissioning of America's wind farms. Part I discusses the history and current landscape of domestic wind-energy generation. Part II focuses on the best practices in wind-farm decommissioning, aesthetic and environmental harms posed by abandoned wind farms, and the challenges and costs of removing wind turbines. Part III surveys the state of current law regarding decommissioning across U.S. jurisdictions. Finally, in Part IV, I discuss common pitfalls of current decommissioning law and suggest how these pitfalls are best avoided.

I. Wind Farms in the United States

Wind-power generation in the United States has a relatively short history. The story can generally be retold by examining two periods where the production of wind energy boomed in the United States. This Part will trace the history of these two great 'wind rushes. It will examine lessons learned from America's first wind rush and discuss the coming decommissioning crisis created by the present boom in wind-power production.

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19. 598 Parl Deb HC (6th Ser.) (2015) col. 1386 (UK).

20. *Id.*

21. *Public Nuisance from Wind Farms (Mandatory Liability Cover) Bill 2015–16*, HC Bill [62] (Eng.) http://www.publications.parliament.uk/pa/bills/cbill/2015-2016/0062/15062.pdf [https://perma.cc/R7BS-CV97]; *Public Nuisance from Wind Farms (Mandatory Liability Cover) Bill 2015–16*, PARLIAMENT.UK, http://services.parliament.uk/bills/2015-16/publicnuisancefromwindfarmsmandatoryliabilitycover.html [https://perma.cc/P4Y6-VSQZ].

22. *See* VOEGELE & CHANGALA, *supra* note 11, at 1–3 (discussing states that impose decommissioning requirements and require operators to pay into decommissioning funds or post financial sureties to cover estimated decommissioning costs).

23. *See id.* at 1 (noting that Texas and other states have no decommissioning requirements); WALKER & SWIFT, *supra* note 10, at 66.

A. Lessons from America's First Wind Rush

The United States currently finds itself in the midst of its second great boom period for wind-power production. The first such boom took place over a relatively brief period in the early 1980s. As the price of oil rose to unprecedented levels in the late 1970s, the federal government and individual states promulgated statutes and regulations to promote the development of renewable energy.[24] One such enactment was the federal Energy Tax Act, which 'provided tax credits for the private development of alternative energy technologies.'[25] As a result of these policies, the first utility-scale wind farms were installed in the United States in 1980.[26] State incentives in California placed it at the forefront of this wind rush.[27] In 1985, half of the world's wind-energy production was being produced in the state's Altamont Pass Wind Farm.[28] By 1986, there were about 6,700 operational turbines at Altamont.[29]

But this first wind rush was not destined to continue. Declines in oil and natural gas prices led to the end of favorable federal tax credits in 1985.[30] Between 1980 and 1986, the United States had installed 1,257 megawatts (MW) of wind power—between 1986 and 2000, the nation would only install another 1,301 MW.[31] The story of America's first great wind rush illustrates a key characteristic of the American wind energy industry: the industry has always relied on government incentives for its existence and expansion. But federal and state governments have played a large role in putting up America's wind farms while largely failing to ensure that these structures will be taken down in the future. As we will later see, due to lack of regulation, these governments could end up footing the bill to remove turbines as well.

As discussed above, federal and state subsidies dried up in the mid-1980s, effectively halting America's first wind-power boom. Changes in tax policies and state energy regulations, and the mechanical failure of turbines caused owners of several early wind farms to just abandon them.[32] Remnants of this first boom continue to provide examples of decommissioning gone wrong. Because wind farms have long operational lives—typically twenty

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24. SCOTT VICTOR VALENTINE, WIND POWER POLITICS AND POLICY 208–10 (2015).

25. *Id.* at 208.

26. *See id.* at 209 (observing that by 1980 there were "only eight megawatts of installed wind-power capacity in the country"); Office of Energy Efficiency & Renewable Energy, U.S. Dep't of Energy, *History of Wind Energy*, ENERGY.GOV http://energy.gov/eere/wind/history-wind-energy [https://perma.cc/73F3-H4MY].

27. VALENTINE, *supra* note 24, at 209–10.

28. *Id.* at 210.

29. *Id.*

30. *Id.*

31. *See id.* at 209 fig.7.2 (illustrating the yearly increases in installed wind-energy capacity from 1980–2012).

32. WALKER & SWIFT, *supra* note 10, at 215.

years[33]—installations from the first wind rush are generally the only projects that have reached an age where decommissioning issues are implicated. Although information about recent decommissioning is not well documented, several projects show that there is cause for grave concern. It is thought that there are six abandoned wind farms in the State of Hawaii and 4,500 abandoned turbines in California.[34] Most of the abandoned turbines in California are located in three large areas of early wind development—Altamont Pass (east of San Francisco), San Gorgonio Pass (near Palm Springs), and Tehachapi (north of Los Angeles, near Bakersfield).[35]

The best documented example of decommissioning gone wrong is the saga of the Kamaoa Wind Farm in Hawaii. The site was developed in 1987 with the installation of sixty Mitsubishi turbines on the South Point of Hawaii's Big Island.[36] However, the wind farm began to face difficulties when Mitsubishi quit making the older turbines.[37] Kamaoa was purchased in 2004 and remained partially operational for two years as operators cannibalized parts from some turbines to allow others to operate.[38] Finally, the turbines were taken out of operation in 2006 and sat idle 'with peeling paint and missing turbine blades' for six years.[39] This situation continued although Kamaoa's owner was in the process of constructing a new, fourteen-turbine wind farm several miles away.[40] The turbines were finally removed in 2012 at an estimated cost of $1 million.[41] The operator recovered only $300,000 from selling the turbines for scrap.[42]

B. Wind Farms Today and the Coming Decommissioning Challenge

While this example provides a glimpse of the potential threat of decommissioning failures, it does not adequately convey the scope of America's coming decommissioning challenge. This is because America's second great wind rush, lasting from 2000 until the present, has eclipsed the first rush on a scale that would have previously been unimaginable. Recall that from 1980 through 1986, the United States added 1,265 MW of installed

33. SMITH ET AL., *supra* note 7, § 2.02.

34. Bill Gunderson, Analysis/Opinion, *Some Basic Facts About Wind Energy*, WASH. TIMES (Mar. 16, 2013), http://www.washingtontimes.com/news/2013/mar/16/gunderson-some-basic-facts-about-wind-energy/?page=all [https://perma.cc/888V-4Y3D].

35. WALKER & SWIFT, *supra* note 10, at 215.

36. Yonan, *supra* note 16; *see also* Duane Shimogawa, *Apollo Energy Removing Old Wind Turbines on Big Island*, PAC. BUS. NEWS (Mar. 29, 2012), http://www.bizjournals.com/pacific/blog/2012/03/apollo-energy-removing-old-wind.html [https://perma.cc/5NNN-T296].

37. Yonan, *supra* note 16.

38. *Id.*

39. *Id.*

40. *Id.*

41. Shimogawa, *supra* note 36.

42. *Id.*

wind-energy capacity.[43] By contrast, from 2000 through 2012, 57,519 MW of installed wind-energy capacity were added in the United States.[44] The growth has taken place thanks to enormous increases in the scale of wind projects, both in terms of the number of turbines installed and in turbine size and power-generation capacity.[45] This enormous increase can also be attributed to the enactment and subsequent renewals of federal tax credits for renewable-energy products in recent years.[46] The second wind rush has changed American wind power from a cottage industry to one that reaches across the nation and makes a substantial physical imprint.

Turbines installed today resemble a traditional windmill, with rotor blades attached to a nacelle (which houses the electric generator) sitting atop a tower.[47] What is striking about these turbines, however, is their scale. By 2013, the largest turbines had rotor diameters of 164 meters, or 538 feet, and were mounted on towers as high as 190 meters, or 623 feet.[48] The circular area covered by these rotors when they turn is the size of three soccer fields and the distance across the circle is approximately the same as the length of two Airbus A380s.[49] The towers on which these rotors are mounted reach to approximately the same height as Seattle's Space Needle.[50] The average rotor diameter of turbines installed in 2014 was 99.4 meters.[51] These modern installations bear little resemblance to earlier turbines. In 1985, typical turbines had rotor diameters of only fifteen meters.[52] The increase in turbine size makes dismantling and decommissioning modern turbines a much larger challenge.

