

“Judicial Hyperactivity” in the Federal Circuit: An Empirical Study

By TED L. FIELD*

Introduction

COMMENTATORS HAVE ACCUSED the United States Court of Appeals for the Federal Circuit¹ of “judicial hyperactivity”² in patent cases. William C. Rooklidge and Matthew F. Weil coined the term “judicial hyperactivity” when they observed that “the [Federal Circuit] from time to time appears to lose track of the important distinction between trial and appellate roles and engages in what might be termed ‘judicial hyperactivity’—a form of decision-making at odds

* Associate Professor of Law, South Texas College of Law, Houston, Texas. J.D., *summa cum laude*, John Marshall Law School, 2002; M.S., Northwestern University, 1990; B.A., University of Illinois at Chicago, 1987. The author thanks Kellie Garcia, Heath Grogro, John Holman, Griffin McDonald, Allan Niemerg, and Sean Serraguard for their research assistance. The author also thanks Joshua Ellery and Michelle Martin for their advice on statistical analysis. Finally, the author thanks colleagues who attended a presentation of this Article at South Texas College of Law for their helpful suggestions. The author welcomes comments via e-mail at tfield@stcl.edu.

1. Congress created the U.S. Court of Appeals for the Federal Circuit in 1982 when it enacted the Federal Court Improvements Act of 1982 (“FCIA”). Pub. L. No. 97-164, 96 Stat. 25, 25 (1982) (“An Act To establish a United States Court of Appeals for the Federal Circuit . . . and for other purposes.”). The FCIA gave the Federal Circuit exclusive jurisdiction over appeals of patent decisions of the district courts. *Id.* at 37 (codified at 28 U.S.C. § 1295(a)(1) (2006)). The Federal Circuit also hears appeals from the Board of Patent Appeals and Interferences of the U.S. Patent and Trademark Office. *Id.* at 38 (codified at 28 U.S.C. § 1295(a)(4)(A)). Moreover, the FCIA granted the Federal Circuit with jurisdiction in other areas of law. *Id.* at 37–39 (codified at 28 U.S.C. § 1295); see Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 4 (1989) (“[The FCIA] supplemented [the Federal Circuit’s] jurisdiction with adjudicatory authority in such diverse areas as trademark, tariff and customs law, technology transfer regulations, and government contract and labor disputes.” (footnotes omitted)); accord Charles W. Adams, *The Court of Appeals for the Federal Circuit: More Than a National Patent Court*, 49 MO. L. REV. 43, 65–75 (1984) (describing the Federal Circuit’s jurisdiction); Joseph R. Re, *Brief Overview of the Jurisdiction of the U.S. Court of Appeals for the Federal Circuit Under § 1295(a)(1)*, 11 FED. CIR. B.J. 651 (2002) (describing the Federal Circuit’s jurisdiction).

2. William C. Rooklidge & Matthew F. Weil, *Judicial Hyperactivity: The Federal Circuit’s Discomfort with Its Appellate Role*, 15 BERKELEY TECH. L.J. 725, 726 (2000).

with traditional notions of appellate review.”³ They argue that the Federal Circuit engages in judicial hyperactivity⁴ in patent cases by improperly acting as an advocate⁵ and as a fact-finder.⁶ Such judicial hyperactivity “dramatically reduces certainty and predictability in patent appeals,”⁷ and litigants perceive the practice as unfair.⁸

Other commentators have criticized the Federal Circuit for engaging in judicial hyperactivity because of the court’s high reversal rate for claim construction decisions in patent cases.⁹ Indeed, a number of empirical studies indicate that the Federal Circuit’s reversal rate for claim construction decisions is high—ranging from 33% to as high as 44%.¹⁰ The court decided long ago to review claim construction decisions with no deference to the district court’s decision or reasoning.¹¹ Commentators have argued that the reversal rate is so high because of this lack of deference.¹² Thus, they claim that the Federal Circuit is guilty of judicial hyperactivity by applying a *de novo* standard of review to this issue and reversing claim construction decisions

3. *Id.*

4. See *infra* Part I.A for a discussion of Rooklidge and Weil’s charges that the Federal Circuit engages in judicial hyperactivity.

5. Rooklidge & Weil, *supra* note 2, at 735–39.

6. *Id.* at 739–48.

7. *Id.* at 751.

8. *Id.* at 745.

9. See, e.g., Arti K. Rai, *Specialized Trial Courts: Concentrating Expertise on Fact*, 17 BERKELEY TECH. L.J. 877, 883 (2002) (“Ignoring conventional allocation-of-power principles that give trial courts primary authority over factual questions, the Federal Circuit has asserted power over fact. In the context of claim construction, it has done so simply by declaring claim construction to be a pure question of law subject to *de novo* review.”); Rooklidge & Weil, *supra* note 2, at 748 (“[B]y confirming that claim construction is an issue of law for the court to decide, . . . *Markman* . . . plainly hastened the Federal Circuit’s move toward greater involvement as an appellate tribunal in the sorts of *de novo* review that have tempted the court to take on the role of advocate.”). See also *infra* notes 57–59 and accompanying text for a definition of claim construction.

10. See *infra* Table 1.

11. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

12. See Christian A. Chu, *Empirical Analysis of the Federal Circuit’s Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075, 1113 (2001) (linking the Federal Circuit’s high reversal rate with the *de novo* standard of review for claim construction decisions); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 9 (2000) (“[D]e novo review at the Federal Circuit level leads to dilatory certainty in claim meaning. . . . [And] it is difficult to understand why, in the context of claim interpretation, *de novo* review is needed to promote uniformity and certainty.”); Jeffrey Peabody, *Under Construction: Towards a More Deferential Standard of Review in Claim Construction Cases*, 17 FED. CIR. B.J. 505, 520 (2008) (“Adopting a *clearly erroneous* standard would alleviate many . . . issues without having to sacrifice uniformity and consistency in claim construction interpretation.”).

R

R

R

at such a high rate.¹³ Indeed, the empirical studies revealing the Federal Circuit's high reversal rate in claim construction decisions supports this notion.

