

# The PTAB’s Problem

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Concerns raised by opponents of the PTAB to date are largely unpersuasive. However, underlying their concerns may be a more legitimate problem – ex post patent invalidation undermines reliance interests of patent owners that never would have developed if the patent had been rejected as unpatentable during ex ante patent examination. This is a potential problem of ex post patent invalidation generally, not the PTAB specifically, but has become more apparent as the PTAB has made ex post invalidation more common. The extent, source, and consequences of such reliance costs are questionable and require much more exploration and evaluation. These issues, however, would be a better focus for debates over the optimality of the PTAB generally, and its design choices specifically, than existing arguments focused on constitutional power, supposed procedural bias, and the PTAB’s absolute invalidity rate. They also may be relevant to ongoing debates about whether it would be rational to expend more resources on ex ante patent examination.

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## I. Introduction

Several Supreme Court justices recently expressed concern that a United States patent can be invalidated years after its issuance despite the patent owner's reliance on the patent's exclusive rights in investing tens of millions of dollars to develop the patented invention.<sup>1</sup> Similar concerns have generated recent scholarly interest in making the validity of issued patents incontestable after a certain period of years.<sup>2</sup> At first glance, these recent concerns are odd. Ex post patent invalidation, without regard to the length of time since patent issuance or patent owner investments made in reliance on patent protection, has been a fundamental feature of the American patent system since its origin in 1790.<sup>3</sup>

However, recent concern about the effect of ex post patent invalidation on patent owner investments and reliance interests reflects the fact that ex post patent invalidation has become much more common in recent years. In the America Invents Act of 2011 (AIA), Congress created a series of adversarial administrative adjudications before the U.S. Patent and Trademark Office's (Patent Office) newly-created Patent Trial and Appeal Board (PTAB) to review and cancel issued patents that fail the statutory criteria of patentability and should never have been issued in the first place.<sup>4</sup> The PTAB proceedings have been far more effective at invalidating issued patents than either district court litigation or prior administrative reexamination procedures,<sup>5</sup> or even than was anticipated at the time the AIA was enacted.<sup>6</sup>

Perhaps for this reason, the PTAB is very controversial within the patent community.<sup>7</sup> Opposition to the PTAB often centers on constitutional arguments about the PTAB's power to invalidate issued patents, which tend to reflect, at worst,

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<sup>1</sup> Transcript of Oral Argument at 29:10–18 (Breyer, J.), *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*, 138 S. Ct. 136 (2018) (No. 16-712); *id.* at 42:13–20 (Gorsuch, J.); *id.* at 54:2–11 (Roberts, C.J.).

<sup>2</sup> See James Stern, Abstract, *Patent Incontestability*, <https://www.law.berkeley.edu/wp-content/uploads/2018/07/James-Stern.pdf> (“U.S. patent law should incorporate a method by which patent-holders can obtain a final determination that their patents are (or are not) valid, once and for all, after the passage of a sufficient period of time.”); Paul M. Janicke, *Toward a Streamlined Patent Statute: Part I — Incontestable but no Longer Exclusive*, PATENTLYO (Sept. 3, 2018), <https://patentlyo.com/patent/2018/09/streamlined-incontestable-exclusive.html> (proposing that “[a]fter three years from the issue date, validity of the patent claims becomes incontestable”).

<sup>3</sup> Christopher Beauchamp, *Repealing Patents*, 72 VAND. L. REV. 647, 648 (2019) (describing long-standing practice of revoking patents through invalidity defenses in infringement litigation and stand-alone invalidity proceedings).

<sup>4</sup> 35 U.S.C. §§ 311–319; 321–329; Leahy-Smith America Invents Act, 112 Pub. L. No. 29, 125 Stat. 284, 312–14 (2011); see generally Sarah Tran, *Patent Powers*, 25 HARV. J.L. & TECH. 609, 631–37 (2012).

<sup>5</sup> See *infra* Part II.B.

<sup>6</sup> JOHN R. THOMAS, CONG. RESEARCH SERV. INTER PARTES REVIEW OF PATENTS: INNOVATION ISSUES 1 (2017) (suggesting the unexpected popularity of PTAB is because of its effectiveness at invalidating patents).

<sup>7</sup> Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 251–58 (2015) (describing normative debate about the PTAB based on the invalidation rate).

fundamental misunderstandings about constitutional law, and, at best, more general anti-administrative thought, not the current state of the law.<sup>8</sup> Policy-focused concerns assume that the PTAB's high invalidation rate is necessarily problematic. To reach this conclusion, opponents overlook the PTAB's effective threshold screening, ignore the perceived ineffectiveness of prior procedures that motivated the creation of the PTAB, contend with little support that the PTAB is indiscriminately invalidating "good" patents, deny any problem with "bad" patents, and/or assume that the interests of patent owners equate with social welfare.<sup>9</sup> Finally, PTAB opponents raise procedural concerns that the PTAB has stacked the deck against patent owners as compared to district court litigation or aggrandized its own power at the expense of the judiciary. Overlooked, however, is that prior administrative reexamination proceedings included most of the supposedly "stacked" procedures and yet were not seen as unfair to patent owners. These arguments also tend towards a general skepticism of administrative power and a preference for judicial power that is out-of-step with the modern administrative state, though perhaps consistent with recent anti-administrative trends generally.<sup>10</sup>

This is not to suggest that the PTAB is problem-free. Like anything new, the PTAB has experienced growing pains as it explores the scope of its powers and optimal procedures, but these have generally worked themselves out through the normal processes of administrative decision-making and judicial review. By contrast, the more fundamental concerns expressed by PTAB opponents seem largely misguided. Underlying these concerns, however, may be a legitimate problem with ex post invalidation more generally: disturbance of patent owner reliance interests and imposition of costs on patent owners in the form of the lost value of investments made in reliance on patent protection, switching costs, foregone opportunities, etc. ("reliance costs").<sup>11</sup> These reliance concerns are most obvious when a patent is incorrectly invalidated ex post but also exist for patents correctly invalidated ex post because, in theory, the patent owner would not have incurred these reliance costs if the patent had been properly rejected during ex ante examination.<sup>12</sup>

The reliance concerns that are seemingly motivating the strenuous opposition to the PTAB are not a problem of the PTAB specifically but rather ex post invalidation generally. However, the PTAB has made these concerns more prominent and more acute because it is much more effective at, and popular for, invalidating issued patents than prior procedures. This higher rate of ex post patent invalidation generates more potential reliance costs.<sup>13</sup> To be clear, there are plenty of reasons to be skeptical about whether, and to what extent, reliance interests and reliance costs are actually a problem with ex post invalidation, or at least a problem worth addressing: uncertainty as to whether and to what extent patent owners have reliance interests that would be

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<sup>8</sup> See *infra* Part I.B.1.

<sup>9</sup> See *infra* Part I.B.2.

<sup>10</sup> See *infra* Part I.B.3.

<sup>11</sup> See *infra* Part II.A.

<sup>12</sup> See *id.*

<sup>13</sup> See *infra* Part II.B.

undermined by invalidation; the responsibility of the patent owner for its own reliance costs; and the need to weigh any reliance costs against the other costs and benefits of invalidation, in particular the benefits of eliminating invalid patents.<sup>14</sup>

This Essay's limited conclusion is that reliance concerns seem to be motivating a lot of the opposition to the PTAB, are a more plausible problem with the PTAB than most of the arguments raised by opponents to date, and are a more productive focus for debates over the optimality of the PTAB. Focusing on reliance concerns would also properly shift the PTAB debate from one of power and legitimacy to one of policy, as Congress is entrusted with weighing and accounting for reliance interests in making design choices for the patent system. Finally, a greater focus on the reliance costs of ex post patent invalidation may be useful to the ongoing debate among patent scholars as to the optimal level of investment in the quality of ex ante patent examination.<sup>15</sup>

This Essay proceeds in three parts. Part I introduces the debate over the PTAB and identifies and evaluates the supposed "problems" raised by opponents. Part II develops the argument that patent owner reliance costs are a plausible problem with the PTAB, but also provides reasons for skepticism. Part III connects Part II's debate over patent owner reliance costs to current PTAB and patent policy issues.