In addition to the enormous size of modern installations, the sheer number of wind turbines installed in the United States is also enormous. Today, there are more than 48,000 wind turbines installed in the United States.[53] These turbines are spread over more than 1,000 utility-scale projects

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43. *See* VALENTINE, *supra* note 24, at 209 fig.7.2 (illustrating the yearly increases in American installed wind-energy capacity over the past three decades).

44. *See id.* (illustrating that in 2012 there were 60,009 MW of wind-energy capacity in the United States whereas in 1999 there were 2,490 MW).

45. *See infra* notes 47–57.

46. *See* WALKER & SWIFT, *supra* note 10, at 59–60 (discussing congressional reauthorization of a renewable-energy tax credit and its effect on wind-project construction).

47. VALENTINE, *supra* note 24, at 35.

48. *Id.* at 36 fig.2.1.

49. *Id.*

50. *Id.*

51. Chris Mooney, *The U.S. Wind Energy Boom Couldn't Be Coming at a Better Time*, WASH. POST (Aug. 10, 2015), https://www.washingtonpost.com/news/energy-environment/wp/2015/08/10/the-boom-in-wind-energy-couldnt-be-coming-at-a-better-time/ [https://perma.cc/7ELK-H7WC].

52. VALENTINE, *supra* note 24, at 36.

53. *U.S. Wind Energy State Facts*, AM. WIND ENERGY ASS'N (Mar. 19, 2016), http://www.awea.org/resources/statefactsheets.aspx?itemnumber=890 [https://perma.cc/G73J-G5P9] (showing the number of wind turbines in each state).

installed in forty states and in Puerto Rico and Guam.[54] There are over 8,000 turbines installed in the State of California and over 10,000 installed in Texas,[55] a state with no decommissioning requirements whatsoever.[56] There are over 1,000 turbines installed in New York State and nearly 300 installed in Maine.[57] Gone are the days where wind installations were concentrated in the small handful of states offering tax incentives.[58] With the second great wind rush, wind-power generation capacity has been installed in states stretching contiguously across the country from Maine to California.[59] This expansion makes America's coming decommissioning challenge a national issue with costs and consequences that will touch the vast majority of Americans.

The enormous increases in both size and number of installed wind turbines mean that we face a huge decommissioning challenge in the future. Assuming the standard service life of twenty years, close to 29,000 wind turbines will reach the end of their useful lives between 2017 and 2030.[60] Part II of this Note will analyze the cost of decommissioning individual turbines, but, conservatively, per-turbine decommissioning costs amount to $25,500.[61] This fact means that within the next decade and a half, the American wind industry faces a decommissioning bill of at least $725 million. This amount does not include costs for the 11,000 turbines in the United States that have already reached the end of their useful lives,[62] or for the huge number of recently installed turbines[63] that will require decommissioning further into the future. And costs will continue to grow—

54. *Id.*

55. *Id.*

56. VOEGELE & CHANGALA, *supra* note 11, at 1.

57. *U.S. Wind Energy State Facts*, *supra* note 53.

58. *See* VALENTINE, *supra* note 24, at 209–10 (discussing the success of California's legislative efforts to incentivize wind-power development through tax credits and noting that "[b]y 1985, half of the world's wind power production came from the Altamont Pass Wind Farm" in California).

59. *U.S. Wind Energy State Facts*, *supra* note 53.

60. Katherine Ortegon et al., *Preparing for End of Service Life of Wind Turbines*, J. CLEANER PRODUCTION, Jan. 2013, at 191, 191, 193 (2013).

61. *See infra* notes 85–93 and accompanying text.

62. Ortegon et al., *supra* note 60, at 193.

63. VALENTINE, *supra* note 24, at 209 fig.7.2 (illustrating that over 55,000 megawatts of wind-energy capacity were added between 2000 and 2012); Ortegon et al., *supra* note 60, at 193 fig.1 (observing that more than 20,000 wind turbines were installed in the United States between 2005 and 2012); U.S. DEP'T OF ENERGY, 2015 WIND TECHNOLOGIES MARKET REPORT 3 (2016), http://energy.gov/sites/prod/files/2016/08/f33/2015-Wind-Technologies-Market-Report-08162016.pdf [https://perma.cc/4DHR-VUQS] (reporting 8,598 megawatts of wind-energy capacity added in 2015); U.S. DEP'T OF ENERGY, 2014 WIND TECHNOLOGIES MARKET REPORT 3 (2015), http://energy.gov/sites/prod/files/2015/08/f25/2014-Wind-Technologies-Market-Report-8.7.pdf [https://perma.cc/YXP4-UZ9T] (reporting 4,854 megawatts of wind-energy capacity added in 2014).

"current capacity goals will require the installation of approximately 126,500 new turbines over the next twenty years."[64]

All of this adds up to a huge decommissioning bill that will have to be paid in the not-so-distant future. Given the industry's dependence on tax credits and its history of inconsistent results,[65] it is fair to say that the question of whether the industry will be able to meet this coming challenge remains open. As Part III of this Note will describe, current regulatory frameworks largely fail to provide decommissioning security. Because of this reality, large portions of the costs and consequences of failed wind farm decommissioning may be passed on to landowners and states. Abandonment of energy production facilities is a real threat. In 2000, the Interstate Oil and Gas Compact Commission estimated that there were approximately 57,064 abandoned oil and gas wells waiting to be decommissioned with state funds.[66] This represented an abandonment rate of about 6.9% of active oil and gas wells in the United States.[67] With over 52,000 installed wind turbines, an abandonment rate of 6.9% would result in about 3,600 abandoned turbines. At a decommissioning cost of at least $25,500 per turbine,[68] this problem clearly poses an important policy issue.

II. Decommissioning: What It Is and What It Costs

This Part will briefly illustrate the decommissioning process by discussing why it becomes necessary and the process through which it is carried out. It will then go on to discuss the costs of decommissioning and lingering problems with estimating these costs.

Like most pieces of machinery, wind turbines have a finite useful life. During this useful life, a turbine is maintained, repaired, and even retrofitted. However, turbines eventually reach a point where continuing their operation is no longer technically or economically feasible. This result can be due to part failure and fatigue (as was the case with Hawaii's South Point wind farm) or where advances in turbine technology make the continued use of old turbines impractical.[69] Although many wind turbine studies fail to address

64. Ortegon et al., *supra* note 60, at 193.

65. *See supra* notes 24–31 and accompanying text.

66. Shannon L. Ferrell & Eric A. DeVuyst, *Decommissioning Wind Energy Projects: An Economic and Political Analysis*, ENERGY POL'Y, Feb. 2013, at 105, 112.

67. *Id.*

68. *See infra* notes 85–90 and accompanying text (discussing the approximate costs of decommissioning).

69. *See* Ortegon et al., *supra* note 60, at 192 (discussing how wind turbines reach the end of their useful lives through mechanical failure or where they "no longer satisf[y] the needs or expectations of a user"); Yonan, *supra* note 16.

the end of life of turbines,[70] it is undisputed that all turbines will, one day, come to the end of their operational lives and require decommissioning.[71]

A. The Decommissioning Process

The goals of decommissioning are 'to remove the installed power generation equipment and to return the site to a condition as close to its preconstruction state as possible.'[72] As discussed in the previous subpart, wind-farm installations are incredibly extensive in terms of their physical imprint on the land.[73] These installations include turbines themselves but also include a variety of transmission stations, power lines, and access roads.[74] The restoration of wind-farm land, therefore, entails a wide variety of tasks necessary to return the land to its original state. States have promulgated regulations that mandate specific requirements for decommissioning[75] and the Fish and Wildlife Service has published its suggested best practices for decommissioning.[76] This subpart will briefly outline general requirements for decommissioning and discuss the methods by which these requirements are accomplished.

There is no standard process for decommissioning a wind turbine.[77] But it is generally accepted that decommissioning 'includes the removal of the [turbines], the removal of aboveground and sub-grade structures, re-vegetation, seeding, [and] topsoil replacement.'[78] The largest component is removal of the turbines themselves, which essentially involves reversing the installation process, and requires much of the same equipment—including cranes.[79] The turbine deconstruction process requires removal of turbine blades, the nacelle, and the turbine tower; on-site separation of these modules (the turbine is not transportable otherwise); and transportation of the components to some sort of salvage or recovery facility.[80] Transportation

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70. *Id.* at 191.

