Reversal Rates of Ex Parte Appeals: High Variability Across PTAB Judges

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Patent examination frequently includes a formalized back-and-forth between an examiner at the U.S. Patent and Trademark Office (USPTO) and the patent application's applicant: The examiner rejects the application under one or more statutory grounds, the applicant argues against the rejection and/or amends the claims, and the examiner then reconsiders the application. Frequently, after a small number of rounds, the application is allowed. Other times, it becomes clear that the examiner and applicant are not seeing eye-to-eye on a particular issue.

Fortunately, the applicant can decide to appeal rejections to the Patent Trial and Appeal Board (PTAB), so as to recruit other decision makers. [1] As of 2017, the PTAB consists of 274 administrative patent judges [2] who conduct trials for issued patents (e.g., inter partes reviews) and review appeals of rejected patent applications (e.g., ex parte appeals). For each decision, a panel of PTAB judges convenes to issue the decision. Many panels consist of three judges, with one judge serving as the opinion judge, who writes the decision. [3]

With such a large number of decision makers at the PTAB, maintaining uniformity in decision-making is critically important to applicants seeking patent protection and to the public to ensure that limited monopolies are fairly and consistently granted. Inconsistent appeal decisions can cause significant damage; for instance, applicants may have to endure unnecessarily prolonged and costly prosecution, innovation may be stifled, and market share may be lost. [4]

While the predictability of reaching an allowance during prosecution can be easily quantified, [5] the predictability of succeeding in an appeal cycle has gone largely undiscussed. We set out to determine the extent of variability in ex parte appeal decisions issued by PTAB judges. First, we describe our data collection methodology. Second, we analyze the overall variability in appeal decisions across all PTAB judges. Third, to reduce variability caused by technology differences, we discuss our methodology for

grouping appeal decisions by technology sector, and we analyze the variability of appeal decisions across the various technology sectors. Last, we conclude with implications and possible interpretations of the data we collected.

Data Collection Methodology

To evaluate recent variability trends in PTAB decisions, we submitted a request to the USPTO for all ex parte appeal decisions issued in 2017. We also requested an identification of the art unit assigned to the underlying application and the overall PTAB decision (as being a full affirmance, a split, or a full reversal). [6] For each appeal, we used Anticipat.com [TM], a database that annotates ex parte appeals at the PTAB, to identify the opinion judge of the panel. [7] We defined a limited decision data set for each judge to include those decisions for which the judge was the opinion judge. We acknowledge that other judges on the panel can also influence a decision. However, given that the opinion judge authors the decision (and often drives decision-making analyses), we assumed this data set criteria should indicate that the judge actively participated in each decision in the data set.

For each opinion judge, we defined a reversal rate as being the number of full reversal decisions divided by the number of total decisions. We excluded data corresponding to opinion judges with 10 or fewer issued decisions within the identified time range for statistical purposes.

Variability of All PTAB Appeal Decisions Is Large and Leans Toward Examiner Deference

Figure 1 shows the overall distribution of reversal rates across PTAB judges. The USPTO designates a decision as being a reversal when all rejections against all claims have been reversed. In contrast, a decision is designated as being an affirmance when all claims stand rejected under at least one ground of rejection. [8] Thus, a full affirmance designation does not require that all rejections were affirmed. For example, if all claims were rejected as allegedly being obvious under 35 U.S.C. § 103 and also ineligible under 35 U.S.C. § 101, and the judges reverse the obviousness rejection but affirm the eligibility rejection, the decision would be tagged as a full affirmance by the USPTO. A split indicates that at least one claim continues to be rejected under one or more grounds and that there is no standing rejection against at least one other claim.

Figure 1: Distribution Across PTAB Judges of Reversal Rates

Overall, decisions were more likely to be designated as an affirmance than a reversal. Specifically, of the 12,215 decisions in our data set, 57 percent were full affirmances, 12 percent were split, and 31 percent were full reversals. When we calculate rates of affirmances, splits, and reversals for individual judges, similar statistics (unsurprisingly) emerge, where the median rates for affirmances, splits, and reversals at the per-judge level were 60 percent, 11 percent, and 29 percent, respectively. Thus, applications frequently return from the PTAB with all claims remaining in a rejected state.