## II. The PTAB Debate

### A. Overview of the PTAB

The AIA substantially overhauled and expanded the Patent Office's power to reconsider the validity of issued patents and cancel patents that fail the statutory conditions of patentability and should not have been issued in the first place.<sup>16</sup> Prior reexamination procedures were similar to initial patent examination, occurring primarily between the patentee and the patent examiner, though varying in whether they allowed any participation by the requesting party.<sup>17</sup> Congress's goal in the AIA was to provide "a cheaper, more efficient, and faster system for invalidating bad patents."<sup>18</sup>

The AIA created three new procedures for Patent Office review and cancellation of issued patents. Inter partes review allows any party to challenge an issued patent for lack of novelty or non-obviousness based on printed prior art from nine months after the patent issues through the life of the patent.<sup>19</sup> Post grant review allows any

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<sup>14</sup> See *infra* Part II.C.

<sup>15</sup> See *infra* Part III.

<sup>16</sup> Tran, *supra* note 4, at 631.

<sup>17</sup> See 35 U.S.C. § 307 (2012); 35 U.S.C. §§ 314(b), 315(b) (2006) (pre-AIA); MPEP § 2209 (9th ed. Rev. 08.2017, Jan. 2019), <https://www.uspto.gov/web/offices/pac/mpep/> (summarizing ex parte reexamination); MPEP § 2609 (summarizing inter partes reexamination).

<sup>18</sup> ALDEN ABBOTT ET AL., FED. SOC'Y REGULATORY TRANSPARENCY PROJECT, CRIPPLING THE INNOVATION ECONOMY: REGULATORY OVERREACH AT THE PATENT OFFICE 11 (2017), <https://regproject.org/wp-content/uploads/RTP-Intellectual-Property-Working-Group-Paper.pdf>.

<sup>19</sup> Tran, *supra* note 4, at 633–35.

party to challenge a patent on any basis within nine months of issuance.<sup>20</sup> A temporary covered business method patent review program lasting until 2020 allows a party accused of patent infringement to file a challenge in the Patent Office on any basis for patentability, but only if the patent covers a non-technological “method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service.”<sup>21</sup>

Unlike examination or reexamination, these new proceedings are adversarial proceedings involving both the patentee and requester that include limited discovery, an oral hearing, and some other features more reminiscent of litigation than traditional examination or reexamination.<sup>22</sup> They are also resolved by three administrative patent judges (APJ) of the newly-created PTAB, rather than by a patent examiner.<sup>23</sup>

### B. The Criticism of the PTAB

The PTAB proceedings have proven very controversial, perhaps largely due to the combination of their popularity as a forum for challenging issued patents and the frequency with which patent rights have been invalidated.<sup>24</sup> The criticisms of the PTAB fall into three main categories, none of which is particularly persuasive.

### C. The PTAB's Power

First, much of PTAB opponents' focus has been on a series of constitutional challenges and complaints about the PTAB's basic power to invalidate issued patents. In *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*, the Supreme Court squarely rejected the contention that doing so violated the patent owner's Article III right to a judge with security of employment and salary or Seventh Amendment right to a jury.<sup>25</sup> The only real surprise in *Oil States* was that two dissenting justices would have held otherwise,<sup>26</sup> which is probably better explained by general anti-administrative attitudes than anything about the PTAB specifically.<sup>27</sup>

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<sup>20</sup> *Id.* at 631–32.

<sup>21</sup> *Id.* at 636–37.

<sup>22</sup> Melissa F. Wasserman, *The Changing Guard of Patent Law: Chevron Deference for the PTO*, 54 WM. & MARY L. REV. 1959, 1981–83 (2013); Tran, *supra* note 4, at 633–34, 636–37.

<sup>23</sup> Wasserman, *supra* note 22, at 1983; Tran, *supra* note 4, at 633–34, 636–37.

<sup>24</sup> Dreyfuss, *supra* note 7, at 251–52 (describing the normative debate about PTAB arising from its popularity and high invalidation rate).

<sup>25</sup> 138 S. Ct. 1365, 1379 (2018).

<sup>26</sup> *Id.* at 1380 (Gorsuch, J., dissenting, joined by Roberts, C.J.); see also Greg Reilly, *The Constitutionality of Administrative Patent Cancellation*, 23 B.U. J. SCI. & TECH. L. 377, 380 (2017) [hereinafter *Constitutionality*] (“The constitutional challenges to administrative adjudication and cancellation of issued patent rights are legally quite weak.”); Ryan Davis, *USPTO Chief Predicts Supreme Court Will Uphold AIA Reviews*, LAW360 (June 29, 2017, 8:08 PM), <https://www.law360.com/articles/934552/uspto-chief-predicts-supreme-court-will-uphold-aia-reviews> (quoting the acting director of the Patent Office as predicting a unanimous decision upholding the PTAB in *Oil States*).

<sup>27</sup> Ronald Mann, *Opinion Analysis: Justices Rebuff Constitutional Attack on Administrative Re-Examination of Patents*, SCOTUSBLOG (Apr. 24, 2018, 4:47 PM), <https://www.scotusblog.com/2018/04/opinion-analysis-justices-rebuff-constitutional-attack-on-administrative-re-examination-of-patents/> (concluding that “Gorsuch’s dissent begins to reveal his

Drawing on *Oil States*' statement that "our decision should not be misconstrued as suggesting that patents are not property for purposes of the Due Process Clause or the Takings Clause,"<sup>28</sup> PTAB opponents contend that the PTAB's invalidation of an issued patent constitutes a taking in violation of the Fifth Amendment that requires compensation from the government.<sup>29</sup> For patents issued after enactment of the AIA, the takings argument is almost certainly foreclosed by *Oil States*' conclusion that the Patent Act "qualifies any property rights that a patent owner has in an issued patent, subjecting them to the express provisions of the Patent Act. Those provisions include inter partes review."<sup>30</sup> Owners of patents issued before enactment of the AIA face an uphill battle in showing that PTAB administrative cancellation is different enough than the reexamination administrative cancellation to which their patents were subject at the time of issuance to both change the nature of their patent property right and do so in a way that rises to the level of a taking under the Supreme Court's restrictive jurisprudence in this area.<sup>31</sup>

Before and after *Oil States*, PTAB opponents have raised Fifth Amendment due process concerns in challenging the PTAB. Some of the due process arguments against the PTAB reflect a fundamental misunderstanding of the due process guarantee.<sup>32</sup> At its core, procedural due process guarantees notice and an opportunity to be heard before an impartial decision maker.<sup>33</sup> The PTAB undoubtedly provides constitutionally adequate notice and an opportunity to be heard.<sup>34</sup>

More plausible concerns with the impartiality of the PTAB's APJs,<sup>35</sup> who are not statutorily-protected administrative law judges but instead are appointed, supervised, and controlled by political appointees.<sup>36</sup> These concerns are exacerbated

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deep-seated skepticism about the propriety and utility of the administrative state" especially in light of his other recent opinions in non-patent cases).

<sup>28</sup> *Oil States*, 138 S. Ct. at 1379.