71. Sosi N. Biricik & Noreen A. Haroun, *The Importance of Decommissioning Security*, LAW360 (Apr. 12, 2010, 12:02 PM), http://www.law360.com/articles/158582/the-importance-of-decommissioning-security [https://perma.cc/G8SE-3S2N].

72. *Id.*

73. *See supra* notes 47–52 and accompanying text (discussing the physical size of wind turbines).

74. Ferrell & DeVuyst, *supra* note 66, at 107.

75. *E.g.*, OKLA. STAT. ANN. tit. 17, § 160.14(B)(1)–(2) (West 2011).

76. U.S. FISH & WILDLIFE SERV., U.S. FISH & WILDLIFE SERV. LAND-BASED WIND ENERGY GUIDELINES 52 (2012), https://www.fws.gov/ecological-services/es-library/pdfs/WEG_final.pdf [https://perma.cc/NM28-H7ZT].

77. Ferrell & DeVuyst, *supra* note 66, at 107 n.3 (noting that there is "little published literature" regarding the specifics of wind-farm decommissioning).

78. Ortegon et al., *supra* note 60, at 192.

79. Ferrell & DeVuyst, *supra* note 66, at 107.

80. Ortegon et al., *supra* note 60, at 196.

itself can require as many as eight trucking trips.[81] The other major undertaking in decommissioning is the removal of the wind turbine's underground foundation. Modern turbine foundations can extend anywhere from twenty-five to fifty feet below the ground.[82] Other typical decommissioning steps include removal of electrical-transmission wires and installations, removal of roads, soil recovery and grading, and reseeding of native grasses.[83]

B. Decommissioning Costs

The exact cost of accomplishing these decommissioning efforts continues to be an open question. First, differences in turbines, siting locations, and decommissioning timelines make it impossible to lay down a per-turbine, decommissioning-cost figure as a general rule.[84] Further, there is hardly any public data available with which to estimate per-turbine cost.[85] However, some decommissioning-cost estimates have been made public and give us a glimpse at the size of the future costs that will be incurred to decommission America's wind farms.

81. *Id.* at 197.

82. *See Wind Turbine Foundations*, CONTECH ENGINEERED SOLUTIONS, http://www.conteches.com/markets/wind-turbine-foundations [https://perma.cc/3DME-CK3C] (advertising different turbine foundations, one that extends 25 to 35 feet below ground and another that extends 35 to 50 feet below ground).

83. U.S. FISH & WILDLIFE SERV., *supra* note 76, at 52.

84. *See* Ferrell & DeVuyst, *supra* note 66, at 111 tbl.3 (summarizing estimated net decommissioning costs for nine projects ranging from $54,000 and $651,725); Ortegon et al., *supra* note 60, at 193 tbl.2 (reporting that net decommissioning cost for three projects in Maine and South Dakota ranged from $11,450 to $34,942 per turbines); *see also supra* notes 47–64 and accompanying text (discussing variations in size, siting locations, and decommissioning timelines of modern turbines).

85. Ferrell & DeVuyst, *supra* note 66, at 110.

Table 1[86]

Project	Est. decomm. cost/ turbine	Est. salvage value/ turbine	Net surplus (cost)/ turbine
Maine—Hancock Wind Project—2014	$139,335	$84,047	($55,308)
Maine—Canton Mountain Wind Project—2013	$128,000	$79,729	($48,271)
Maine—Record Hill Wind Project—2012	$148,600	$133,658	($34,942)
Maine—Spruce Mountain Wind Project—2012	$117,000	$90,268	($26,732)
Maine—Rollins Wind Project	$651,725	$631,875	($19,850)
New York—Stony Creek Wind Farm—2012	$27,285	$9,791	($17,494)
New York—Bellmont Wind Park—2011	$56,600	$43,000	($13,600)
South Dakota—Buffalo Ridge II—2011	$90,805	$79,355	($11,450)
New York—Hounsfield Wind Farm—2011	$45,000	$46,000	$1,000
West Virginia—Pinnacle Wind Power Project—2011	$120,600	$122,145	$1,545

86. Ferrell & DeVuyst, *supra* note 66, at 111 tbl.3; CANTON MOUNTAIN WIND, LLC, *Section 29 Decommissioning Plan*, *in* CANTON MOUNTAIN WIND PROJECT (2013), http://www.maine.gov/dep/ftp/WindPowerProjectFiles/CantonMountainWind/section_29_decommission_plan/section_29_decommission_plan.pdf [https://perma.cc/7FPA-LVKX]; Letter from James S. Murchison, Project Manager, James W. Sewall Co. to James Cassida, First Wind Energy, LLC (June 27, 2014), http://maine.gov/dep/ftp/WindPowerProjectFiles/HancockWind/application/29_Decommissioning.pdf [https://perma.cc/78NC-ZYY8].

Table 1 sets out the findings of these reports. These cost reports begin by estimating the total cost to decommission the project per turbine installed—this is the cost of carrying out the decommissioning process discussed above. Against this figure, the reports subtract the estimated salvage value of the wind-turbine equipment.[87] The resulting figure represents the net, per-turbine cost to the developer of decommissioning the wind farm. Regulatory schemes that do provide decommissioning security by requiring some form of financial surety, discussed in Part III, require developers to provide a bond, letter of credit, or other surety in the amount of this net per-turbine cost.[88]

The average decommissioning cost to developers, based on these reports, is about $25,500 per turbine. It is important to point out, however, that the newest reports available, from the Hancock Wind Project and the Canton Mountain Wind Project, contain the highest estimated costs of the ten projects.[89] Turbines are getting larger and are more expensive to take down.[90] Only more data and experience can resolve the issue of improving cost estimations, but it is apparent from the data that we do have that decommissioning will cost tens of thousands of dollars per installed turbine.

A major issue with the accuracy of these reports is the difficulty of estimating salvage value. Salvage value is the amount that developers expect to realize from the sale of wind turbines for their scrap or material value.[91] As is apparent from Table 1, it plays a key role in the cost calculation. In some instances, reports claim that salvage value will completely cover decommissioning costs.[92] But the value of scrap is highly variable. The quality of the scrap itself, and the market value that it can command, are both volatile.[93] Add in the amount of time in question and we are only left with more uncertainties. These uncertainties create risk that net costs are being understated because of overly generous salvage values included in cost estimates.

The concept of salvage value also illustrates why requiring decommissioning security through financial surety is critical. This is because—as the economists consulted by the Oklahoma legislature in

87. Ortegon et al., *supra* note 60, at 193 tbl.2.

88. *See* CAL. ENERGY COMM'N, COMM'N FINAL REPORT: CAL. GUIDELINES FOR REDUCING IMPACTS TO BIRDS & BATS FROM WIND ENERGY DEV. 66 (2007) (discussing the need for decommissioning plans to include documentation showing financial resources).

89. *See supra* Table 1.

90. *See supra* notes 47–52, 87–89 and accompanying text.

91. Ortegon et al., *supra* note 60, at 193.

92. Ferrell & DeVuyst, *supra* note 66, at 111 tbl.3.

93. Ortegon et al., *supra* note 560 at 193.

crafting the Oklahoma Wind Energy Act[94] so brilliantly recognized—salvage value creates a distinction between different wind-farm components in the decommissioning process.[95] If one of the underlying principles of salvage value is that a developer will recoup much of their decommissioning costs through the sale of certain components, it is reasonable to assume that developers will decommission the 'high-value, low-cost' components of wind farms while ignoring 'high-cost, low-value' components.[96] This means a developer might remove a high-salvage-value turbine but leave its worthless concrete foundation intact. Or the developer may reclaim wire used to convey generated power but leave the footprint of an electrical substation. Salvage value incents partial decommissioning. From this reality comes the realization that '[w]ithout a bond, there can be no assurance of complete decommissioning.'[97] Unfortunately, as the next Part will illustrate, incomplete decommissioning remains very much a possibility because current law largely fails to require financial assurances of decommissioning.