A number of researchers have done empirical studies of the Federal Circuit's reversal rates in claim construction decisions.¹⁴ But this author is unaware of any previous empirical research that examines the Federal Circuit's reversal rates and those of other circuits to help determine whether the Federal Circuit engages in judicial hyperactivity, particularly in patent cases. This Article presents such a study. The goal of this study was to determine whether the Federal Circuit's reversal rate is significantly greater than that of other circuits of the United States Court of Appeals. If the Federal Circuit's reversal rates are significantly greater than those of other circuits, then this fact would tend to demonstrate that the Federal Circuit is a more judicially hyperactive court than other circuits. And if the Federal Circuit's reversal rates in patent cases are significantly greater than those of other circuits, then this fact would tend to demonstrate that the Federal Circuit is judicially hyperactive in patent cases. The results of this study tend to show that the Federal Circuit's reversal rates are indeed greater than those of the other circuits studied—both for patent cases and non-patent cases combined, as well as patent cases individually—thus supporting the hypothesis that the Federal Circuit in patent cases is more judicially hyperactive than other circuits.

This study had two parts. The first part focused on contrasting overall reversal rates and reversal rates for particular standards of review between the Federal Circuit and the several representative re-

13. See Rai, *supra* note 9, at 883 (“In the context of claim construction, . . . [the Federal Circuit has asserted power over fact] by simply declaring claim constructions to be a pure question of law subject to the de novo review.”); Rooklidge & Weil, *supra* note 2, at 748 (“In the first year or so after the *Markham* decision, it appeared that the Federal Circuit was reversing and remanding to the lower courts over a third of the claim constructions it reviewed [de novo].”); John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 209–10 (1999) (“Seeking to expand its ability to regulate patent infringement disputes, the Federal Circuit sought an interpretive strategy that would provide it with unrestrained powers of review.”).

14. See, e.g., Gretchen Ann Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time Is Ripe for a Consistent Claim Construction Methodology*, 8 J. INTELL. PROP. L. 175 (2001); Chu, *supra* note 12; Kimberly Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1 (2001) [hereinafter Moore, *District Court Judges*]; Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231 (2005) [hereinafter Moore, *Markman Eight Years Later*]; Andrew T. Zidel, Comment, *Patent Claim Construction in the Trial Courts: A Study Showing the Need for Clear Guidance from the Federal Circuit*, 33 SETON HALL L. REV. 711 (2003).

R

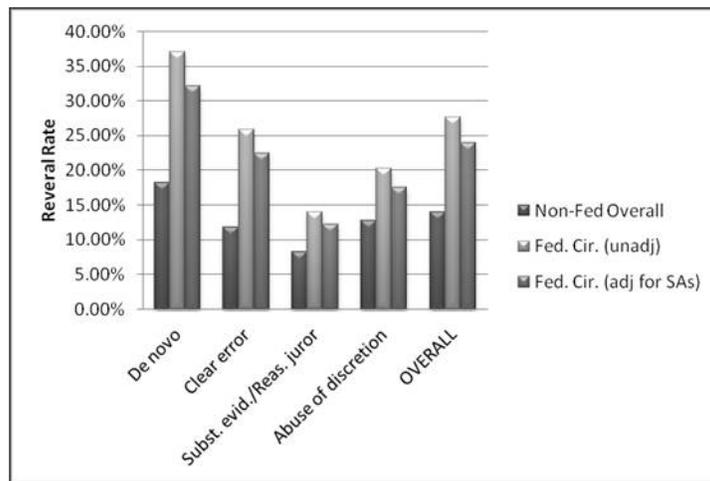
R

R

gional circuits, as well as looking at the Federal Circuit's reversal rates in patent versus non-patent cases.¹⁵ The second part focused on contrasting reversal rates of the Federal Circuit with reversal rates of the representative regional circuits, this time controlling for several examples of procedural postures.¹⁶ The results of the first part of the study tend to support the hypothesis that the Federal Circuit engages in judicial hyperactivity, particularly in patent cases.¹⁷

Figure 1 below summarizes some of these results.

Figure 1: Contrast of Reversal Rates of Federal Circuits with Reversal Rates of Sample Regional Circuits



As Figure 1 above shows, the overall reversal rate of the Federal Circuit in all cases was statistically significantly greater than the overall reversal rates of the representative regional circuits treated as an aggregate.¹⁸ Additionally, when drilling down to the level of particular standards of review, unadjusted reversal rates of the Federal Circuit for all standards of review were statistically significantly greater than the corresponding reversal rates of the representative regional cir-

15. See *infra* Part II.A for a detailed description of the methodology used in this part of the study.

16. See *infra* Part II.B for a detailed description of the methodology used in this part of the study.

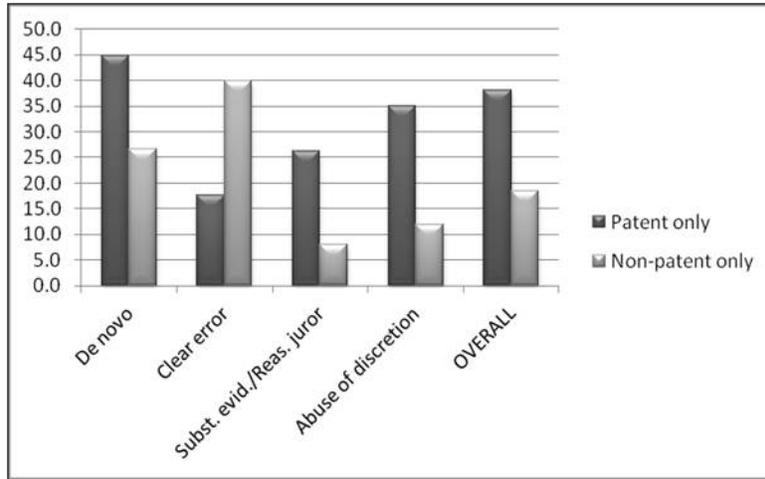
17. See *infra* Part III.A for a detailed description of the results of this part of the study.

18. See *infra* Part III.A.3.a for a detailed description of the results of this part of the study.

cuits. Moreover, reversal rates adjusted for summary affirmances¹⁹ of the Federal Circuit were also statistically significantly greater than the corresponding reversal rates of the representative regional circuits treated as an aggregate for all but one standard of review. These results tend to confirm empirically that the Federal Circuit is more judicially hyperactive than other circuits.