<sup>29</sup> Dennis Crouch, *Just Compensation for Cancelling My Patent*, PATENTLYO (May 10, 2018), <https://patentlyo.com/patent/2018/05/compensation-cancelling-patent.html> (describing such Takings claims).

<sup>30</sup> *Oil States*, 138 S. Ct. at 1375; see also Crouch, *supra* note 29 (suggesting that Takings claims are not viable for post-AIA patents).

<sup>31</sup> Reilly, *Constitutionality*, *supra* note 26, at 434–35.

<sup>32</sup> See, e.g., Neal Solomon, *The Problem of Inter-Partes Review (IPR)*, IPWATCHDOG (Aug. 8, 2017), <https://www.ipwatchdog.com/2017/08/08/problem-inter-partes-review-ipr/id=86287/> (contending that the PTAB "denie[s] patent holders due process of law" because of the preponderance standard of proof, the broadest reasonable construction standard, the limited opportunity to amend claims, and the limited estoppel effect).

<sup>33</sup> See *Mullane v. Central Hanover Bank & Tr. Co.*, 339 U.S. 306, 314 (1950).

<sup>34</sup> See Christopher J. Walker & Melissa F. Wasserman, *The New World of Agency Adjudication*, 107 CAL. L. REV. 141, 165–168 (2019) (concluding that "[t]he PTAB has incorporated almost all of the most important procedural protections ACUS has recommended," including those related to notice and hearings).

<sup>35</sup> See, e.g., Brief of Amicus Curiae Shire Pharmaceuticals LLC in Support of Neither Party at 19, *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*, 138 S. Ct. 136 (2018) (No. 16-712) (raising due process concerns based on lack of APJ impartiality).

<sup>36</sup> John M. Golden, *Working Without Chevron: The PTO As Prime Mover*, 65 DUKE L.J. 1657, 1682 (2016).

by past examples of “panel-stacking,” where the Patent Office administration added judges to PTAB panels in the hopes of obtaining particular results.<sup>37</sup> Notably, this panel-stacking has only been used to insure procedural uniformity, not to influence invalidity determinations for particular patents,<sup>38</sup> and “individual PTAB members decide the case without agency leadership directing administrative patent judges to vote a certain way.”<sup>39</sup> While perhaps troublesome from an optimal design perspective, these impartiality issues are unlikely to constitute an unconstitutional deprivation of due process.<sup>40</sup> Non-ALJ administrative judges subject to political supervision and control are commonplace in the modern administrative state.<sup>41</sup> Likewise, the agency head’s power to review and change initial decisions reached by agency adjudicators is a defining feature of modern administrative adjudication, one that is seen as crucial to the administrative state’s legitimacy.<sup>42</sup> The limited differences between APJs and these other non-ALJ adjudicators are unlikely to rise to the level of a constitutional due process violation.<sup>43</sup>

#### D. The PTAB’s Outcomes

Opponents make various objections to outcomes at the PTAB. “[T]o some, the [invalidation numbers] suggest that the Board is out of control. As Randall Rader, once chief judge of the Federal Circuit, put it, the judges of the PTAB are ‘acting as death squads, killing property rights.’”<sup>44</sup> These opponents often rely on statistics like the fact that 81% of instituted PTAB proceedings result in at least some challenged claims being invalidated, with 63% resulting in all challenged claims being cancelled.<sup>45</sup> In fact, if any outcome other than complete confirmation is treated as adverse to the patent owner, 87.4% of outcomes for instituted petitions are adverse to the patent owner and only 12.6% are favorable to the patent owner.<sup>46</sup>

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<sup>37</sup> Walker & Wasserman, *supra* note 34, at 184–187.

<sup>38</sup> DAVID P. RUSCHKE ET AL., USPTO, NEW PTAB STUDIES IN AIA PROCEEDINGS: EXPANDED PANELS AND TRIAL OUTCOMES FOR ORANGE BOOK-LISTED PATENTS 5–30 (2018), [https://www.uspto.gov/sites/default/files/documents/chat\\_with\\_the\\_chief\\_march\\_2018.pdf](https://www.uspto.gov/sites/default/files/documents/chat_with_the_chief_march_2018.pdf).

<sup>39</sup> Walker & Wasserman, *supra* note 34, at 185.

<sup>40</sup> Kent H. Barnett, *Some Kind of Hearing Officer*, 94 WASH. L. REV. 515, 519–522 (2019) (reaching this conclusion for politically controlled non-ALJ adjudicators more generally).

<sup>41</sup> *Id.* at 8; *see also* Walker & Wasserman, *supra* note 34, at 153 (“[M]ost agency actions are adjudicated by non-ALJ agency personnel that have diverse titles . . .”).

<sup>42</sup> Walker & Wasserman, *supra* note 34, at 36–39; Barnett, *supra* note 40, at 527–529.

<sup>43</sup> Barnett, *supra* note 40, at 529 (“And the PTAB rehearings, although unorthodox, are not obviously of constitutional concern.”); *cf.* Walker & Wasserman, *supra* note 34, at 185–186 (concluding that panel stacking, rather than direct agency head review, raises “a colorable” due process argument based on a single circuit level case from the 1980s but acknowledging that this conclusion was “counterintuitive,” “stretches constitutional due process beyond existing precedent,” and could depend on distinctions that “would be odd” because the two procedures were “[i]n many ways . . . functionally equivalent”).

<sup>44</sup> Dreyfuss, *supra* note 7, at 249–51.

<sup>45</sup> USPTO, TRIAL STATISTICS: IPR, PGR, CBM, PATENT TRIAL AND APPEAL BOARD 10 (Jan. 2019), [https://www.uspto.gov/sites/default/files/documents/trial\\_statistics\\_jan2019.pdf](https://www.uspto.gov/sites/default/files/documents/trial_statistics_jan2019.pdf) [hereinafter PTAB STATS].

<sup>46</sup> *Id.* (including final settlements, dismissals, and requests for adverse judgment as adverse to the patent owner but excluding open and joined petitions).

But these numbers are misleading because they ignore that the PTAB has a strong threshold screen requiring “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition” before a PTAB proceeding is instituted.<sup>47</sup> The PTAB has denied institution in 28% of petitions.<sup>48</sup> These denials are the functional equivalent of complete confirmation of the patent, meaning that patent owners obtain completely favorable outcomes – non-institution or no claims invalidated – in 38% of PTAB proceedings and adverse judgments in 62%, even treating every settlement and dismissal as adverse to the patent owner.<sup>49</sup>

These outcomes are far less dire than PTAB opponents often portray, though are the inverse of district court litigation, where 43% of invalidity decisions result in invalidation.<sup>50</sup> However, this is to be expected since PTAB proceedings were “intended to make it systematically easier to invalidate patents generally—so that patents of questionable quality will be more likely to fall.”<sup>51</sup> Thus, the PTAB’s 62% adverse judgment rate is not in and of itself a problem, as it could reflect success at addressing the concerns that motivated the PTAB’s creation – a prevalence of “bad” patents failing the statutory criteria and the inadequacies of existing procedures for addressing this problem.<sup>52</sup> Or it could reflect significant recent judicial changes in substantive patent law that have rendered a large number of patents now-invalid even if properly issued under then applicable law.<sup>53</sup>

Beyond absolute invalidity rate, PTAB opponents contend that “the PTAB has gone too far with its charge of eliminating bad patents” and “is now invalidating patents in a willy-nilly fashion.”<sup>54</sup> This claim of indiscriminate invalidation is hard to evaluate, and ultimately somewhat circular, because there is no good criteria for whether a patent is “bad” or “good” independent of validity determinations.<sup>55</sup> PTAB opponents point to the fact that some of the patents invalidated in the PTAB were upheld in prior reexamination or litigation; that many PTAB proceedings rely on prior

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<sup>47</sup> 35 U.S.C. § 314(a) (2012) (inter partes review); 35 U.S.C. § 324(a) (post grant review) (“more likely than not that at least 1 of the claims challenged in the petition is unpatentable”); Leahy-Smith America Invents Act, 112 Pub. L. No. 29, 125 Stat. 284, 329 (2011) (covered business method review) (providing for use of same standards and procedures as post grant review).