III. Current Decommissioning Law

In terms of their current law regarding decommissioning, U.S. jurisdictions can be divided into three general categories: states that require operators to decommission but do not require operators to financially ensure decommissioning, states that do not require decommissioning whatsoever, and, finally, states that require operators to contribute to a fund or post a bond to cover decommissioning costs. In this Part, I will discuss the specifics of these regulatory approaches and analyze their effectiveness.

A. States with Naked Decommissioning Requirements

States with 'naked' decommissioning requirements have rules in place requiring a facility owner to decommission but do not require contribution to a state decommissioning fund or the posting of a letter of credit or performance bond. These regulations vary widely in scope. Some impose general requirements, which have been in place for decades, for the closure of energy facilities.[98] These regulations are not specifically tailored to regulate wind farm decommissioning.[99] Other states have enacted statutes that order various state commissions to promulgate regulations regarding

94. OKLA. STAT. ANN. tit. 17, § 160.11 (West 2011). This Act represents the most comprehensive and best crafted, state-level attempt to regulate and secure wind farm decommissioning currently in place in the country.

95. Ferrell & DeVuyst, *supra* note 66, at 110–11.

96. *Id.* at 111.

97. *Id.*

98. *See, e.g.*, CAL. PUB. RES. CODE § 25532 (West 2016) (establishing a required monitoring system for power facilities).

99. *See id.* (enacting general monitoring requirements for power facilities beginning in 1974, but not establishing tailored requirements for wind-energy facilities).

decommissioning.[100] However, in some of these states, the commissions fail to require operators to post financial guarantees for decommissioning.[101] Each of these variations of naked decommissioning requirements is ineffective because it relies on the continued existence and cooperation of operators. Lessons from Hawaii[102] and the Texas oil and gas industry teach us that this method of regulation does not ensure successful decommissioning.[103]

The State of California is the most prominent wind-power producer to fall into this category of jurisdictions. The state is home to 8,413 installed turbines.[104] The California Public Resources Code contains a general permitting requirement that facilities be closed but does not require operators to post a financial surety.[105] The statute that enables state commissions to regulate in this way became operative in 1975.[106] As such, it came into existence before the construction of the first wind farms in California.[107] The regulation operates as a blanket regulation designed to catch all energy-generation facilities without going in depth to specifically regulate any particular type of facility.[108] The California Energy Commission promulgated voluntary guidelines in 2007 that suggested that developers 'should submit a decommissioning and reclamation plan' when seeking a permit to construct a wind farm.[109] It is also suggested in the guidelines that the plan 'should also include documentation showing financial capacity to carry out the decommissioning, which 'usually' should take the form of "an escrow account, surety bond, or insurance policy. '[110]

North Dakota, similarly, has statutorily authorized its Public Service Commission to 'adopt rules governing the decommissioning of commercial wind-energy conversion facilities. '[111] The commission enacted regulations making '[t]he owner or operator of a commercial wind-energy conversion facility responsible for decommissioning that facility and for all costs

100. *See, e.g.*. N.D. CENT. CODE § 49-02-27 (2015) (requiring the state commission to adopt regulations governing the decommissioning of wind-energy facilities).

101. *See, e.g.*. OHIO ADMIN. CODE WL 4906-4-06 (2016) (mandating disclosure of costs for wind-energy projects, but not requiring wind-energy facilities to post a financial guarantee for decommissioning).

102. *See supra* notes 36–42 and accompanying text.

103. *See* discussion *infra* notes 125–35 and accompanying text.

104. *U.S. Wind Energy State Facts*, *supra* note 53.

105. VOEGELE & CHANGALA, *supra* note 11, app. at 5 tbl.1.

106. CAL. PUB. RES. CODE § 25532 (West 2016).

107. *See* VALENTINE, *supra* note 24, at 209 (describing the development of the first wind farms in California, which occurred in 1980–1981).

108. *See* CAL. PUB. RES. CODE § 25532 (mandating the establishment of a monitoring system for energy-generation facilities but not mandating a system that is specific to particular types of energy-generation facilities).

109. CAL. ENERGY COMM'N, *supra* note 88, at 66.

110. *Id.*

111. N.D. CENT. CODE § 49-02-27 (2014).

associated with decommissioning."[112] The North Dakota statute also required the commission to create rules to address "[t]he method of ensuring that funds will be available for decommissioning and restoration."[113] In response, the commission enacted a regulation whereby it "*may* require the owner or operator to secure a performance bond."[114]

The operative word in the above regulation is, of course, the word "may." The commission is not obligated to require any form of decommissioning security. Further, this election is not made until ten years into the lifespan of the project.[115] It appears that very few wind farms in North Dakota have reached this ten-year threshold.[116] However, in the best-documented case thus far, the commission appears to have merely required that the wind-farm operator issue a corporate guarantee to decommission instead of posting any variation of financial surety.[117] But corporate guarantees do not guarantee anything unless the corporation continues as a business.

Interestingly, Ohio's Power Siting Board recognizes the potential that inadequate decommissioning will become a future expense borne by the public but fails to require operators to post decommissioning sureties.[118] The board's rules for siting permits include a section that requires the operator to provide information regarding "public responsibility."[119] Contained within this section is the requirement that a permit applicant "describe the plan for decommissioning the proposed facility, including a discussion of any financial arrangements designed to assure the requisite financial resources."[120] While its framework for assuring decommissioning, which merely requires a description of some financial plan, is inadequate, the board's inclination to see decommissioning as a "public responsibility" is appropriate.[121] In states like those discussed in this subpart, the law—with varying degrees of strength—seeks to impose on operators a duty to

112. N.D. ADMIN. CODE § 69-09-09-02 (2008), http://www.legis.nd.gov/information/acdata/pdf/69-09-09.pdf [https://perma.cc/6ZAP-SUH8].

113. N.D. CENT. CODE ANN. § 49-02-27.

114. N.D. ADMIN. CODE § 69-09-09-08 (2008) (emphasis added), http://www.legis.nd.gov/information/acdata/pdf/69-09-09.pdf [https://perma.cc/EPW9-NM7J].

115. *Id.*

116. Bryce Martin, *State Delves into New Issue of Wind Farm Site Decommissioning; Sets Big Precedent*, BOWMAN CTY. PIONEER (Sept. 12, 2014), http://www.bowmanextra.com/2014/09/12/state-delves-new-issue-wind-farm-site-decommissioning-sets-big-precedent/ [https://perma.cc/EW2G-D67H] (stating that because of the state's ten-year deferment plan, North Dakota had, until recently, "never previously encountered" the issue of decommissioning security).

117. *Id.*

118. OHIO ADMIN. CODE WL 4906-4-06(F) (2015) (requiring applicants to describe any damage that the public might incur as a result of decommissioning the project).

119. *Id.*

120. *Id.* at 4906-4-06(F)(5).

121. *Id.* at 4906-4-06(F).

decommission owed to the public at large. However, it is important to recognize that merely imposing this duty on operators does not ensure that the public will not eventually bear the monetary responsibility for decommissioning wind farms.

This point is clearly illustrated through historical reference to an analogous situation involving regulation of the Texas oil and gas industry. Typical state oil and gas regulations have long imposed a duty to plug inactive oil and gas wells on well operators.[122] In the late-1980s, Texas law imposed a naked well-plugging requirement on operators similar to wind-farm decommissioning requirements enacted in the states mentioned above. Texas law required that '[t]he operator of a well shall properly plug the well when required in accordance with the commission's rules.'[123] However, the state's law did not require the operator to post a bond or other financial surety to cover plugging costs unless the operator sought an exception or extension from well-plugging requirements.[124] When the price of oil sagged in the mid-1980s, this regulatory framework left the state on the hook for a huge well-plugging bill.

The decline in oil prices in the mid-1980s resulted in widespread bankruptcies by oil and gas operators.[125] These bankruptcies were seen as directly responsible for the abandonment of unplugged wells across the state.[126] In 1987, a Texas Railroad Commission report identified more than 8,800 wells that were known or presumed to be unplugged.[127] The cost of plugging these wells was estimated at $53,202,000.[128] Unfortunately, Railroad Commission funds to meet this challenge were 'grossly inadequate.'[129] The commission's fund to plug wells was funded by a $100 application fee that accompanied any new drilling permit.[130] By the beginning of 1991, this fund contained only $700,000.[131] In September of 1991, the legislature authorized the creation of the Oil Field Clean Up

122. Donald N. Zillman & Ernest Smith, *Abandonment and Reclamation of Energy Sites and Facilities: The United States*, 10 J. ENERGY & NAT. RESOURCES L. 46, 51 (1992).