The distribution indicates that there is a sizable spread across PTAB judges with respect to decision types. Some PTAB judges have reversal rates above 50 percent (12 judges in our data set, which corresponds to 7 percent of the judges). Meanwhile, other PTAB judges have reversal rates below 10 percent (10 judges in our data set, which corresponds to 6 percent of the judges).

While uniformity and consistency of the PTAB is desirable, justifiable variation may nonetheless be observed due to different fact patterns of various appeals. For example, reversal types may be correlated with the type(s) of rejection at issue. We have previously shown that the prevalence of various rejection types drastically differed across technology areas. [9] We have also shown that there is marked variability across technology areas with respect to the fraction of appeals that the USPTO advances to the PTAB (instead of pulling the application from appeal via an allowance or office action). [10] Thus, if individual judges' decisions were focused on particular technology areas, the variability may be at least partly explained by differences in the rejection types and stringency associated with examination across technology areas.

PTAB Judges' Decisions Are Technology Focused but Frequently Span Technology Centers

To address this hypothesis, we first determined whether individual PTAB judges' decisions were concentrated in a given technology area. Specifically, we tagged each decision with the opinion judge and the technology center (TC) associated with the corresponding patent application. We then identified, for each judge, the number of decisions associated with each technology area.

We then performed pair-wise correlations between the number of decisions issued by individual judges across a pair of technology areas. Specifically, a vector was generated that had a length equal to the number of judges and indicated the number of decisions issued by each judge that corresponded to the technology area. We then calculated the correlation coefficient between each pair of vectors (see tbl. 1). A positive correlation coefficient (as represented by red cells) indicates that judges that issued decisions for one of the technology areas associated with the coefficient were likely to have issued decisions for the other of the technology areas associated with the coefficient. A negative correlation coefficient (as represented by gray cells) represents the converse. If each PTAB judge were assigned to only review appeals from a given technology area, we would expect to see red cells along the diagonal in table 1 but not elsewhere.

Table 1: Correlation Coefficients Between Quantities of Decisions Issued by Individual Judges Across Indicated Technology Areas

Table 1 indicates that judges' decisions are concentrated in particular technology areas. However, the focus does not appear to precisely be at a level of the USPTO TCs. For example, the high numbers in the 2100–2600 nine-cell block indicate that judges who frequently issued decisions in one of TC 2100, 2400, or 2600 were quite likely to issue decisions in another of these TCs. Notably, TCs 2100, 2400, and 2600 each relate generally to computer-based inventions. In addition, a strong positive relationship exists between the non–business method art units (e.g., "Other 3600") and TC 3700. Each of these technology areas relate to a rather diverse set of technological classes.

Thus, table 1 indicates that individual judges' decisions are focused with respect to general technological areas, and these areas may extend beyond the USPTO TC characterizations. Accordingly, to examine an extent to which the variation shown in figure 1's distribution may be due to technology areas, we defined technology areas in view of table 1's correlations. Specifically, we defined the following technology-

related groups: (1) “Bio AUs” (biology-related art units) as including appeals associated with TC 1600; (2) “Chem AUs” (chemistry-related art units) as including appeals associated with TC 1700; (3) “Comp AUs” (computer-related art units) as including appeals associated with TCs 2100, 2400, and 2600; (4) “SmCnd/Optics AUs” (semiconductor/optics art units) as including appeals associated with TC 2800; (5) “BizMeth AUs” (business method art units) as including appeals associated with art units 3621–29 and 3681–96; and (6) “Misc AUs” as including appeals associated with the non–business method art units of TC 3600 and TC 3700.

Even within Technology-Related Groups, the Variability of Appeal Decisions Is Widely Spread

For each technology area, we identified a set of judges to include each judge who was the opinion judge on at least 10 decisions. Within each technology area, we then defined a reversal rate, for each of the judges in the set, to be the percentage of decisions associated with the technology area that were designated (see tbl. 2). The overall decisions represented in this analysis was approximately two-thirds of that from the more generalized analysis above, due to the technology-specific 10-decision threshold.