<sup>48</sup> PTAB STATS, *supra* note 45, at 10 (excluding open petitions).

<sup>49</sup> *Id.* (excluding petitions open pre- or post-institution and joined petitions).

<sup>50</sup> John R. Allison et al., *Understanding the Realities of Modern Patent Litigation*, 92 TEXAS L. REV. 1769, 1801 (2014). To be fair, this number excludes settlements and is based on all grounds of invalidity, whereas inter partes review (the most common PTAB proceeding) is limited to anticipation and obviousness based on written prior art).

<sup>51</sup> Saurabh Vishnubhakat, *Renewed Efficiency in Administrative Patent Revocation*, 104 IOWA L. REV. 2643, 2644 (2019).

<sup>52</sup> *See* Dreyfuss, *supra* note 7, at 254–55.

<sup>53</sup> *Id.* at 255–57.

<sup>54</sup> Abbott, *supra* note 18, at 4.

<sup>55</sup> *See* Christi J. Guerrini, *Defining Patent Quality*, 82 FORDHAM L. REV. 3091, 3094–96 (2014) (recognizing the lack of “thoughtful discussion about what constitutes a patent’s quality in the first place,” which “may reflect an assumption that developing a common definition of patent quality is an impossible task” but attempting to begin the process of doing so”).



art that was before the examiner; and that patents invalidated in the PTAB covered meritorious inventions.<sup>56</sup> Putting aside questions about the representativeness of this evidence, the merits of the invention do not equate with the merits of the patent, as patent prosecutors often draft patents broadly, ambiguously, and vaguely to capture more than the inventor's actual invention.<sup>57</sup> Moreover, there is no reason to think the contrary results in the prior reexaminations or litigations were "right" and the PTAB results "wrong," rather than vice-versa.<sup>58</sup> To the contrary, the PTAB has the adversarial component missing from reexamination and unique technical and legal expertise missing from either litigation (with legally, but not technically, trained judges and lay juries) or reexamination (with technically, but not legally, trained examiners).<sup>59</sup> Without other evidence, it is more likely that the expert decision makers in an adversarial proceeding are reaching the right result,<sup>60</sup> which may explain the Federal Circuit's high affirmance rate in PTAB appeals.<sup>61</sup>

Finally, PTAB opponents make two arguments about PTAB outcomes that can be easily dismissed. First, they deny there is any problem with "bad" patents – patents that never should have issued because they fail the statutory criteria – in the first place.<sup>62</sup> This argument contradicts the long-standing and widespread consensus among patent stakeholders prior to the controversy over the PTAB.<sup>63</sup> Second, PTAB opponents fall back on the argument that the PTAB is bad for patent owners, which is undoubtedly true, and then assume that what is bad for patent owners is bad for

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<sup>56</sup> Gregory Dolin, *Dubious Patent Reform*, 56 B.C. L. REV. 881, 926–28 (2015).

<sup>57</sup> See Guerrini, *supra* note 55, at 3131–34 (recognizing faithfulness of claim scope to the actual invention is an important measure of patent quality that is often absent).

<sup>58</sup> See Dreyfuss, *supra* note 7, at 255; *cf.* Dolin, *supra* note 56, at 897 (“[T]he rate of patent invalidation [in litigation] could be an indication of the poor screening mechanism at the PTO and the ‘low quality’ of the patents issued. But, it could also be the result of the low quality of judging by those who do not understand the technology or who are generally hostile to exclusive rights secured by the patents.”).

<sup>59</sup> Dreyfuss, *supra* note 7, at 240, 255.

<sup>60</sup> *Id.* at 255 (“[T]he greater number of invalidations in CBMs and IPRs can be read as affirming the suspicion that *ex parte* procedures are not fully effective at flushing out bad claims.”); *id.* at 261 (“The institution and final decisions reflect this expertise. The Board’s opinions are extremely well written and closely reasoned; their fluidity suggests deep immersion in both the technical facts of the cases and the law to be applied.”); Thomas, *supra* note 6, at 20 (“Commentators have also lauded the PTAB for its expertise and thoroughness” as compared to district courts.); Dolin, *supra* note 56, at 897 (noting the possibility in litigation of “low quality of judging by those who do not understand the technology”).

<sup>61</sup> Matthew Sipe, *Experts, Generalists, Laypeople – and the Federal Circuit 5* (unpublished manuscript), <https://ssrn.com/abstract=3228585> (“[T]he data suggest that the Federal Circuit affirms findings made by the PTAB reliably more often than findings made by district court judges—particularly when the findings involve questions of fact rather than questions of law.”).

<sup>62</sup> Dolin, *supra* note 56, at 882 (“[T]he framers of the AIA fail to marshal solid empirical evidence in support of the claim that the system is overrun by dubious patents.”).

<sup>63</sup> See *Saint Regis Mohawk Tribe v. Mylan Pharm. Inc.*, 896 F.3d 1322, 1330–34 (Fed. Cir. 2018) (Dyk, J., concurring) (explaining that “[p]ost-grant administrative review of issued patents . . . was first enacted in 1980 to address longstanding concerns about the reliability of the original examination process” and that the PTAB proceedings were seen as necessary to address continued concern in this regard).

society.<sup>64</sup> However, “the primary purpose of our patent law is not the creation of private fortunes for the owners of patents but is ‘to promote the progress of science and useful arts.’”<sup>65</sup> The patent system thus seeks a “careful balance between the need to promote innovation, and the recognition that imitation, and refinement through imitation, are both necessary to invention itself, and the very lifeblood of a competitive economy.”<sup>66</sup>

#### E. The PTAB’s Procedures

Finally, PTAB opponents contend that the procedures at the PTAB are stacked against patent owners.<sup>67</sup> For the most part, opponents compare the PTAB to district court litigation, focusing primarily on the lack of a presumption of validity, the lower preponderance of the evidence standard of proof, the broader claim construction less favorable to patent owners (recently changed by the PTAB), more limited discovery and evidentiary rules, and the ability to challenge the same patent repeatedly.<sup>68</sup> These arguments conveniently ignore reexaminations, which shared these procedural differences from district court litigation and yet were not seen as problematic for patent owners.<sup>69</sup> To be fair, patent owners had greater opportunity to amend their claims to overcome invalidity findings in reexamination than they have had in the PTAB, but it is uncertain whether, as a matter of social policy, the PTAB’s more restrictive approach is actually problematic or if the permissive amendment policies of reexamination were too lenient.<sup>70</sup>

A related argument contends that the PTAB and the Patent Office have designed the PTAB in ways that aggrandize its own power at the expense of the judiciary and introduce politics and policy preferences into the patent system.<sup>71</sup> A full evaluation of this argument is beyond the scope of this Essay, as it relies on a series of Patent Office decisions on procedural fine points.<sup>72</sup> However, the argument seems to rest

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<sup>64</sup> Br. of the Pharmaceutical Research and Manufacturers of America Association As *Amicus Curiae* in Support of Petitioner at 29–31, *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC* 138 S. Ct. 1365 (2018) (No. 16-712) (“PhRMA Br.”) (contending PTAB is undesirable, based only on negative consequences for patent owners).