123. TEX. NAT. RES. CODE ANN. § 89.011 (West 2011).

124. TEX. NAT. RES. CODE ANN. §§ 91.103–91.108 (West 2016) (listing financial requirements for well operators and showing that these provisions were enacted after the decline in oil prices in the mid-1980s).

125. *See* Heather Long, *Red Flag: Oil Company Defaults Are Spiking*, CNN MONEY (Jan. 22, 2016), http://money.cnn.com/2016/01/22/investing/oil-crisis-defaults-rise/ [https://perma.cc/TD9T-WHFD] (noting that 27% of exploration and production companies went bankrupt in the oil bust that began in 1986).

126. Zillman & Smith, *supra* note 122, at 51.

127. *Id.* at 52 & n.47 (citing a Texas Railroad Commission report for the assertion that in 1987, there were more than 8,800 wells known or presumed to be unplugged).

128. *Id.* at 52.

129. *Id.*

130. *History of the Railroad Commission 1980–1990*, R.R. COMM'N TEX. http://www.rrc.state.tx.us/about-us/history/history-1980-1999/ [https://perma.cc/D5LA-JRKN].

131. Zillman & Smith, *supra* note 122, at 52.

Fund,[132] which allowed for the levying of various fees to pay for well plugging.[133] This new fund, however, was only projected to raise about $10,000,000.[134] The Railroad Commission has plugged '[t]ens of thousands of abandoned wells' but, as of April 2013, about 8,400 wells remain unplugged in the state.[135]

This lesson from Texas oil and gas regulation clearly illustrates the ineffectiveness of naked decommissioning and cleanup requirements. These requirements fail to keep cleanup efforts and their associated costs internalized to the industry that creates them. The result has been, and continues to be, that local and state taxpayers are left on the hook to ensure cleanup. But governments do not always have the money, political willpower, or administrative framework to ensure that a proper cleanup even takes place. For example, hundreds of thousands of abandoned or inactive mines continue to litter the United States because there is 'simply not enough money to address the problem.'[136] Without funding, these lingering environmental hazards remain and result in catastrophes like the one that occurred in August 2015 when an underfunded EPA mine reclamation effort accidentally released the contents of an old mine into Colorado's Animas River, turning the river bright orange and acidic.[137] Naked decommissioning requirements fail to ensure that oil and gas, wind, or mining operators will cleanup. And when these regulatory schemes fail, governments, at best, shoulder the cost and effort of cleaning up and, at worst, allow nondecommissioned facilities to remain.

B. States Without Decommissioning Regulation

Many other states do not address decommissioning by law. These states represent some of the largest wind-producing states in the country. Most notable among this group of states is the national leader in wind-power generation capacity—Texas.[138] The state also leads the nation in the capacity of projects that are currently under construction.[139] Another state without a

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132. Act of June 15, 1991, 72nd Leg., R.S. ch. 603, § 2, sec. 91.110, 1991 Tex. Gen. Laws. 2186, 2188.

133. *History of the Railroad Commission 1980–1990*, *supra* note 130.

134. *Id.*

135. Kate Galbraith, *In Texas, Abandoned Oil Equipment Spurs Pollution Fears*, TEX. TRIB. (June 9, 2013), https://www.texastribune.org/2013/06/09/texas-abandoned-oil-equipment-spurs-pollution-fear/ [https://perma.cc/KUV2-AP9T].

136. Gwen Lachet, Opinion, *When A River Runs Orange*, N.Y. TIMES (Aug. 20, 2015), http://www.nytimes.com/2015/08/20/opinion/when-a-river-runs-orange.html [https://perma.cc/D6GD-3VBW].

137. *Id.*

138. *Texas Wind Energy*, AM. WIND ENERGY ASS'N, http://awea.files.cms-plus.com/FileDownloads/pdfs/Texas.pdf [https://perma.cc/3WE5-D2UQ].

139. *Id.*

statewide decommissioning requirement is Iowa—home to 3,719 turbines.[140] This category of states includes other large producers like Colorado, Kansas, Massachusetts, Michigan, Montana, and New Mexico.[141]

In such states, the process of determining decommissioning requirements and regulations is left entirely to private law. In practice, this means that the rules surrounding decommissioning are generally only those set out in lease agreements between landowners and wind-farm operators. We will call these states "law-of-the-lease states' because unless a lease requires operators to remove wind-farm installations and restore the land, the operator may be able to leave the nonoperating turbines and their related structures in place at the end of the lease.[142] Such an unfortunate result limits the ability to use land and imposes the costs of removal on landowners.[143]

Luckily, because of lessons learned from bad experiences with oil and gas production, most wind leases—even those formed in the very early days of wind production—have required the operator to remove wind-farm installations and make some restorations of the land.[144] As you might expect, however, the terms of these leases vary widely.[145] Some contain very specific requirements regarding the restoration that must take place, while others simply require restoration to original conditions 'as near as reasonably possible. '[146] As explained in Part II, proper restoration of wind-farm sites requires a great deal more than simply removing turbines, roads, and substations.[147] Law-of-the-lease jurisdictions place a tremendous burden on landowners to specifically set out the exact extent of restoration that operators must undertake. But the way that landowners are often situated in these negotiations should raise questions as to their ability to drive hard bargains with operators on decommissioning. Because they may be especially hopeful for—and in great need of—a lease's financial benefits or know that they will not own the land at the end of a project's decades-long useful life, landowners may not be best situated to negotiate for strong decommissioning provisions.

In addition to these concerns, even the best crafted leases with regard to decommissioning provide little more protection than states with naked decommissioning requirements. Strong lease clauses fail to provide

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140. *Iowa Wind Energy*, AM. WIND ENERGY ASS'N, http://awea.files.cms-plus.com/FileDownloads/pdfs/Iowa.pdf [https://perma.cc/DJ4V-C5EA].

141. VOEGELE & CHANGALA, *supra* note 11, at app. at 5 tbl.5. Thorough research of statutes and regulations in these states uncovered no decommissioning statutes or regulations promulgated after the publication of this source.

142. Biricik & Haroun, *supra* note 71.

143. *Id.*

144. SMITH ET AL., *supra* note 7, § 2.12.

145. *Id.*

146. *Id.*

147. *See supra* subpart II(A).

decommissioning security for the same reason as naked decommissioning requirements: they are ineffective against bankrupt and dissolved operators. Contractual assurances to decommission are, in effect, naked decommissioning requirements imposed in private law rather than by state statute or regulation. The oil and gas industry again teaches us that this method of seeking to ensure restoration by operators fails. Even after sophisticated restoration clauses became standard features of oil and gas leases, landowners were largely unable to enforce these obligations against judgment-proof operators.[148]

The best wind leases seek to avoid the problem of judgment-proof operators by requiring one of several decommissioning-security provisions to be included. It is unknown how many wind leases in law-of-the-lease states contain one of these decommissioning-security provisions. It is thought, however, that wind operators often vehemently oppose the inclusion of these provisions during lease negotiations.[149] Given the negotiating position of operators vis-à-vis landowners, it is doubtful that the strongest versions of these clauses often make it into leases. One decommissioning-security provision calls for the operator to begin to deposit money into a sinking fund starting on a particular date during the life of the project.[150] Deposits are then made according to a schedule provided for in the lease.[151] The provision then provides that the landowner will be permitted to withdraw the money from the fund in the event that the operator fails to remove the wind-farm facilities or restore the site.[152] Other common provisions require that the operator post a performance bond, letter of credit, or guarantee from an entity with a particular credit rating to ensure decommissioning.[153]

C. States with Decommissioning Security Regulations

In stark contrast to the jurisdictions discussed above, some states have enacted comprehensive decommissioning regimes that lay out specific requirements for decommissioning and, more importantly, require contribution to decommissioning funds or the posting of a bond. The list of states that have made decommissioning security the law by statute or regulation includes Oklahoma, Oregon, and Indiana.