Moreover, as Figure 2 below shows, the Federal Circuit’s reversal rates in patent cases were statistically significantly greater than in non-patent cases, with one exception.²⁰

Figure 2: Contrast of Federal Circuit’s Reversal Rates in Patent with Non-Patent Cases



These results also show that the Federal Circuit is more judicially hyperactive in patent cases than in non-patent cases.

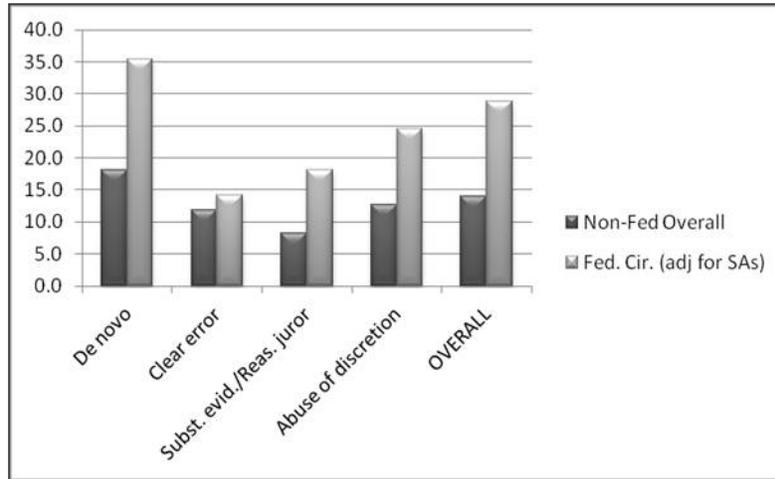
Moreover, as Figure 3 and Figure 4 below show, the Federal Circuit’s reversal rates in patent cases were significantly greater than the

19. A summary affirmation is a procedural device that the Federal Circuit uses in certain cases in which it affirms the lower court’s decision without any opinion or explanation. Beth Zeitlin Shaw, Note, *Please Ignore This Case: An Empirical Study of Nonprecedential Opinions in the Federal Circuit*, 12 GEO. MASON L. REV. 1013, 1015 (2004); see also Christopher A. Cotropia, *Nonobviousness and the Federal Circuit: An Empirical Analysis of Recent Case Law*, 82 NOTRE DAME L. REV. 911, 925 n.71 (2007) (citing Shaw, *supra*, at 1015); Moore, Markman *Eight Years Later*, *supra* note 14, at 234 (“[Summary affirmation] is an affirmation of the district court without opinion.”). See *infra* Part III.A.2 for a detailed discussion of summary affirmances and the need to adjust the data for summary affirmances.

20. See *infra* Part III.A.3.b for a detailed description of the results of this part of the study.

regional circuits' reversal rates, but the Federal Circuit's reversal rates in non-patent cases were not significantly greater (with one exception) than the regional circuits' reversal rates.²¹

Figure 3: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Patent Cases



These results indicate that in patent cases, the Federal Circuit is more judicially hyperactive than the regional circuits, but in non-patent cases, the Federal Circuit does not exhibit more judicial hyperactivity than the regional circuits. Therefore, the results of the first part of this study overall demonstrate that the Federal Circuit is more judicially hyperactive in patent cases than in non-patent cases and with respect to the representative regional circuits.

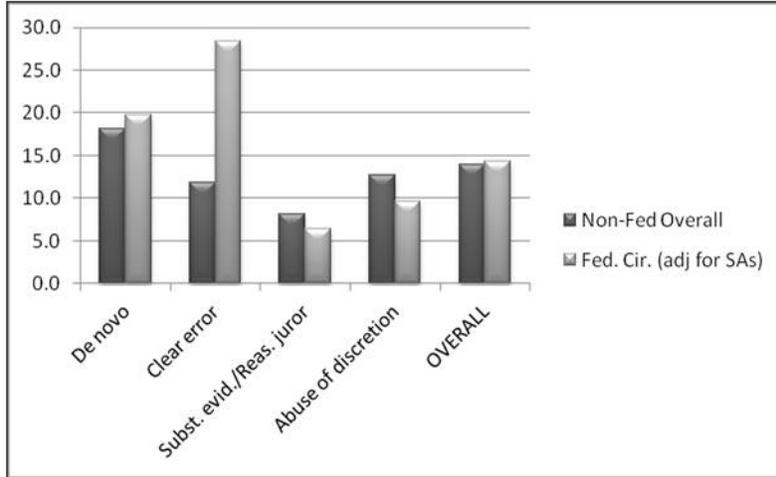
The second part of the study focused on contrasting reversal rates of the Federal Circuit with reversal rates of the representative regional circuits, this time controlling for several examples of procedural postures.²² This part of the study examined 395 summary judgment cases from 2005 and 321 judgments as a matter of law (“JMOL”) cases from 2007.

The results of this second part of the study also support the hypothesis that the Federal Circuit's reversal rate is higher than that of

21. See *infra* Part III.A.3.c for a detailed description of the results of this part of the study.

22. See *infra* Part II.B for a detailed description of the methodology used in this part of the study.

Figure 4: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Non-Patent Cases



the regional circuits.²³ Indeed, for all three examples of procedural postures studied—summary judgment, JMOL, and preliminary injunction—the Federal Circuit’s reversal rate was statistically significantly greater than that of the representative regional circuits taken as an aggregate. These results empirically confirm that the Federal Circuit has engaged in a greater degree of judicial hyperactivity than the representative regional circuits studied.

This Article describes this empirical study in detail. Part I begins by discussing how commentators and others have charged the Federal Circuit with engaging in judicial hyperactivity. Part II describes the methodology used in carrying out the empirical study. Part III details the results of the study. Finally, Part IV discusses possible reasons for these results.