<sup>65</sup> *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 511 (1917) (quoting U.S. Const. art., Art. I, § 8).

<sup>66</sup> *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989).

<sup>67</sup> See Thomas, *supra* note 6, at 20 (summarizing these complaints that the procedures at the PTAB are stacked against patent owners.)

<sup>68</sup> See *id.* (summarizing these arguments); Dolin, *supra* note 56, at 916 (describing the “lower burden of proof and broader claim construction” as the “two key differences between PTAB and district court litigation [that] make it much easier for the patent challenger to prevail in the former forum”); Abbott, *supra* note 18, at 14–15 (pointing to more limited discovery, live testimony, and evidentiary rules as examples of procedural unfairness to the patent owner).

<sup>69</sup> See Gregory Dolin & Irena D. Manta, *Taking Patents*, 73 WASH. & LEE L. REV. 719, 737–738 (2016) (describing lack of success of reexamination procedures in invalidating patents).

<sup>70</sup> See Greg Reilly, *Amending Patent Claims*, 32 HARV. J. L. & TECH. 1, 15–17, 51–60 (2018).

<sup>71</sup> Saurabh Vishnubhakat, *Disguised Patent Policymaking*, 76 WASH. & LEE L. REV. (forthcoming 2019) (manuscript at 4), <https://ssrn.com/abstract=3242146>.

<sup>72</sup> *Id.* at 6–25 (pointing, in addition to panel stacking, to supposedly lenient threshold screening, interpretation of joinder and time-bar rules, interpretation of whether PTAB can partially institute a

on a general skepticism of administrative power and preference for judicial control of the patent system,<sup>73</sup> as well as a belief that patent decision-making should be neutral and apolitical.<sup>74</sup> Both of these assumptions are highly contested.<sup>75</sup>

### III. Patent Owner Reliance Interests and the PTAB

That the arguments generally made by PTAB opponents are unpersuasive does not necessarily mean that the PTAB is unproblematic. A core problem may be motivating all of these arguments, even if frequently disguised under the flawed theories PTAB opponents offer.<sup>76</sup> The PTAB's effectiveness at invalidating patents may have revealed a more general problem with ex post patent invalidation previously obscured by the ineffectiveness of prior procedures.<sup>77</sup> The PTAB's effectiveness at invalidating patents that were erroneously issued may come at a cost because those patents were issued, patent owners relied on them, and ex post invalidation undermines investment and reliance interests that would have never been incurred if the patent had been properly rejected during ex ante examination.<sup>78</sup> Whether or not these reliance costs are actually problematic depends on their extent and their relationship to the other benefits and cost of ex post invalidation.<sup>79</sup>

#### A. Ex Post Invalidation and Patent Owner Reliance Interests

During the *Oil States* oral argument, Justice Breyer suggested “it would be a problem” if a “patent has been in existence without anybody reexamining it for 10 years and, moreover, the company’s invested \$40 billion in developing it. And then suddenly somebody comes in and says . . . we want it reexamined, not in court but by the Patent Office.”<sup>80</sup> This concern was shared by Chief Justice Roberts and Justice Gorsuch.<sup>81</sup> Long overlooked in patent policy debates,<sup>82</sup> the Justices’ concerns echo increasing attention to the way in which ex post patent invalidation disturbs reliance interests and undermines investments.

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petition, and Patent Office opposition to Federal Circuit review of screening and interlocutory decisions).

<sup>73</sup> *Id.* at 5 (rejecting the idea that power in the patent system should be shifted from courts to the Patent Office); *id.* at 12–13 (criticizing panel stacking for introducing political judgments into ostensibly neutral adjudication, even though such an arrangement is typical of the administrative state).

<sup>74</sup> *Id.* at 52–53 (“Placing a political filter at the threshold of the process, however, undermines the presumed procedural neutrality of technical expertise . . . [and it] is questionable whether apolitical impartiality should be sacrificed in exchange for technical expertise in this way.”).

<sup>75</sup> See Dreyfuss, *supra* note 7, at 299 (stating that “the Federal Circuit has displayed significant reluctance about sharing its authority” with the PTAB even though “there are both institutional and normative reasons to give the Patent Office a larger role in the development of patent jurisprudence” and suggesting more reliance on policy considerations).

<sup>76</sup> See *infra* Part II.B.

<sup>77</sup> See *id.*

<sup>78</sup> See *infra* Part II.A.

<sup>79</sup> See *infra* Part II.C.

<sup>80</sup> Transcript of Oral Argument at 29: 10-18, *Oil States*, 138 S. Ct. 1365 (2018) (No. 16-712).

<sup>81</sup> *Id.* at 29:10-18; 42:13-20; 54:2-11.

<sup>82</sup> See Arti K. Rai, *Patent Validity Across the Executive Branch: Ex Ante Foundations for Policy Development*, 61 DUKE L.J. 1237, 1263 (2012) (most concerns about retroactivity and disturbance of settled expectations as “[l]ess recognized” in debates over design of the patent system).

Specifically, commentators and judges increasingly recognize that “firms form reliance interests around patents.”<sup>83</sup> “[I]nvestors and corporate decision makers frequently rely upon the then-existing law in deciding whether to finance and engage in the patenting process.”<sup>84</sup> The invalidation of a patent after issuance disturbs these settled expectations and undermines reliance interests formed based on patent protection.<sup>85</sup> Reliance concerns with ex post patent invalidation are an example of larger phenomena, since “[a]lmost any change in legal rules or market conditions that is not fully anticipated will affect the value of firms, assets, or other investments that are directly targeted . . .”<sup>86</sup> In the patent context, these concerns have largely arose in the context of changes in legal rules that render a patent invalid that was properly issued under then-existing law.<sup>87</sup> Reliance concerns also exist with ex post procedures to correct errors in patent examination and invalidate patents that should not have been originally issued, even in the absence of any intervening change of law. From the patent owner’s perspective, the cost is the same whether the invalidation is due to an intervening change in law or erroneous Patent Office examination.<sup>88</sup>

Reliance costs from ex post patent invalidation fall into two categories. First, as Professor Jonathan Masur and Adam Mortara most cogently recognize, instability in patent rights “can be expected to lead to less R&D investment” by future putative patent holders,” who “may fear that they will never recoup their R&D investments and refrain from making those investments in the first place,” undermining patent law’s basic goal of incentivizing innovation.<sup>89</sup> Second, existing patent owners suffer losses when their patents are invalidated in the form of lost or diminished investments made in reliance on the exclusive rights of patent protection, i.e., the investments in commercialization (e.g., turning the invention into a commercial product; building

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<sup>83</sup> Jonathan S. Masur & Adam K. Mortara, *Patents, Property, and Prospectivity*, 71 STAN. L. REV. 963, 971 (2019).

<sup>84</sup> David L. Schwartz, *Retroactivity at the Federal Circuit*, 89 IND. L.J. 1547, 1553–54 (2014); *see also* Michael Burstein, *Rules for Patents*, 52 WM. & MARY L. REV. 1747, 1781 (2011) (“Once reasonable expectations of the state of the law regarding patents are in place, inventors and entrepreneurs will make investment decisions in reliance upon those settled expectations.”).

<sup>85</sup> Rai, *supra* note 82, at 1263 (“Actions taken long after an issue has arisen, and that have retroactive effect, raise concerns about disturbing settled expectations.”); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 739 (2002) (“[C]ourts must be cautious before adopting changes that disrupt the settled expectations of the inventing community.”); *Association for Molecular Pathology v. U.S.P.T.O.*, 689 F.3d 1303, 1343 (Fed. Cir. 2012) (Moore, J., concurring) (“[W]e must be particularly wary of expanding the judicial exception to patentable subject matter where both settled expectations and extensive property rights are involved.”).