Reversal rates were highest across the miscellaneous art units and lowest in the business method and biological areas. We then turned to address an extent to which reversal rate variability was observed within individual technology areas. Figure 2 below shows the distribution of reversal rates across judges for each technology group.

Figure 2: Technology-Related Distribution of Reversal Rates Across PTAB Decisions

As can be seen from figure 2, the variability is significant even when we accounted for variability due to technology differences between appeals. For example, the distribution of reversal rates across judges for the Comp AUs is large (ranging from 9 percent to 74 percent). As another example, within the biological technology area, the reversal rate of appeals in this area across judges ranged from 13 percent to 58 percent. Thus, it appears as though technology-related examination differences is insufficient to account for the variability in reversal rates shown in figure 1.

Discussion

The variability is potentially of substantial consequence to applicants. Throughout prosecution, applicants make prosecution decisions: whether to amend the claims (and, if so, how); whether to abandon the application or proceed with prosecution; whether to use various USPTO programs (e.g., the Pre-Appeal Brief Conference Pilot Program or the After Final Consideration Pilot Program); whether to request an interview (and whether to request participation from a primary and/or supervisory examiner); and/or whether to appeal. Intelligently identifying strategies involves considering the probabilities that any potential strategy will successfully lead to an allowance. However, our data shows that identifying this probability for the appeal route can be difficult: not only is there substantial variability of reversal rates across judges, but an applicant must decide whether to appeal a rejection before knowing which judges would be assigned to the appeal.

We note that our analysis was performed at a high level—considering only the overall decision type of appeals. Potentially, some of the variability may be attributed to different types of rejections at issue across appeals. However, rejection-type differences would seemingly be less pronounced as per-judge decision counts increase. The average decision count per judge in our data set was 35 (median = 33). We suspect that this rather high count, combined with our per-technology-area assessment, indicates that the variability cannot be accounted for by differences in rejection types at issue. Further, some of the variability may be caused by the other judges on the panel. As we acknowledged above, the other judges on the panel may influence the opinion judge. Another potential predictor of reversal rates is years of experience as a PTAB judge and/or in a broader sense (e.g., in a technology area and/or with patent law). Studies have shown that less experienced examiners, on average, have lower allowance rates. [11] PTAB judges also vary markedly with respect to years of experience and background. [12] Potentially, the less experienced judges (like the less experienced examiners) are also less likely to conclude that claims are allowable. This experience-based correlation may be particularly logical, given that such a conclusion would correspond to agreeing with at least two other professionals at the USPTO—the examiner and the examiner's supervisor. [13]

Conclusion

Uniform decision-making at the PTAB is beneficial for applicants and for the public at large. Consistent decision logic at the PTAB would allow applicants to make informed decisions as to whether to appeal rejections or pursue a different strategy (which may even include abandoning the application to save costs and fees). Further, patents are to be awarded to provide a limited monopoly to encourage innovation to benefit the public. However, the incentive requires predictability in terms of patent prospects. Additionally, statutory patent requirements have been designed for various policy reasons, but achieving the policy objectives requires consistent application of the statutes.

Despite these consistency advantages, our data indicates that the probability that the PTAB will reverse an examiner's rejections is highly variable across opinion judges. More detailed analysis that explores rejection types at issue and/or claim characteristics would be informative as to whether differences in these characteristics explain some or all of the variation. However, due to the relatively high per-judge decision count from our sample, we suspect that these factors would explain only a portion of the reversal rate spread. An analysis that correlates reversal rates to experience may also be of interest, and we suspect that experience may be a strong predictor of reversal rate. If so, training and/or inter-panel communication may be useful to provide greater uniformity in decision-making logic. Regardless of the reason, applicants should be aware that the probability that the PTAB reverses rejections is not a single number but corresponds to a broad distribution.

Endnotes

1. The Leahy-Smith America Invents Act formed the administrative body of the PTAB. *See* 35 U.S.C. § 6.

2. *See* David P. Ruschke, Chief Admin. Patent Judge, PTAB & Scott R. Boalick, Deputy Chief Admin. Patent Judge, PTAB, State of the Board, Presentation at the PTAB Judicial Conference (June 29, 2017), https://www.uspto.gov/sites/default/files/documents/PTAB Judicial Conference June 29 2017.pdf.