The leading state in enacting decommissioning security is the State of Oklahoma. In 2010, the Oklahoma Legislature passed a comprehensive statute to regulate wind-energy generation entitled the Oklahoma Wind

148. SMITH ET AL., *supra* note 7, § 2.12.

149. In a conversation with the author, Professor Rod Wetsel, a leading wind-law scholar and attorney representing landowners, described how he was told by one in-house counsel that his wind company "hates" the inclusion of surface-damage-restoration clauses and bonding requirements.

150. Biricik & Haroun, *supra* note 71.

151. *Id.*

152. *Id.*

153. *Id.*

Energy Development Act.[154] The legislative findings noted that wind-energy conversion 'require[d] large wind energy systems" that "if abandoned could pose a hazard to public health, safety, and welfare. '[155] To protect against these hazards, 'standards for the safe decommissioning of wind energy facilities should be established and assurance of adequate financial resources should be given so that the wind-energy systems can be properly decommissioned at the end of their useful life. '[156]

To achieve this end, the legislature began by clearly allocating the duty to decommission, stating: 'The owner of a wind-energy facility shall be responsible, at its expense, for the proper decommissioning of the facility upon abandonment or the end of the useful life of the commercial wind-energy equipment. '[157] The statute defines 'abandonment' as 'the failure to generate electricity for a period of twenty-four (24) consecutive months"[158] and requires operators to complete decommissioning within twelve months of abandonment or the end of the installation's useful life.[159] 'Proper decommissioning' includes removal of turbines, electrical components, foundations, and all other associated facilities to a depth of thirty inches below grade and reseeding or otherwise restoring the land to 'substantially the same condition as existed prior. '[160]

But, as it noted in its findings, the legislature understood that this decommissioning requirement could not be achieved without adequate financial guarantees. The legislature included in the law a special section entitled: 'Required Filing—Evidence of Financial Security. '[161] This section requires the submission of 'evidence of financial security to cover the anticipated costs of decommissioning' to the Oklahoma commission that regulates the production of energy in the state.[162] For facilities beginning to generate power before December 31, 2016, this evidence must be provided at the end of the fifteenth year of operation.[163] For facilities beginning to generate power on or after that date, the evidence must be provided by the fifth year of operation.[164] Financial security may come in the form of 'a surety bond, collateral bond, parent guaranty, cash, cashier's check,

154. OKLA. STAT. ANN. tit. 17 § 160.11 (West 2016); Oklahoma Wind Energy Development Act, 2010 Okla. Sess. Laws 1251.

155. OKLA. STAT. ANN. tit. 17 § 160.12(4)–(5).

156. *Id.* § 160.12(6).

157. *Id.* § 160.14(a).

158. *Id.* § 160.13(1).

159. *Id.* § 160.14(C)(1).

160. *Id.* § 160.14(B)(1)–(2).

161. *Id.* § 160.15.

162. *Id.* § 160.15(A); OKLA. CORP. COMM'N, ANNUAL REPORTS FISCAL YEAR 2013, at 2 (2016), http://www.occeweb.com/FY13%20Annual%20Report%20FOR%20PRINTING.pdf [https://perma.cc/6GDL-UQZF].

163. *Id.*

164. *Id.*

certificate of deposit, bank joint custody receipt or other approved negotiable instrument' allowed by the commission.[165] The statute, further, specifically regulates the amount of the financial security. For installations beginning to generate power on or after December 31, 2016, security must be in the amount of 125% of the estimate of the total cost of decommissioning minus the salvage value of the equipment as estimated by a licensed engineer.[166] Failure to submit evidence of financial security in the proper amount subjects an operator to a penalty not to exceed $1,500 per day.[167]

Statutory enactments are not the only way that states are implementing decommissioning-security regulation. Other states such as Indiana and Oregon require the posting of financial surety and impose decommissioning standards by way of utility-regulatory commissions.[168] The Oregon Energy Facility Siting Council (OEFSC), for example, has broad authority under its enabling statute that allows it to impose far-reaching requirements on wind-farm operators.[169] With this authority, the OEFSC has adopted a rule that requires a council finding that land at a proposed site can be adequately restored and that '[t]he applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to restore the site.'[170] In its discussion of this rule, '[t]he [c]ouncil recognizes the risks that construction of an energy facility could stop in a partially completed state or that an operating facility could cease operating, leaving the community with unusable property and no funds for site restoration.'[171] Because of this, the commission interprets the rule as requiring as "a mandatory condition in every site certificate a bond or letter of credit to be in place before construction begins" and an explanation from the applicant regarding 'how it proposes to restore the site.'[172] The Indiana Public Utility Regulatory

165. *Id.*

166. *Id.* § 160.15(B)(2).

167. *Id.* § 160.15(C).

168. *See, e.g.*, OR. ADMIN. R. WL 345-022-0050 (2016), http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_345/345_022.html [https://perma.cc/T6G5-BA7V] (requiring that the council must find that the proposed site can be restored and that the operator has a "reasonable likelihood' of being able to obtain a financial surety to ensure decommissioning); Meadow Lake Wind Farm III LLC, Cause No. 43579, at 9 (Ind. U.R.C. Nov. 24, 2009), https://iurc.portal.in.gov/_entity/sharepointdocumentlocation/39acf441-3883-e611-810e-1458d04f0178/bb9c6bba-fd52-45ad-8e64-a444aef13c39?file=43759order_112409.pdf [https://perma.cc/6VZQ-DMDY] [hereinafter Meadow Lake] (imposing a duty on the operator to "maintain financial assurance to ensure that the [wind farm] will be properly decommissioned at the end of its serviceable life").

169. *See* OR. REV. STAT. ANN. tit. 36, § 469.501(1) (2015) (requiring the OEFSC to 'adopt standards for the siting, construction, operation and retirement of facilities").

170. OR. ADMIN. R. WL 345-022-0050.

171. *Energy Facility Siting Standards: Retirement and Financial Assurance*, OR. DEP'T OF ENERGY, https://www.oregon.gov/energy/Siting/Pages/standards.aspx#Retirement_and_Financial_Assurance [https://perma.cc/57XJ-ZHRZ].

172. *Id.*

Commission has also required operators to establish a decommissioning plan that 'include[s] an independent financial instrument in an amount equal to the demolition and removal cost estimate.'[173] These states with broadly enabled regulatory commissions have been able to adapt to the new challenge of regulating the wind industry. However, the obvious drawback is that these regulations can change at the whim of the state commissions, while Oklahoma's legislative enactment offers a more stable regulatory framework.

D. Local Ordinances

A discussion of current law governing decommissioning would be incomplete without acknowledging the large role that municipal- and county-level regulations currently play in wind-farm development. These local ordinances largely focus on issues such as location, permitting, and construction,[174] and require developers to adhere to local zoning ordinances and to obtain special construction permits.[175] The U.S. Department of Energy identifies 406 of these ordinances currently in place across the country.[176] In South Dakota, the state regulates wind projects over 100 MW, but encourages the adoption of local ordinances to govern projects under that threshold.[177] The State Public Utilities Commission has published a model ordinance for local adoption in which County Boards of Commissioners 'may' require financial assurance after the tenth year of a project's operation.[178]

Although the focus of local regulation is largely on more traditional matters like siting and setbacks, some local regulation does impose decommissioning security requirements on wind-farm directors. A review of local regulations shows that in New York, Michigan, Kansas, Wisconsin, and Illinois, one county imposes mandatory requirements on developers to put up financial assurances of decommissioning.[179] Three counties in Minnesota, one county in California, and one county in Illinois have

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173. Meadow Lake, *supra* note 168, at 9.

174. *Wind Energy Ordinances*, WINDEXCHANGE, U.S. DEP'T OF ENERGY, http://apps2.eere.energy.gov/wind/windexchange/policy/ordinances.asp [https://perma.cc/Q76P-Y8LZ].

175. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-05-906, WIND POWER: IMPACTS ON WILDLIFE AND GOVERNMENT RESPONSIBILITIES FOR REGULATING DEVELOPMENT AND PROTECTING WILDLIFE 21–22 (2005).

176. U.S. DEP'T OF ENERGY, *supra* note 174.

177. Danielle Changala et al., *Comparative Analysis of Conventional Oil and Gas and Wind Project Decommissioning Regulations on Federal, State, and County Lands*, ELECTRICITY J. Jan.–Feb. 2012, at 29, 37.