<sup>86</sup> Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 Harv. L. Rev. 509, 517 (1986) (identifying “changes in patent protection” as an example of the larger phenomena).

<sup>87</sup> *See, e.g.*, Masur & Mortara, *supra* note 83, at 975 (“Changes to patent law most evidently produce investment-related costs when courts invalidate existing patents and narrow the scope of what is patentable.”).

<sup>88</sup> *See* Burstein, *supra* note 84, at 1781 (emphasizing the need for “stability” in patent rights and “setting ex ante expectations” to allow appropriate investment decisions). The foreseeability of the risk may differ. *See infra*, Part II.C.

<sup>89</sup> Masur & Mortara, *supra* note 83, at 972; *see also* Kaplow, *supra* note 86, at 527 (“[U]ncertainty concerning future government action - in particular, uncompensated action adversely affecting investments - will disrupt investment generally . . .”).

manufacturing facilities; establishing marketing and distribution; etc.).<sup>90</sup> In the context of intervening changes of law, Masur and Mortara discounted this second category of costs as merely a “private harm” of the patent owner because “from the perspective of society, this is just a wealth transfer from the firm to the general public. No harm has occurred.”<sup>91</sup>

However, for three reasons, the reliance costs of existing patent owners may be relevant in evaluating the social desirability of ex post invalidation procedures. First, some losses to the patent owner may not be offset by corresponding gains to the public.<sup>92</sup> For example, if patent protection caused the patent owner to forego an alternative product or business path, which is no longer available, it may have suffered a loss even without the public gaining anything. Second, distributive concerns could be relevant to determining optimal policy, since imposing a concentrated loss on an individual to achieve a dispersed public benefit is often seen as undesirable.<sup>93</sup> Finally, the patent owner's potential losses may affect the optimal timing of invalidation.<sup>94</sup> If a patent is invalidated ex ante in examination, the gain to the public is the same or greater than ex post invalidation, but the patent owner will not incur reliance costs.

Reliance problems for ex post patent invalidation exist not just for incorrect invalidity decision that invalidate patents that actually meets the statutory criteria of patentability but also for correct invalidity decisions.<sup>95</sup> “What matters are the expectations of the private firms that make investment decisions.”<sup>96</sup> If patent owners cannot accurately predict whether or not their particular patent will be subject to ex post invalidation, they will either make investments in reliance on patent protection that will be lost or diminished when the patent is invalidated ex post or be deterred from making such investments all together because of the risk of ex post invalidation. Either outcome may be socially undesirable.

## B. The PTAB and Ex Post Invalidation

The reliance problems of ex post invalidation do not, on first glance, explain

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<sup>90</sup> See Oral Argument Tr., *Oil States* at 54:2-11 (recognizing that “people invest in their patents to the tunes of billions of dollars in [for example] building the plant that’s going to make the product”); *Myriad*, 689 F.3d at 1344 (Moore, J., concurring) (“This outpouring of scientific creativity, spurred by the patent system, reflects a substantial investment of time and money by the biotechnology industry to obtain property rights related to DNA sequences” that would be lost if those patents were invalidated).

<sup>91</sup> Masur & Mortara, *supra* note 83, at 972; see also Kaplow, *supra* note 86, at 553 (“[C]hanges in government policy typically generate gains and losses in the same manner . . .”).

<sup>92</sup> See Kaplow, *supra* note 86, at 552 n.124 (“[P]olicy changes need not always result in net gains.”).

<sup>93</sup> See Kaplow, *supra* note 86, at 527–528 (describing general tendency to avoid risk and to spread the possibility of large losses using insurance and similar measures).

<sup>94</sup> See *infra*, Part III.

<sup>95</sup> Cf. Masur & Mortara, *supra* note 83, at 974 (“[L]egal instability can upset reliance interests and create problems of inadequate investment regardless of whether or not the change in law is generally helpful or harmful.”); Kaplow, *supra* note 86, at 521 (recognizing that investments can be undermined from legal change even if the change is desirable).

<sup>96</sup> Masur & Mortara, *supra* note 83, at 974.

concerns with the PTAB specifically. The American patent system has never made ex ante patent examination conclusive. Issued patents have consistently been subject to ex post invalidation “in different forms over the past two and a quarter centuries [of American law].”<sup>97</sup> “[T]he primary means of contesting issued patents . . . has [always] fallen mostly to defendants in infringement litigation.”<sup>98</sup> Moreover, “[f]or the first forty-six years of the U.S. patent system . . . [s]uccessive governing statutes provided that any party could petition a federal district court to repeal a patent, within a set period after it issued,” first one year and then three years.<sup>99</sup> This repeal procedure was used as a means of policing patent validity ex post.<sup>100</sup> In 1952, Congress made issued patents subject to ex post invalidation in the Patent Office if an interference found that a subsequent patent applicant invented the subject matter first.<sup>101</sup> More recently, beginning in 1981 and expanded in 1999, Congress made all patents subject to ex post invalidation in the Patent Office through reexamination procedures.<sup>102</sup>

Despite Justice Breyer’s suggestion that reliance concerns were greater when ex post invalidation occurred “not in court but by the Patent Office,”<sup>103</sup> the loss to the patent owner is the same whether its patent is invalidated in litigation, reexamination, or PTAB proceedings.<sup>104</sup> Thus, patent owner reliance costs are not a potential problem of PTAB proceedings specifically but instead of ex post invalidation generally.

The PTAB, however, has highlighted and exacerbated patent owner reliance concerns. The comparative ineffectiveness of district court litigation and reexamination at invalidating patents—one of the concerns that motivated Congress’s creation of the PTAB<sup>105</sup>—also served to shield patent owners from the consequences of ex post invalidation, even for “bad” patents. Patent owners, even of patents that failed the statutory criteria for patent protection, were shielded from the reliance costs of ex post invalidation in district court litigation by the presumption of validity and the accompanying burden on the accused infringer to prove invalidity by clear and convincing evidence.<sup>106</sup> A patent owner facing a strong invalidity challenge that

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<sup>97</sup> Beauchamp, *supra* note 3, at 647.

<sup>98</sup> *Id.* at 648.

<sup>99</sup> *Id.* at 660.

<sup>100</sup> *Id.* at 688.

<sup>101</sup> P. J. Federico, *Commentary on the New Patent Act*, 75 J. PAT. & TRADEMARK OFF. SOC’Y 161, 198 (1993) (reprinted from version originally published in 1954).

<sup>102</sup> See MPEP §§ 2209, 2609.

<sup>103</sup> Transcript of Oral Argument at 29, *Oil States Energy Servs., LLC v. Greene’s Energy Grp.*, 138 S. Ct. 1365 (2018) (No. 16-712).

<sup>104</sup> See Kaplow, *supra* note 86, at 534 (noting that “[a] private actor should be indifferent as to” the source of “a given probability [that] loss will result”).

<sup>105</sup> Dreyfuss, *supra* note 7, at 236 (“Congress adopted these procedures to improve the likelihood that invalid patents would be quickly weeded out of the system.”).