I. Accusations that the Federal Circuit Has Engaged in Judicial Hyperactivity

This Part describes how a number of commentators have criticized the Federal Circuit for engaging in judicial hyperactivity. First, Part I.A discusses William C. Rooklidge and Matthew F. Weil’s argument that the Federal Circuit engages in judicial hyperactivity by im-

23. See *infra* Part III.B for a detailed description of the results of this second part of the study.

properly acting as an advocate and as a fact finder. Second, Part I.B explains how commentators have accused the Federal Circuit of engaging in judicial hyperactivity because of its high reversal rate in claim construction decisions.

A. Rooklidge and Weil: The Federal Circuit as Advocate and Fact Finder

In an essay from 2000, two practitioners, William C. Rooklidge and Matthew F. Weil, persuasively argued that the Federal Circuit engages in what they call “judicial hyperactivity.”²⁴ According to Rooklidge and Weil, judicial hyperactivity is where an appellate court steps out of its proper role as an appellate court and instead makes decisions that a lower court should properly make.²⁵ They contrast judicial hyperactivity with the traditional concept of judicial activism, which they say “refers to a tribunal going beyond the substantive statutory or common law to reach ideologically-motivated outcomes.”²⁶ Rooklidge and Weil note that judicial hyperactivity is unlike traditional judicial activism because traditional judicial activism normally “is drenched in political overtones.”²⁷ Although they do not argue that the Federal Circuit has engaged in ideologically or politically motivated judicial activism, the authors point to several ways in which the Federal Circuit has engaged in judicial hyperactivity.²⁸ Rooklidge and Weil explain that:

Almost since its inception, the Federal Circuit has been dogged with criticism for straying from the path carefully delineated for appellate tribunals. Disappointed litigants and commentators alike have criticized the court for fact-finding and other forms of hyperactive judging. Increasingly, the bar is expressing concern over the court’s decision-making procedures and its apparent willingness to take over the roles of patent examiner, advocate and trier of fact.²⁹

In other words, Rooklidge and Weil accuse the Federal Circuit of engaging in judicial hyperactivity by acting as both an advocate³⁰ and a fact-finder.³¹

24. Rooklidge & Weil, *supra* note 2, at 725–52.

25. *Id.* at 726–27.

26. *Id.* at 726.

27. *Id.* As an example of traditional judicial activism, Rooklidge and Weil point to the time when the conservative majority of the U.S. Supreme Court struck down “liberal New Deal legislation in the 1930s.” *Id.*

28. *See id.* at 735–48 (explaining instances in which the Federal Circuit has engaged in advocacy and fact-finding).

29. *Id.* at 729–30 (footnotes omitted).

30. *Id.* at 735–39.

31. *Id.* at 739–48.

1. The Federal Circuit as an Advocate

Rooklidge and Weil argue that the Federal Circuit has engaged in judicial hyperactivity by improperly acting as an advocate in two ways: (1) ignoring the general rule that appellate courts should not normally consider arguments the parties raise for the first time on appeal; and (2) deciding issues that the parties failed to properly preserve in the district court.³² They cite as an example a case involving a claim limitation seemingly written in means-plus-function format.³³ In that case, the district court and both parties all agreed that the limitation was in that format.³⁴ However, the Federal Circuit *sua sponte* reversed the district court's grant of summary judgment on the grounds that the district court erred in construing the limitation as a means-plus-function limitation.³⁵ Rooklidge and Weil argue that the Federal Circuit acted as an advocate by "revers[ing] the district court on an issue that no one raised on appeal."³⁶ The Federal Circuit based its decision

32. *Id.* at 735–36. Rooklidge and Weil quote the Federal Circuit's articulation of the reasons for the rule that appellate courts should not consider arguments raised for the first time on appeal:

A party's argument should not be a moving target. The argument at the trial and appellate level should be consistent, thereby ensuring a clear presentation of the issue to be resolved, an adequate opportunity for response and evidentiary development by the opposing party, and a record reviewable by the appellate court that is properly crystallized around and responsive to the asserted argument.

Id. at 735 (quoting *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1363 (Fed. Cir. 1999)). Similarly, Rooklidge and Weil quote the Federal Circuit's articulation of the reasons for the rule that appellate courts should normally not consider arguments that the parties have failed to preserve in the district court: "Application of this rule 'frees trial courts to focus on the factual and legal issues the parties identify as being in dispute, without having to worry that a misstep on an issue not disputed or objected to by the parties will result in a reversal.'" *Id.* at 735–36 (quoting *Seal-Flex, Inc. v. Athletic Track & Court Constr.*, 172 F.3d 836, 852 (Fed. Cir. 1999) (Bryson & Newman, JJ., concurring)).

33. *Id.* at 736–37 (citing *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294 (Fed. Cir. 1999)). A means-plus-function limitation is a claim limitation—authorized under 35 U.S.C. § 112, para. 6 (2006)—that recites a function performed by an element of the invention rather than the structure of the element of the invention. JANICE M. MUELLER, *PATENT LAW* 87 (3d ed. 2009). Determining whether an accused device infringes a means-plus-function limitation involves different rules than those applicable for an ordinary structural limitation. *See id.* at 88–90 (explaining the rule applicable to means-plus-function limitations). Thus, a court should decide whether a limitation is in means-plus-function format as a threshold matter.

34. *See Rodime*, 174 F.3d at 1300–03 (narrating the procedural history of the case); *see also* Rooklidge & Weil, *supra* note 2, at 736 ("[In *Rodime*,] neither the patentee nor the accused infringer argued to the Federal Circuit that the subject limitation was anything other than a means plus function limitation.>").

35. *Rodime*, 174 F.3d at 1303.