178. S.D. PUBLIC UTILITIES COMM'N, DRAFT MODEL ORDINANCE FOR SITING OF WIND ENERGY SYSTEMS (WES) 9 (2008), https://puc.sd.gov/commission/twg/WindEnergyOrdinance.pdf [https://perma.cc/ALM2-JPU4].

179. *See* Changala et al., *supra* note 177, at 41–42 tbl.B1 (setting out decommissioning requirements of local ordinances in Chautauqua County, NY; Huron County, MI; Riley County, KS; Shawano County, WI; and Pike County, IL).

ordinances where developers may be required to set aside funds, purchase sureties, or contractually agree to cover decommissioning costs.[180] Aside from these few examples, however, much of local regulation continues to fail to provide decommissioning security.

In sum, the state of current decommissioning law varies widely and remains largely undeveloped. States span from leaving decommissioning completely to the parties of wind-lease transactions to imposing specific requirements for reclamation along with the posting of financial surety. At present, decommissioning law remains a patchwork of state regulation and local ordinances. As in many new industries, the law is struggling to keep pace with the boom.

IV Common Pitfalls and Recommendations for Statewide Decommissioning Regulations

The previous sections of this Note have sought to illustrate the enormous task that wind-farm decommissioning will present within the next several decades and highlight the underdeveloped state of current law governing decommissioning. The task of decommissioning includes many challenges. It will require a large monetary outlay, herculean efforts in physical dismantling and recycling, and a great deal of oversight to successfully decommission the installations of America's second great wind rush. But, as illustrated in the previous part of this Note, the state of current law largely fails to ensure that this dismantling will take place and that its costs will remain internalized within the industry that has created them. This section notes some of the common pitfalls of existing regulation and suggests components of regulation that should be adopted to ensure effective and efficient decommissioning. It argues four things: that effective statutes require operators to post a financial surety to cover estimated decommissioning costs; that decommissioning regulations are best promulgated and administered on a state-wide basis; that decommissioning regulations should clearly allocate the burden of decommissioning to operators, not landowners; and, finally, that decommissioning regulations should clearly define events that trigger specific decommissioning requirements. Avoiding these pitfalls improves the state of decommissioning law by making decommissioning mandatory and well-funded.

A. Financial Surety Requirement

In discussing the current state of decommissioning law, this Note seeks to illustrate the ineffectiveness of regulation that requires developers to decommission without obligating these operators to post financial surety to

180. *See id.* at 41–43 tbl.B1 (setting out decommissioning requirements in Clay, Fillmore, and Redwood Counties, MN; Solano County, CA; and Vermilion County, IL).

cover estimated decommissioning costs. Examples of this failure can be found with America's earliest wind farms—like those constructed and abandoned in Hawaii.[181] But even more examples can be found in the oil and gas industry. The point is simply this: in regulatory regimes that fail to require decommissioning security in the form of financial surety, the cost of failed or incomplete decommissioning falls on states and landowners. In some cases, these outside stakeholders pay the cost and complete decommissioning.[182] In others, however, the abandoned operations linger—polluting the environment, reducing land values, and impairing full and free use of land.[183]

It is thought that turbine assemblies 'will have significant salvage values at the end of the turbine's useful life.'[184] Based on this concept, some argue that it would be irrational for a developer to 'walk away' from a project and, therefore, "no external regulation is required.'[185] Even if we accept all of this as true—and thereby ignore the whole myriad of practical reasons why a developer might not clean up, or even be around to do so—salvaging cannot guarantee anything more than partial decommissioning.[186] That is because of the distinction that salvage value creates among wind-farm components. When it comes to decommissioning, there will be components whose decommissioning reduces marginal cost due to high salvage value and there will be components that only add to marginal decommissioning cost due to small or nonexistent salvage values.[187] Under this regime, we would expect developers to act in a way that maximizes the salvage value of a project while reducing decommissioning costs. The result is this—that some components get decommissioned and others do not. Accepting the incentives argument advanced above means also accepting this fact: that wind-farm operators will always decommission the wind turbine but not its concrete foundation and that they will always reclaim transmission wires while abandoning the electrical substation. As the theorists behind the Oklahoma Act so aptly observed: 'Without a bond, there can be no assurance of complete decommissioning."[188]

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181. *See* Leonard, *supra* note 15 (noting that Hawaii has six abandoned wind farms, including one site displaying the "rusting skeletons of scores of wind turbines").

182. For an example, see the discussion of oilfield cleanup in Texas, *supra* notes 124–37.

183. For an example, see the discussion of lingering hazards from abandoned mines, *supra* notes 136–37.

184. Ferrell & DeVuyst, *supra* note 66, at 110.

185. *Id.*

186. *See id.* at 111 (noting the distinction that salvage value creates among wind-farm components and that "[w]ithout a bond, there can be no assurance" that a developer will completely decommission).

187. Ferrell and DeVuyst identify the former as "high-value and low-cost components" and the latter as "high-cost, low-value components. *Id.*

188. *Id.*

A lingering issue is the question of timing for providing the financial surety. Some jurisdictions require sureties to be in place before construction begins on a project.[189] Others set dates later within the life of the project by which the developer must have made provisions for decommissioning security.[190] There are good arguments to be advanced for either course of action. An up-front provision clearly provides the greatest insurance that the costs of decommissioning the project will not fall to others beyond the developer. This approach protects against the risk that some calamity early in the life of the project will require someone other than the developer to decommission. Further, taking care of the problem at the beginning of the project also makes logistical sense. As noted previously, wind-farm construction implicates a large amount of state and local siting and zoning regulation.[191] Requiring early bonding sensibly takes care of all of this administration at once.

On the other hand, the practicalities of wind-farm financing make delaying the requirement sensible. Wind farms require an enormous initial capital outlay[192]—a developer's payout date comes many years down the road.[193] As a result, it is in the interest of development not to require further outlays from developers until later in the project. Moreover, the sizable investment in the wind farm largely reduces abandonment risk early in the life of the project.[194] Given these realities, it seems sensible enough that surety requirements can be relaxed during the earliest years of a project's operation. What is clear is that regulation should, at a minimum, require decommissioning security to be in place on or before a project's payout date.

While the natural inclination is to think that imposition of these requirements will hinder wind-energy development, there is at least one reason to think otherwise. It has been noted that landowners contemplating wind-lease agreements are often particularly concerned about decommissioning.[195] By providing landowners with the basic protection of a bonding requirement, jurisdictions can address this concern in a way that creates a defined regulatory framework. Making clear the rules of the game can encourage development by alleviating one of landowners' most common objections to contracts offered by developers.[196]

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189. *E.g.*, N.C. GEN. STAT. ANN. § 143-215.121 (West 2016).

190. *E.g.*, OKLA. STAT. ANN. tit. 17, § 160.15(A) (West 2016).

191. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 175, at 21.

192. Ferrell & DeVuyst, *supra* note 66, at 110.

193. Tony Kealy, Martin Barrett & Derek Kearney, *How Profitable Are Wind Turbine Projects? An Empirical Analysis of a 3.5 MW Wind Farm in Ireland*, INT'L J. ON RECENT TECHS. IN MECHANICAL AND ELECTRICAL ENGINEERING, Apr. 2015, at 58, 62.

194. *See* Ferrell & DeVuyst, *supra* note 66, at 110 (discussing developers' substantial investment in and commitment to wind-farm projects).

195. *Id.* at 107.

196. *Id.* at 107–08.

B. Triggering Events and Decommissioning Requirements

Clearly defining the events that trigger decommissioning, and defining what decommissioning requires, will further clarify existing law. This may seem like an elementary question, but outside of Oklahoma and specific lease provisions, it goes largely unanswered in our current legal framework. The first question is determining what events should cause decommissioning to begin. Next is the question of what specific requirements must be met to say that decommissioning has occurred—and in what time frame must these requirements be discharged.

Existing law suggests that decommissioning is triggered when a facility is abandoned or when a facility reaches the 'end of [its] useful life.'[197] The Oklahoma statute defines abandonment as 'failure to generate electricity from commercial wind-energy equipment for a period of twenty-four (24) consecutive months.'[198] This two-pronged approach seems well calibrated to cover the variety of eventualities that could arise in a wind farm's course of operation. Defining the end of a wind farm's useful life may seem elementary, but without this definition it is impossible to know when decommissioning requirements are triggered.