<sup>106</sup> See David L. Schwartz & Christopher B. Seaman, *Standards of Proof in Civil Litigation: An Experiment from Patent Law*, 26 HARV. J. L. & TECH. 429, 432 (2013) (describing experimental data showing that “[s]ubjects who received the preponderance of the evidence standard found the [same] patent invalid more often than those who received the clear and convincing evidence standard.”).

could overcome this burden normally could avoid the reliance costs of ex post invalidation by leveraging the costs and uncertainty of litigation to reach a private settlement with the defendant to avoid a final judgment of invalidity.<sup>107</sup> Although patent owners in reexamination lack the presumption of validity and some of the settlement leverage of litigation, they have a liberal opportunity to amend the claims to overcome an invalidity finding, allowing the patent owner to retain some patent protection and protect reliance interests to some extent.<sup>108</sup>

By contrast, the PTAB does not use the presumption of validity and, in the past, made it virtually impossible for patent owners to amend their claims.<sup>109</sup> The lower costs and more favorable outcomes for challengers in the PTAB also give the patent owner less leverage to force a settlement,<sup>110</sup> and, even if it does, the PTAB can continue the proceeding on its own to reach a determination about the patent's validity.<sup>111</sup> Unsurprisingly, PTAB proceedings have been much more effective at invalidating issued patents than either litigation or reexamination. In its first six and a half years, the PTAB has invalidated claims 2087 times.<sup>112</sup> Over a 38 year period, only 1896 reexaminations resulted in claim invalidation.<sup>113</sup> Likewise, one study found only 131 invalidity decisions in all district court patent cases filed in a two year period.<sup>114</sup>

Thus, while in theory the PTAB does not present a unique threat to patent owners' reliance interests as compared to previous means of ex post patent invalidation, it does as a practical matter because of its greater effectiveness at invalidating patents. This increased threat to patent owner reliance interests seems to be at the heart of much of the concern and opposition expressed about the PTAB, even when that concern and opposition is articulated in other terms.<sup>115</sup>

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<sup>107</sup> Megan M. La Belle, *Against Settlement of (Some) Patent Cases*, 67 VAND. L. REV. 375, 398–403 (2014).

<sup>108</sup> See Reilly, *Amending*, *supra* note 70, at 15–16, 39–40.

<sup>109</sup> See Dolin, *supra* note 56, at 916–917.

<sup>110</sup> Michael Xun Liu, *Balancing the Competing Functions of Patent Post-Grant Proceedings*, 25 J. INTELL. PROP. L. 157, 172 (2018) (“Providing a cheaper alternative to district court litigation should make it harder to extract nuisance settlements.”).

<sup>111</sup> Dreyfuss, *supra* note 7, at 261.

<sup>112</sup> PTAB STATS, *supra* note 45, at 10.

<sup>113</sup> USPTO, *Ex Parte Reexamination Filing Data (Sept. 30, 2017)*; USPTO, *Inter Partes Reexamination Filing Data (Sept. 30, 2017)*.

<sup>114</sup> Allison et al., *supra* note 50, at 1785.

<sup>115</sup> See, e.g., Vishnubhakat, *Disguised Patent Policymaking*, *supra* note 71, at 36 (“The current practices of Patent Office aggrandizement have compounded existing difficulties in the patent system’s ongoing struggle to provide stable rights.”); Dolin & Manta, *supra* note 69, at 788–795 (raising constitutional arguments on ground that patent owners “should not be subject to this kind of drastic restriction of their investment-backed expectations”); Dolin, *supra* note 56, at 883 (raising various procedural concerns with PTAB because “[a] particular problem for the stability of patent rights is the presence of post-issuance procedures that can be used to invalidate already issued patents.”); Abbott, *supra* note 18, at 4 (raising various procedural concerns with PTAB out of concern for “the lost investments in the invalidated patents themselves” and the “uncertainty for inventors and investors, undermining the foundations of the U.S. innovation economy”).

### C. Questioning Whether Patent Owner Reliance Interests Is Really a Problem of the PTAB

The PTAB has undoubtedly increased the risk of ex post invalidation of patent rights as compared to other procedures and, as a result, poses a comparatively greater risk to patent owner reliance interests. But that does not mean that patent owner reliance interests are actually a problem with the PTAB, or at least a problem that requires a solution. Sound reasons exist to question the extent to which PTAB invalidation interferes with patent owner reliance interests, to assign responsibility to the patent owner for any reliance costs they incur, and to think that any reliance costs are outweighed by the benefits of PTAB invalidation.

The potential reliance cost concern with the PTAB depends on two premises: that the patent owner made investments in reliance on patent protection and that those investments were diminished or rendered worthless by patent invalidation. As to the second premise, the patent owner's investments may remain protected, even after patent invalidation, by the consequences of the first mover advantage conferred by the now invalidated patent, such as developed expertise, brand recognition, established distribution networks, customer loyalty, etc.<sup>116</sup> Moreover, at least some of the costs incurred in reliance on patent protection (e.g., building manufacturing facilities or establishing distribution networks) may be transferable to other product lines or business pursuits.

As to the first premise, a fairly large number of patents invalidated in the PTAB are owned by non-practicing entities who only license and do not commercialize in a way that would generate significant reliance interests.<sup>117</sup> More generally, the extent of costs incurred in reliance on patent protection will vary with the circumstances and industry.<sup>118</sup> For example, inventions in computer-related fields tend to be commercialized before patent protection, and are often obsolete around the time that the patent issues,<sup>119</sup> suggesting limited reliance interests. By contrast, patent protection is seen as a necessary prerequisite for pharmaceutical and biotech companies to undertake the clinical trials and other commercialization efforts necessary in these industries,<sup>120</sup> suggesting significant reliance interests.

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<sup>116</sup> F.M. Scherer, *First Mover Advantages and Optimal Patent Protection* 13 (Harvard Kennedy School of Government, Working Paper No. 14-053, 2014), available at <https://ssrn.com/abstract=2538621>. (“[N]on-patent first mover advantages often provide sufficient incentive for technological innovation even without patent protection . . .”).

<sup>117</sup> See UNIFIED PATENTS, *2018 Patent Dispute Report: Year in Review* (Jan. 2, 2019), <https://www.unifiedpatents.com/news/2019/1/2/2018-patent-dispute-report-year-in-review>.

<sup>118</sup> See Andres Sawicki, *Better Mistakes in Patent Law*, 39 FLA. ST. U. L. REV. 735, 749 (2012) (“The industry-specific correlation of timing within the patent system to timing outside the patent system will affect, on an industry-specific basis, the relative assessment of mistakes made at different times [i.e., during examination and ex post.]”)

<sup>119</sup> *Id.* (“In the software industry, on the other hand, both early [in examination] and late [post-issuance] evaluations [of patentability] often occur after product launch.”) *Id.*

<sup>120</sup> *Id.* (“In the pharmaceutical industry, for example, an early evaluation [of patentability in examination] will occur before the firm launches a drug incorporating the patented invention, and a late evaluation [post-issuance] will occur after the drug is on the market.”) *Id.*



Even if patent owner reliance costs exist, the patent owner itself may be responsible for these costs. Arguably, the patent owner is responsible for the ex post invalidation because it failed to draft, submit, and obtain patent claims that satisfy all of the statutory criteria and therefore has no legitimate claim to protection of its reliance interests.<sup>121</sup> However, this assumes that patent owners can accurately identify the line between fully protecting their actual invention and encroaching on the prior art or going beyond the written description in a way that renders the patent invalid and can accurately draft claims to reflect this line, a task that is notoriously difficult.<sup>122</sup> Alternatively, at least some ex post invalidations result not from a miscalculation of the patentability of the claims during examination but rather from the patent owner's actions after patent issuance in exploiting the inherent malleability of patent claims to stretch their patent rights beyond their actual invention to cover new technology or new developments in the market that would not have been thought to be within the scope of the patent rights during patent examination.<sup>123</sup> This argument is more persuasive, though it is unclear how many patents invalidated at the PTAB fit into this category.