36. Rooklidge & Weil, *supra* note 2, at 736.

R

R

on “its responsibility to interpret the claims as a matter of law.”³⁷ But Rooklidge and Weil indicate that in similar cases, the Federal Circuit declined to construe claims sua sponte whose interpretations the parties did not dispute.³⁸ They conclude that this sort of judicial hyperactivity produces uncertainty among practitioners: “Now the bar is left to wonder why and when the court will consider arguments raised for the first time on appeal and arguments not made by either party but concocted by the court itself.”³⁹

2. The Federal Circuit as a Fact-Finder

Rooklidge and Weil also argue that the Federal Circuit has overstepped its proper appellate role and engaged in judicial hyperactivity by acting as a fact-finder.⁴⁰ They point out the potential problems with this type of judicial hyperactivity:

As an appellate court, the Federal Circuit’s role is not to hear evidence de novo. Fairness to the litigants weighs against reconsideration of the facts at the appellate level. Appellate fact-finding would undermine the lower tribunal’s legitimacy, increase the number of appeals by encouraging litigants to retry cases at the appellate level, and needlessly reallocate judicial authority.⁴¹

Two ways in which Rooklidge and Weil identify that the Federal Circuit has acted as a fact-finder are (1) by finding facts instead of remanding after reversing a district court’s judgment; and (2) after reversing a grant of summary judgment in favor of one party, by granting summary judgment in favor of the other party, even in the absence of a cross-motion for summary judgment.⁴²

With respect to fact-finding instead of remanding, Rooklidge and Weil note that the Federal Circuit justifies this practice by reasoning

37. *Rodime*, 174 F.3d at 1302.

38. Rooklidge & Weil, *supra* note 2, at 738 (“In another pre-*Rodime* opinion, this one *per curiam*, the court noted that ‘where, as here, the parties agree to a particular construction of the claims which is adopted by the district court, and neither party disputes that construction on appeal, this court declines to raise an issue sua sponte which the parties have not presented on appeal.’” (quoting *Seal-Flex, Inc. v. Athletic Track & Court Constr.*, 172 F.3d 836, 842 (Fed. Cir. 1999) (per curiam))); *id.* (“[I]n a similar case that *post*-dated *Rodime*, the court noted its concern with the claim construction but stated that ‘where, as here, the parties agree to a claim construction that is adopted by the district court, and neither party disputes that construction on appeal, we decline to raise an issue sua sponte that the parties have not presented.’” (quoting *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1348 n.2 (Fed. Cir. 1999))).

39. *Id.* at 738–39.

40. *Id.* at 739–48.

41. *Id.* at 739 (footnotes omitted).

42. *Id.* at 740, 743.

that “the court could only make one finding of fact or decide the fact in only one way.”⁴³ They claim that the Federal Circuit sometimes finds facts instead of remands, even in cases where “the evidence is disputed.”⁴⁴ They further caution that even in cases where the facts seem simple and easy to resolve, such appellate fact finding is inappropriate because a fact-finder could nonetheless decide such facts in more than one way.⁴⁵

With respect to granting summary judgment to one party after reversing a grant of summary judgment in favor of the other party even in the absence of cross-motions for summary judgment, Rooklidge and Weil gave an example of a case where the Federal Circuit reviewed a district court’s grant of summary judgment of literal infringement in favor of the patentee.⁴⁶ The Federal Circuit held that there was no literal infringement and then went on to consider infringement under the doctrine of equivalents, even though the district court had not reached this issue.⁴⁷ According to the court, the record evidence did not support infringement under the doctrine of equivalents as a matter of law.⁴⁸ But instead of merely reversing the grant of summary judgment in favor of the patentee, the Federal Circuit ordered the district court to enter summary judgment of noninfringement in favor of the accused infringer⁴⁹—even though “the accused infringer had never even moved for summary judgment of

43. *Id.* at 742 (quoting *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 886 n.4 (Fed. Cir. 1988)) (internal quotation marks omitted).

44. *Id.* at 741–42 (citing *SmithKline*, 859 F.2d at 886 n.4).

45. *Id.* at 742.

46. *Id.* at 743 (citing *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303 (Fed. Cir. 1998)).

47. *Chiuminatta*, 145 F.3d at 1310–11; *see also* Rooklidge & Weil, *supra* note 2, at 743 (citing *Chiuminatta*, 145 F.3d at 1310–11 (“The Federal Circuit . . . disagree[d] with the district court on literal infringement and was willing to consider the doctrine of equivalents even though the district court had not reached it . . .”). Literal infringement occurs “where the accused subject matter falls precisely within the boundaries of the claim.” MUELLER, *supra* note 33, at 349. Even where an accused invention does not literally infringe a patent claim, infringement under the doctrine of equivalents may nonetheless exist. *Id.* at 351. The doctrine of equivalents allows “a patent [to] protect[] its holder against efforts of copyists to evade liability for infringement by making only insubstantial changes to a patented invention.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 727 (2002).

48. *Chiuminatta*, 145 F.3d at 1311; *see also* Rooklidge & Weil, *supra* note 2, at 743–44 (“[T]he [*Chiuminatta*] court did not agree that the evidence on summary judgment showed infringement under the doctrine of equivalents.”).

49. *Chiuminatta*, 145 F.3d at 1313.

R

R

R

noninfringement.”⁵⁰ Rooklidge and Weil warn that parties will perceive this practice “as at least unfair and possibly as a denial of due process.”⁵¹ They also caution that this practice “will spur disappointed nonmovants to appeal, seeking the grant of a summary judgment for which they never asked.”⁵² Finally, they predict that “[a]s a result, appeals will increase while confidence in the court decreases.”⁵³

Ultimately, Rooklidge and Weil claim that this judicial hyperactivity:

[D]ramatically reduces certainty and predictability in patent appeals. This in turn will cause the number of appeals to continue to increase as disappointed litigants are encouraged to roll the dice in hope that the Federal Circuit will . . . think up some new arguments that had not occurred to counsel, or find facts not found by the lower tribunal.⁵⁴

They conclude that “the Federal Circuit, like any other appellate court, should strive to confine its decision-making procedures to those traditionally associated with an appellate court, and leave . . . innovative advocacy and fact-finding to others.”⁵⁵

B. Claim Construction

In particular, commentators have accused the Federal Circuit of engaging in judicial hyperactivity because of the high reversal rate in its decisions involving claim construction.⁵⁶ Claim construction is the

50. Rooklidge & Weil, *supra* note 2, at 744. Rooklidge and Weil note that the Federal Circuit supported its sua sponte grant of summary judgment with a Ninth Circuit case. *Id.* But they argue the Federal Circuit misapplied this authority and “grossly mischaracterized Ninth Circuit law” in two ways. *Id.* First, this case did not hold that an appellate court may sua sponte grant summary judgment because the Ninth Circuit was reviewing a trial court decision, not an appellate court ruling. *Id.* Second, the Ninth Circuit requires the nonmoving party, against which the court might sua sponte grant summary judgment, to be “given reasonable notice that the sufficiency of his or her claim will be in issue,” and only when such notice is given may the court sua sponte grant summary judgment. *Id.* (quoting *O’Keefe v. Van Boening*, 82 F.3d 322, 324 (9th Cir. 1996)) (internal quotation marks omitted). Rooklidge and Weil claim that the Federal Circuit exceeded its authority because, as an appellate court, it is not in position to give the party such notice. *Id.* at 744–45.