3. *See* PATENT TRIAL & APPEAL BD., STANDARD OPERATING PROCEDURE 1 (REVISION 14) (2015), https://www.uspto.gov/sites/default/files/documents/SOP1%20-%20Rev.%2014%202015-05-08.pdf.

4. *See* Shine Tu, *Luck/Unluck of the Draw: An Empirical Study of Examiner Allowance Rates*, 2012 STAN. TECH. L. REV. 10, 29.

5. *Id.*

6. Notably, patent term adjustment (PTA) is rewarded to an applicant when the PTAB overturns an unpatentability finding of at least one claim. *See* 37 C.F.R. § 1.702.

7. Anticipat ®, developed by Trent Ostler, is a research and analytics database for all ex parte appeal decisions at the PTAB.

8. *See* 37 C.F.R. § 41.50(a)(1).

9. Kate Gaudry, *Is There a Tide-Change in the Prospects of Patenting Business Method Innovations?*, IPWATCHDOG (May 25, 2017), http://www.ipwatchdog.com/2017/05/25/prospects-patenting-business-method-innovations/id=83693/.

10. *See* Sameer Vadera & Kate S. Gaudry, *Strategic Predictions: Leveraging Art Unit Allowance Rates to Drive the Selection of Appeal Decision Makers*, 10 LANDSLIDE, no. 3, Jan./Feb. 2018, at 26.

11. *See* Tu, *supra* note 4.

12. Gene Quinn, *PTAB Judges Shockingly Inexperienced Compared to District Court Judges*, IPWATCHDOG (Mar. 6, 2018), http://www.ipwatchdog.com/2018/03/06/ptab-judges-shockingly-inexperienced/id=94438/.

13. The first professional is the examiner, who would have performed the initial detailed examination of the application and who ended up rejected the application's claims (and/or a related version) at least twice. The second professional is the examiner's supervisor, who is required to provide approval before an appeal proceeds to the PTAB. We previously reported that the examiner's supervisor plays a large role in the allowance prospects of an application undergoing an appeal. *See* Vadera & Gaudry, *supra* note 10.