Finally, even if PTAB invalidation imposes patent owner reliance costs, the PTAB may still be socially desirable when all the costs and benefits are weighed. In particular, the existence of invalid patents imposes well-recognized, and perhaps significant, costs on the public.<sup>124</sup> Moreover, limiting ex post invalidation, combined with the well-recognized costs of invalid patents and the incentives of patent owners, may necessitate expending more resources in ex ante examination to prevent issuance of invalid patents.<sup>125</sup> This might not be the optimal apportionment of resources, given that very few issued patents ever become relevant.<sup>126</sup>

#### **IV. Implications of Recognizing Patent Owner Reliance Interests as the PTAB's Potential Problem**

This Essay does not suggest that patent owner reliance costs are an actual problem with the PTAB or, more precisely, a problem in need of a solution. More work would be needed to catalog and empirically evaluate the nature, extent, and frequency of patent owner investments made in reliance on patent protection, as well as the degree to which PTAB invalidation eliminates or reduces the value of those

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<sup>121</sup> See Kaplow, *supra* note 86, at 524 (noting that “there does not exist a legitimate expectation of continuing to profit from such activity” that is harmful).

<sup>122</sup> See Reilly, *Amending*, *supra* note 70, at 27; see also Kaplow, *supra* note 86, at 525 (“The argument that legal change should be expected is also factually misleading because the recognition that the legal system is dynamic does not give one clairvoyance concerning the precise changes that will occur.”).

<sup>123</sup> Jason Rantanen, *The Malleability of Patent Rights*, 2015 MICH. ST. L. REV. 895, 899 (2015) (“[T]he answers to questions about patent validity and scope can be changed by the actions of the patent’s owners and potential infringers. Patent rights can be pushed and pulled.”).

<sup>124</sup> See Michael Frakes & Melissa F. Wasserman, *Irrational Ignorance at the Patent Office*, 72 VAND. L. REV. 975, 1013–1016 (2019).

<sup>125</sup> See Kaplow, *supra* note 86, at 528–29 (recognizing the negative incentives protection from legal change can create).

<sup>126</sup> See *infra* Part III.

investments. Then whatever patent owner reliance costs exist would have to be weighed along with the other benefits and costs of the PTAB to reach a conclusion of its ultimate social optimality.

This Essay's more limited point is that reliance issues seem to be underlying much of the concern with the PTAB, even when that concern is framed in other terms, and are a more plausible problem than the objections that have been the focus of PTAB debates to date. For that reason, focusing more on reliance concerns would make for a more productive debate over the PTAB. Perhaps it is not surprising that PTAB opponents have focused on less plausible concerns about constitutional power and fundamental fairness, as these offer potential trump cards to foreclose further debate.<sup>127</sup> By contrast, reliance costs from disturbing settled expectations are merely one policy consideration for Congress to consider in structuring the patent system.<sup>128</sup> Congress has "the constitutional authority and the institutional ability to accommodate fully the varied permutations of competing interests that are inevitably implicated," including the reliance interests and settled expectations of patent owners.<sup>129</sup>

Patent owner reliance concerns are worth further exploration and consideration even if they do not ultimately weigh against the optimality of the PTAB because they still could affect design choices for the PTAB. Most notably, the PTAB (by statute) does not require invalidity to be proven by clear and convincing evidence, unlike district court litigation.<sup>130</sup> This is not surprising, since the presumption of validity is normally justified on grounds of administrative deference to the expert Patent Office's prior decision granting the patent,<sup>131</sup> a rationale that is inapplicable when it is the expert Patent Office itself evaluating invalidity post-issuance. If patent owner reliance interests are shown to be a significant cost of ex post invalidation, application of the presumption of validity to the PTAB might be warranted, justified by reliance interests instead of administrative deference. Similarly, evidence of significant reliance concerns might warrant importing reexamination's more liberal approach to claim amendments into the PTAB to allow patent owners to retain some measure protection.<sup>132</sup> Of course, the benefits of these or other changes to the PTAB to protect reliance interests might be outweighed by the degree to which they undermine the PTAB's effectiveness at invalidating patents failing the statutory criteria of patentability.

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<sup>127</sup> See Mark A. Lemley, *The Constitutionalization of Technology Law*, 15 BERK. TECH. L.J. 529, 533 (2000) ("If you are a loser in this [legislative] process . . . [t]he Constitution is the perfect avoidance mechanism . . .").

<sup>128</sup> *Festo*, 535 U.S. at 739 (concluding that "[t]he responsibility for changing" rules that "risk destroying the legitimate expectations of inventors in their property" is one that "rests with Congress"); *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 594 n.7 (2013) ("Concerns about reliance interests arising from PTO determinations, insofar as they are relevant, are better directed to Congress.").

<sup>129</sup> *Ass'n for Molecular Pathology*, 689 F.3d at 1347 (Moore, J., concurring in part).

<sup>130</sup> See 35 U.S.C. § 316(e) (2012).

<sup>131</sup> *Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2243 (2011).

<sup>132</sup> See Reilly, *Amending*, *supra* note 70, at 15–16, 39–40.

Finally, greater consideration and exploration of patent owner reliance costs may affect the debate among patent scholars as to whether or not it is “rational” to invest more resources to improve the quality of ex ante patent examination. Professor Mark Lemley famously concluded that the limited resources currently spent on patent examination (whereby examiners get approximately 20 hours per patent application) reflected “rational ignorance” because investing more money on examination would be a waste for the vast number of patents that are never litigated, licensed, or otherwise used.<sup>133</sup> Recently Professors Melissa Wasserman and Michael Frakes have used new data to question some of Lemley’s assumptions and concluded that greater investments in patent examination (in the form of more examiner time per application) would be rational.<sup>134</sup>

Neither Lemley nor Frakes and Wasserman give weight to patent owner reliance costs that might arise from the decision to invest in limited ex ante examination and rely on ex post invalidation to eliminate erroneously granted patents. Lemley focuses primarily on decision costs (examination and litigation costs), though he does acknowledge the cost to patent owners and competitors from delay and uncertainty in resolving patent validity before dismissing it as likely insignificant.<sup>135</sup> Frakes and Wasserman focus primarily on decision costs before suggesting that the social costs of invalid patents provide further support for their conclusion, without addressing the reliance costs of patent owners from delayed invalidation.<sup>136</sup> To the extent they are actually present, patent owner reliance costs could be relevant to this debate over whether to invest more in ex ante patent examination. The Patent Office’s “ignorance” in examination may cause patent owners to incur reliance costs that they would never have incurred with more strenuous ex ante examination, a cost that should be considered in evaluating whether expending more resources on ex ante examination is a rational investment.

## V. Conclusion

Concerns raised by opponents of the PTAB to date are largely unpersuasive. However, underlying their concerns may be a more legitimate problem – ex post patent invalidation undermines reliance interests of patent owners that never would have developed if the patent had been rejected as unpatentable during ex ante patent examination. This is a potential problem of ex post patent invalidation generally, not the PTAB specifically, but has become more apparent as the PTAB has made ex post invalidation more common. The extent, source, and consequences of such reliance costs are questionable and require much more exploration and evaluation. These issues, however, would be a better focus for debates over the optimality of the PTAB generally, and its design choices specifically, than existing arguments focused on constitutional power, supposed procedural bias, and the PTAB’s absolute invalidity rate. They also may be relevant to ongoing debates about whether it would be rational

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<sup>133</sup> Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. U. L. REV. 1495, 1496–97 (2001).

<sup>134</sup> Frakes & Wasserman, *supra* note 124, at 980.

<sup>135</sup> Lemley, *Rational*, *supra* note 133, at 1520–21.

<sup>136</sup> Frakes & Wasserman, *supra* note 124, at 1013–1016.

to expend more resources on ex ante patent examination.