51. *Id.* at 745.

52. *Id.*

53. *Id.*

54. *Id.* at 751–52 (footnotes omitted).

55. *Id.* at 752.

56. See, e.g., Bender, *supra* note 14, at 207–08 (“[O]n appeal, the Federal Circuit changes the claim construction in approximately 40% of the cases. Obviously, this situation offers no certainty or predictability.” (footnote omitted)); Moore, *District Court Judges*, *supra* note 14, at 27 (“The high reversal rate on claim construction is problematic. It creates uncertainty in patent cases and in patent claim scope analysis until the Federal Circuit review is complete.”).

R

R

R

necessary first step in any determination of patent infringement.⁵⁷ When construing patent claims,⁵⁸ a judge “interpret[s] the specific terms or phrases used by the patentee to define the technology covered by the patent.”⁵⁹ Commentators have accused the Federal Circuit of overstepping its proper appellate role by reviewing claim construction decisions de novo instead of giving deference to the claim construction decisions of the district courts.⁶⁰ District court judges have also criticized the Federal Circuit’s high reversal rate on claim construction decisions.⁶¹ Even certain judges of the Federal Circuit themselves have similarly criticized the court’s application of the de novo standard to claim construction decisions.⁶²

57. *E.g.*, *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc) (“An infringement analysis involves two steps. First the court determines the scope and meaning of the patent claims asserted, and then the properly construed claims are compared to the allegedly infringing device.” (citations omitted)).

58. A patent claim is “arguably the most important part of a patent. [It] is a precision-drafted, single-sentence definition of the patent owner’s right to exclude others.” MUELLER, *supra* note 33, at 65. The Patent Act requires that the specification of every patent must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112 (2006).

59. David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 225 (2008).

60. *See supra* notes 9, 12–13; *see, e.g.*, Thomas Chen, Note, *Patent Claim Construction: An Appeal for Chevron Deference*, 94 VA. L. REV. 1165, 1180 (2008) (“[A]ppellate review of claim construction would greatly benefit from a more deferential approach that simply assesses whether the district court derived a reasonable claim interpretation, in place of the currently inefficient pursuit of a single best answer.”).

61. *See, e.g.*, Moore, *District Court Judges, supra* note 14, at 11 (“[The Federal Circuit has] reversed everything I’ve ever done, so I expect fully they’ll reverse this, too.” (quoting O.I. Corp. v. Tekmar Co., No. 95-CV-113 (S.D. Tex. June 17, 1996) (statement of Samuel B. Kent, J.)); Panel Discussion, *High Technology Law in the Twenty-First Century*, 21 SUFFOLK TRANSNAT’L L. REV. 13, 19 (1997) (statement of William G. Young, J.) (“I have had nine of my cases appealed to the Federal Circuit. I have been affirmed in one. I have been affirmed in part in one. And I have been reversed in seven.” (footnote omitted)).

62. *See, e.g.*, *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039, 1040 (Fed. Cir. 2006) (Michel, C.J., dissenting) (“Rehearing this case en banc would have enabled us to reconsider [the] rule of de novo review for claim construction in light of our eight years of experience with its application. I have come to believe that reconsideration is appropriate and revision may be advisable.”); *id.* at 1044 (Rader, J., dissenting) (“I urge this court to accord deference to the factual components of the lower court’s claim construction.”); *id.* at 1046 (Moore, J., dissenting) (“I believe this court should have taken this case en banc to reconsider its position on deference to district court claim construction”); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1330 (Fed. Cir. 2005) (en banc) (Mayer, J., dissenting) (“Now more than ever I am convinced of the futility, indeed the absurdity, of this court’s persistence in adhering to the falsehood that claim construction is a matter of law devoid of any factual component.”); *Cybor Corp.*, 138 F.3d at 1478 (Rader, J., dissenting in part and concurring in part) (“By according some deference where appropriate, this court can restore the trial court’s prominence in the claim interpretation function and bring again more certainty at an earlier stage of the judicial process.”); *id.* at 1480 (Newman, J., addi-

R

R

Although the Supreme Court has characterized claim construction as a “mongrel practice” combining both issues of law and fact,⁶³ in the en banc decision of *Cybor Corp. v. FAS Technologies, Inc.*,⁶⁴ the Federal Circuit decided that it would treat claim construction decisions as pure questions of law subject to review without deference to the district court.⁶⁵ Relying on its earlier decision in *Markman v. Westview Instruments, Inc.*,⁶⁶ the court reasoned that claim construction is a pure question of law because it truly involves “construction of [a] written document.”⁶⁷ This construction must be “based upon the patent and prosecution history.”⁶⁸ Although the district court may consider extrinsic evidence in helping it construe the claims, the Federal Circuit reasoned that “the [district] court is *not* crediting certain evidence over other evidence or making factual evidentiary findings.”⁶⁹ Thus, the Federal Circuit held that claim construction is a pure question of law subject to de novo review on appeal.⁷⁰

Since *Markman* and *Cybor Corp.*, several researchers have undertaken empirical studies of the Federal Circuit’s reversal rate in its claim construction decisions.⁷¹ These commentators have found that the reversal rate in such decisions is seemingly quite high. Table 1 below summarizes the results of these previous studies.

tional views) (“The court today . . . rejects the opportunity to give normal appellate deference to the proceedings and findings of trial”); *Markman v. Westview Instruments, Inc.* (*Markman I*), 52 F.3d 967, 1008 (Fed. Cir. 1995) (en banc) (Newman, J., dissenting), *aff’d* 517 U.S. 370 (1996) (“Commentators have remarked on the temptation of appellate courts to redefine questions of fact as questions of law in order to impose the court’s policy viewpoint on the decision.”).