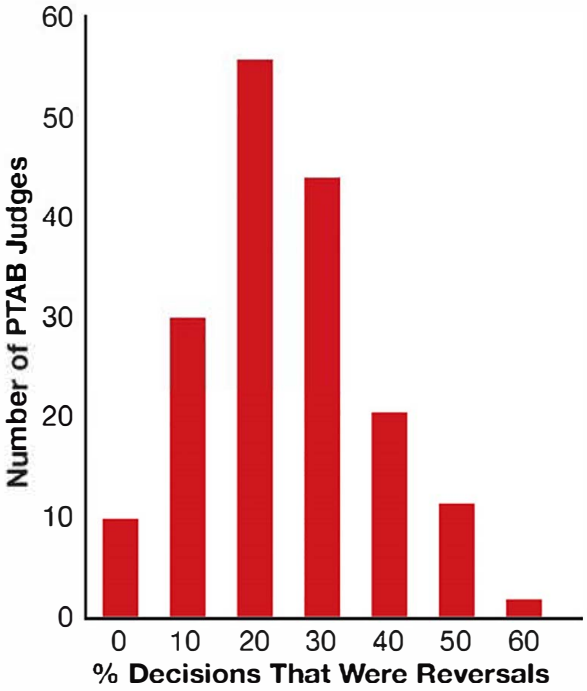


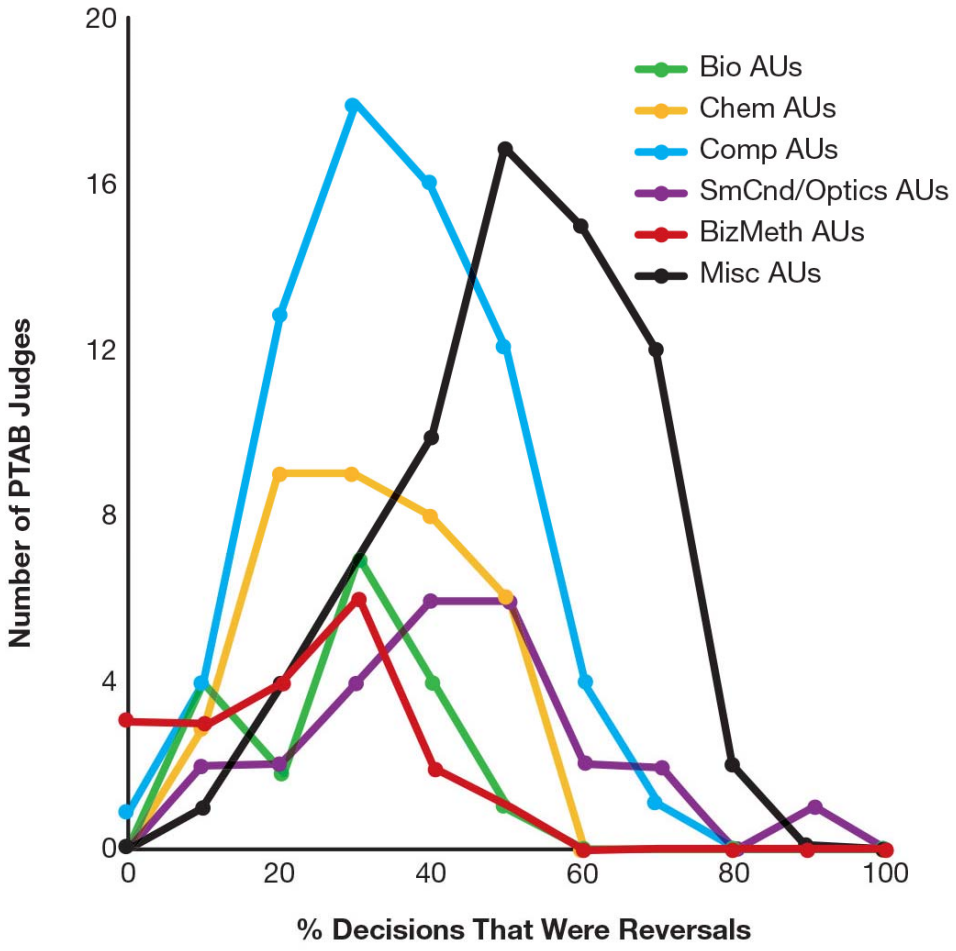
Figure 1: Distribution Across PTAB Judges of Reversal Rates

	1600	1700	2100	2400	2600	2800	Biz Meth	Other 3600	3700
1600	1.00	-0.10	-0.15	-0.16	-0.16	-0.10	-0.09	-0.17	0.15
1700	-0.10	1.00	-0.19	-0.17	-0.18	0.88	-0.13	-0.22	-0.15
2100	-0.15	-0.19	1.00	0.91	0.89	-0.12	0.03	0.07	-0.24
2400	-0.16	-0.17	0.91	1.00	0.92	-0.10	0.03	0.09	-0.23
2600	-0.16	-0.18	0.89	0.92	1.00	-0.10	0.03	0.08	-0.23
2800	-0.10	0.88	-0.12	-0.10	-0.10	1.00	-0.11	-0.19	-0.12
Biz Meth	-0.09	-0.13	0.03	0.03	0.03	-0.11	1.00	0.03	-0.06
Other 3600	-0.17	-0.22	0.07	0.09	0.08	-0.19	0.03	1.00	0.78
3700	0.15	-0.15	-0.24	-0.23	-0.23	-0.12	-0.06	0.78	1.00

Table 1: Correlation Coefficients Between Quantities of Decisions Issued by Individual Judges Across Indicated Technology Areas

Technology Area	Reversal Rate (%)
Bio AUs (TC 1600)	31.0
Chem AUs (TC 2800)	36.9
SmCnd/Optics AUs (TC 2800)	47.2
BizMeth AUs (AUs 3621–29, 3681–96)	30.9
Comp AUs (TC 2100, 2400, 2600)	40.0
Misc AUs (Other TC-3600 AUs and TC 3700)	55.5

Table 2: Average Reversal Rates for Each Technology Area



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