Another common pitfall to avoid is failing to set out minimum requirements for decommissioning. Regulation that fails to impose minimum standards invites partial decommissioning. The Oklahoma statute sets out a simple list of specific requirements that developers 'remov[e] wind turbines, towers, buildings, cabling, electrical components, foundations and any other associated facilities, to a depth of thirty (30) inches below grade.'[199] The inclusion of these specific requirements also helps avoid concern about incomplete decommissioning—especially by mandating removal of components with no salvage value. The statute proceeds to require the restoration of disturbed earth and reseeding so as to return the site to 'substantially the same physical condition' as existed prior to construction.[200] With these two simple provisions, the Oklahoma statute clearly defines the scope of decommissioning. The statute goes on to require that the developer complete these steps within one year of the event that triggers decommissioning.[201] It sets out bright-line rules for assessing when decommissioning is required, to what extent the developer must clean up, and the timeframe in which decommissioning must be completed. Without these rules, it is impossible to assess whether a successful decommissioning has taken place as required by regulation or the wind-farm lease. Setting these

197. OKLA. STAT. ANN. tit. 17, § 160.14(C)(1) (West 2016).
198. *Id.* § 160.13(1).
199. *Id.* § 160.14(B)(1).
200. *Id.* § 160.14(B)(2).
201. *Id.* § 160.14(C)(1).

requirements out explicitly provides clarity and helps avoid the necessity of litigating decommissioning questions.

The final topic to note here is that statutes and regulations should explicitly allow landowners and operators to adopt stricter decommissioning requirements in the initial lease or by later agreement. The Oklahoma statute allows for this.[202] Setting this caveat out in legislation or applicable regulation can only serve as a good reminder to courts and contracting parties that legally imposed standards represent only a minimum. The specificities of a particular plot of land or the landowner's activities thereon may mandate additional decommissioning measures. Landowners and operators should be free to agree to these further protections.

C. Allocating the Decommissioning Burden

The idea that statutes and regulations should clearly allocate the burden of decommissioning also seems elementary. However, it is another area where the law, in its current state, has failed. Regulations have been promulgated setting out decommissioning requirements without specifying who is responsible for compliance.[203] For example, a Swift County, Minnesota ordinance requires that 'all [wind turbines] and accessory facilities shall be removed to four feet below ground level within 90 days of the discontinuation of use.'[204] The ordinance further states that 'each Large [wind-energy-conversion system] shall have a Decommissioning plan.'[205] While these requirements are commendable, the ordinance completely fails to set out who is responsible for meeting these requirements. The ordinance could be construed to require compliance by the landowner or by the developer—or by both. Such ambiguity makes landowners anxious about executing leases. In the face of potential liability for decommissioning costs, they should be. Decommissioning law should clearly allocate the decommissioning burden to the developer.

The less apparent part of this issue is the need to designate who will decommission if the primary party fails to meet their duty. In the event of a failed decommissioning, the Oklahoma statute obligates the state's Corporation Commission (which is generally tasked with regulating oil and gas production, among other things)[206] to 'take such measures as are necessary to complete the decommissioning.'[207] The question of who should decommission where the developer fails is largely a policy question for state

202. *Id.* § 160.14(D).

203. Biricik & Haroun, *supra* note 71.

204. SWIFT CTY., MINN., ORDINANCES § 10.6(K) (2016).

205. *Id.* § 10.6(L).

206. *See generally* OKLA. STAT. ANN. tit. 17 (outlining the Oklahoma Corporation Commission's authority and duties).

207. *Id.* § 160.14(C)(2).

legislators and regulators rather than a legal question. However, the pitfall that the law must avoid here is failing to designate a party responsible for decommissioning in the event the developer fails to carry out its duty.

D. Statewide Regulation

The final point to note in this subpart is the necessity of state action on decommissioning. As illustrated above, federal law is largely absent in regulating wind-energy production.[208] 'The federal role in regulation is limited to projects occurring on federal lands or those with some form of federal involvement'—such as projects that receive federal funding.[209] Municipal- and county-level regulation, on the other hand, plays a large role—especially in the current absence of state action. However, there are four strong arguments for why state governments are better situated to regulate in this area.

First, state regulation promotes uniformity. Local controls are a patchwork, and create confusion for developers seeking to meet the requirements of different regulatory frameworks. Further, as evidenced by the Swift County ordinance discussed above, local regulation is often poorly crafted.[210] Finally, wind-farm projects are large and may stretch across a municipal or county border. State regulation sets uniform standards that increase convenience and clearly define the rules of the game.

Further, states possess superior regulatory institutions to local governments. Regulating a growing industry requires a large and sophisticated regulatory apparatus. This is particularly true given the technical nature of wind-energy conversion. Regulators will need to assess decommissioning cost estimates, require correct bonding amounts, and have the expertise to complete decommissioning where developers fail. State governments, with energy and environmental regulatory bodies already in place, are better equipped to meet these challenges.

Conclusion

For many years, the focus surrounding wind energy—from operators, to politicians, to landowners—has been squarely on installing turbines and increasing generation capacity. This rush to expand production has been wildly successful. Today, the United States leads the world in wind-power production and only looks to expand this lead in the coming years. However, during this rush to capture the wind, the long-term implications of the installation of massive wind-energy-conversion systems have been largely

208. *See* U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 175, at 21 (explaining that, because "most wind power development has occurred on nonfederal land, regulating wind power facilities is largely a state and local government responsibility").

209. *Id.*

210. *See* discussion *supra* subpart IV(C).

ignored. There was a time when wind-farm decommissioning could be considered a far-off problem—so distanced by time from the present that it could go unobserved. But today, as many modern wind farms enter their second decade of operation, we move ever closer to facing a problem that will impose huge costs on the industry, governments, landowners, and the general public.

Unfortunately, current law largely fails to allocate, or even recognize the existence of, these costs. Because of this, we face uncertainty. It is largely uncertain whether the wind industry, governments, or landowners will bear the monetary cost of decommissioning. This cost is large and ever-increasing. But the failure to provide decommissioning security raises the possibility of costs much worse than monetary costs. More troubling is the open question of whether many wind farms will be decommissioned at all. Ten years after America's best-documented case of wind-farm abandonment, we continue to face the specter of a day when green energy's glistening installations are instead fields full of falling-down junk.

—*William S. Stripling*

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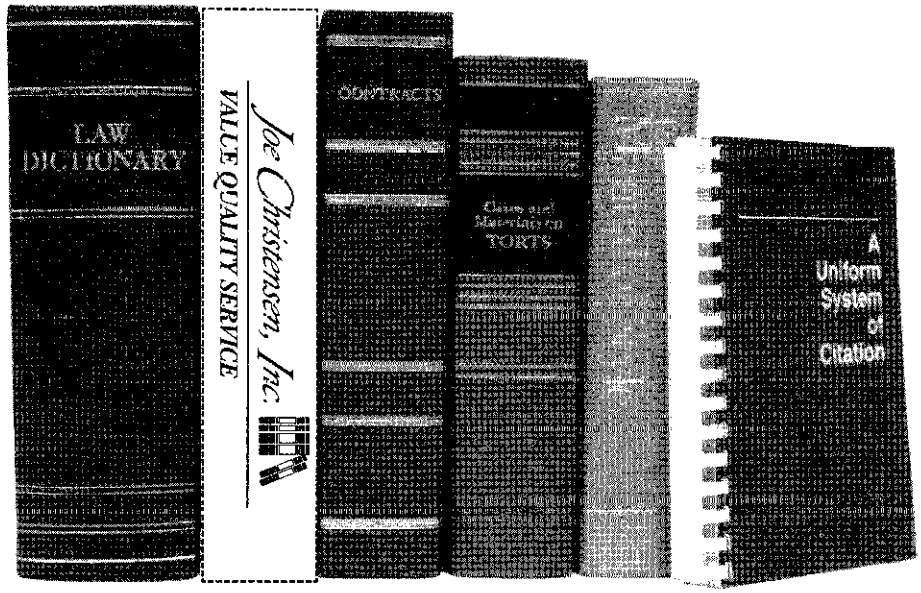

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