63. *Markman v. Westview Instruments, Inc.* (*Markman II*), 517 U.S. 370, 378, 388 (1996).

64. 138 F.3d 1448.

65. *Id.* at 1456.

66. *Markman I*, 52 F.3d at 981.

67. *Cybor Corp.*, 138 F.3d at 1454 (quoting *Markman I*, 52 F.3d at 981).

68. *Id.* (quoting *Markman I*, 52 F.3d at 981). “The prosecution history . . . consists of the complete record of the proceedings [for a particular patent application] before the [Patent and Trademark Office]” *Phillips*, 415 F.3d at 1317.

69. *Cybor Corp.*, 138 F.3d at 1454 (quoting *Markman I*, 52 F.3d at 981).

70. *Id.* at 1456.

71. See, e.g., Bender, *supra* note 14; Chu, *supra* note 12; Moore, *District Court Judges*, *supra* note 14; Moore, *Markman Eight Years Later*, *supra* note 14; Zidel, *supra* note 14.

Table 1: Claim Construction Reversal Rates from Previous Empirical Studies

Author	Year of Study	Reversal Rate
Chu	2001	44.0% ⁷²
Bender	2001	40.0% ⁷³
Moore	2001	33.0% ⁷⁴
Zidel	2003	41.5% ⁷⁵
Moore	2004	37.5% ⁷⁶

In 2001, in a comprehensive study of claim construction reversal rates, Christian A. Chu “conducted an empirical study that systematically examined [then-]recent Federal Circuit decisions and applied statistical methods to analyze trends in the [Federal Circuit’s] claim construction jurisprudence.”⁷⁷ He studied all patent decisions of the Federal Circuit from January 1, 1998, through April 30, 2000.⁷⁸ In his study, Mr. Chu found that the Federal Circuit modified claim construction in 44% of the cases he examined that expressly involved a review of claim construction.⁷⁹ He concluded that the Federal Circuit’s de novo standard of review of claim construction could explain this high reversal rate.⁸⁰

Also in 2001, Gretchen Ann Bender examined the Federal Circuit’s reversal rate in claim construction decisions.⁸¹ She considered all of the court’s cases in which it reviewed claim construction from the time of the Supreme Court’s decision in *Markman* in 1996.⁸² She found that the Federal Circuit had altered the district court’s claim construction in around 40% of the cases she examined.⁸³ Ms. Bender argued that this high reversal rate was a result of several factors, in-

72. Chu, *supra* note 12, at 1104.

73. Bender, *supra* note 14, at 207.

74. Moore, *District Court Judges*, *supra* note 14, at 11–12.

75. Zidel, *supra* note 14, at 747.

76. Moore, *Markman Eight Years Later*, *supra* note 14, at 239.

77. Chu, *supra* note 12, at 1075.

78. *Id.* at 1092.

79. *Id.* at 1104.

80. *Id.* at 1143.

81. Bender, *supra* note 14, at 202–07.

82. *Id.* at 203.

83. *Id.* at 207.

R

R

R

R

R

R

R

R

R

R

R

R

cluding the inherent ambiguity in claim language and flaws with the Federal Circuit’s claim construction methodology.⁸⁴

Also in 2001, then-Professor Kimberly A. Moore did an empirical study of the Federal Circuit’s reversal rate with respect to claim construction.⁸⁵ Similar to Ms. Bender’s study, in Professor Moore’s study, she examined all cases beginning in 1996, just after the Supreme Court’s decision in *Markman*, through 2000.⁸⁶ But unlike the studies of Mr. Chu and Ms. Bender, Professor Moore’s study included cases that were summarily affirmed without opinion under Federal Circuit Rule 36.⁸⁷ According to Professor Moore, by omitting Rule 36 summary affirmances, Mr. Chu’s and Ms. Bender’s reversal rates were artificially high.⁸⁸ Instead, Professor Moore’s study revealed that the reversal rate in claim construction decisions from 1996 to 2000 was only 33%.⁸⁹ Although this result is substantially lower than the results obtained by Mr. Chu (44%)⁹⁰ and Ms. Bender (40%),⁹¹ a reversal rate of 33% is nonetheless quite high.⁹²

In 2003, Andrew T. Zidel also considered the Federal Circuit’s claim construction reversal rate.⁹³ He examined all Federal Circuit cases in 2001 that expressly involved claim construction.⁹⁴ But like Mr. Chu and Ms. Bender, Mr. Zidel did not include Rule 36 summary affirmances in his study.⁹⁵ Thus, Mr. Zidel’s results were similarly artificially high.⁹⁶ He found that the Federal Circuit reversed the district court’s claim construction in 41.5% of the cases he examined,⁹⁷ which is in line with the results of Mr. Chu’s (44%)⁹⁸ and Ms. Bender’s (40%)⁹⁹ similar studies. Mr. Zidel concluded that this high reversal

84. *Id.* at 209–17.

85. Moore, *District Court Judges*, *supra* note 14, at 2.

86. *Id.* at 8–9.

87. *Id.* at 8; FED. CIR. R. 36. See *infra* Part III.A.2 for a detailed discussion of this rule and summary affirmances.

88. Moore, *Markman Eight Years Later*, *supra* note 14, at 235–36, 235 n.15.

89. Moore, *District Court Judges*, *supra* note 14, at 11–12.

90. Chu, *supra* note 12, at 1104.

91. Bender, *supra* note 14, at 207.

92. See Moore, *District Court Judges*, *supra* note 14, at 16–17 (“As this empirical evidence shows, the 33% reversal rate for claim construction is higher than the reversal rate for other issues.”).

93. Zidel, *supra* note 14, at 744–48.

94. *Id.* at 744.

95. Moore, *Markman Eight Years Later*, *supra* note 14, at 235–36. See *infra* Part III.A.2 for a detailed discussion of Rule 36 and summary affirmances.

96. *Id.* at 236.

97. Zidel, *supra* note 14, at 747.

98. Chu, *supra* note 12, at 1104.

99. Bender, *supra* note 14, at 207.

R

R

R

R

R

R

R

R

R

R

R

rate was a result of a number of specific errors that district courts made in applying the Federal Circuit's articulated claim construction methodology.¹⁰⁰

In 2004, then-Professor Moore did a second empirical study of the Federal Circuit's reversal rates in claim construction decisions.¹⁰¹ In this second study, Professor Moore updated her 2001 study by including cases from 1996 through 2003.¹⁰² As with her 2001 study, she included cases that were summarily affirmed without an opinion under Federal Circuit Rule 36.¹⁰³ According to this study, the Federal Circuit held that the district court incorrectly construed at least one claim term in 37.5% of all cases.¹⁰⁴ In other words, "the reversal rate [was] getting worse not better."¹⁰⁵ Professor Moore reasoned that this high reversal rate, trending upward, could be a result of several things, including (1) the Federal Circuit's de novo standard of review for claim construction decisions; (2) the lack of technical training possessed by district court judges; and (3) the lack of "repeat exposure to claim construction" by district court judges.¹⁰⁶

Regardless of the precise cause, all these empirical studies show that the Federal Circuit's reversal rate in claim construction decisions is quite high. Thus, these studies support the idea that the Federal Circuit has engaged in judicial hyperactivity.

II. Methodology of the Empirical Study

This empirical study involved comparing the reversal rates of the Federal Circuit with corresponding reversal rates of other circuit courts of appeal. The goal of this study was to determine whether the Federal Circuit's reversal rate is significantly greater than that of the other circuits studied, particularly in patent cases. If the Federal Cir-

100. See Zidel, *supra* note 14, at 748–53. The specific errors that Mr. Zidel identified include improperly importing claim limitations from the patent specification into the claims, improperly construing claims without considering how one of ordinary skill in the art would interpret the claim language, relying on inappropriate dictionary definitions, and improperly construing complex means-plus-function limitations. *Id.*

101. Moore, Markman *Eight Years Later*, *supra* note 14, at 239–45.

102. *Id.* at 239.

103. *Id.*

104. *Id.* at 239.

105. *Id.* at 245 (capitalization omitted).

106. *Id.* at 245–46. But an empirical study by Professor David L. Schwartz refutes the notion that the lack of experience that district court judges have at construing claims is responsible for the Federal Circuit's high reversal rate of claim construction decisions. Schwartz, *supra* note 59, at 267 ("[T]he reversal rate may be essentially constant, regardless of the prior claim construction experience of the district court judge.").

R

R

cuit's reversal rate in patent cases is significantly greater than other circuits, then this fact would demonstrate empirically that the Federal Circuit is a more judicially hyperactive court than other circuits.

The study contrasted reversal rates of the Federal Circuit with reversal rates of several representative regional circuit courts of appeal. The regional circuits studied were the Second, Fifth, Seventh, and Ninth Circuits. These circuits were chosen because they are among the largest circuits in terms of caseload,¹⁰⁷ and they include some of the most populous states.¹⁰⁸

This study had two parts. The first part of the study focused on contrasting overall reversal rates and reversal rates for particular standards of review between the Federal Circuit—in all cases, patent cases only, and non-patent cases only—and the several representative regional circuits. The second part of the study focused on contrasting reversal rates of the Federal Circuit with reversal rates of the representative regional circuits, this time controlling for several examples of procedural postures. The remainder of this Part describes the methodology used in the two parts of this empirical study. Part II.A discusses the methodology used in the first part of the study, and Part II.B discusses the methodology used in the second part of the study.

A. Methodology for Examining Overall Reversal Rates and Reversal Rates for Particular Standards of Review

The first part of the study examined differences between the overall reversal rates of the Federal Circuit in patent and non-patent cases and the Second, Fifth, Seventh, and Ninth Circuits, as well as the reversal rates for particular standards of review. This part of the study contrasted reversal rates for discrete issues, rather than on a case-by-case basis.

The first step was gathering the necessary data. The data gathered included 2457 different issues in 2076 different cases.¹⁰⁹ For each of

107. The Ninth, Second, and Fifth Circuits had the first, second, and third most cases pending as of March 31, 2009. See ADMIN. OFFICE OF THE U.S. COURTS, FEDERAL JUDICIAL CASELOAD STATISTICS 24 tbl.B-1 (2009), available at <http://www.uscourts.gov/uscourts/Statistics/FederalJudicialCaseloadStatistics/2009/tables/B01Mar09.pdf> [hereinafter *Table B-1*] (showing pending cases for all U.S. Courts of Appeals).

108. The Second Circuit includes New York; the Fifth Circuit includes Texas; the Seventh Circuit includes Illinois; and the Ninth Circuit includes California. *U.S. Judiciary: The Federal Court System and Decisions*, LIBR. CONG., <http://www.loc.gov/law/help/guide/federal/usjudic.php#appeals> (last visited Mar. 13, 2012).

109. For the regional circuits studied, the cases included in this part of the study are the first 1772 cases of 2010. This time period ran from January 2010 through February 2010. For the Federal Circuit, the cases included are the first 304 cases of 2010. This time

these issues, it was determined whether the court of appeals affirmed, reversed, vacated, or affirmed in part and reversed in part the lower court on that particular issue. Each major issue was examined separately. Where a case discussed multiple “minor” issues, these minor issues were grouped together as one major issue. For example, in a case involving multiple related evidentiary rulings, these rulings were not treated as individual issues reviewed under the abuse of discretion standard; instead, they were grouped together as one issue reviewed under this standard. If the court affirmed or reversed all the rulings, then the issue was recorded as “affirmed” or “reversed,” respectively; if the court affirmed some and reversed some of the rulings, then the issue was recorded as “affirmed in part-reversed in part.”¹¹⁰

Certain types of dispositions were excluded from the data. For example, the database does not include decisions granting or denying motions made to the court of appeals,¹¹¹ resolving petitions to appeal,¹¹² and deciding petitions for writs of mandamus.¹¹³ Also excluded were any issues for which the court did not articulate a standard of review.¹¹⁴

period ran from January 2010 through June 2010. These cases were retrieved using either Westlaw or Lexis.

These time periods limit this study. Even though the total number of regional-circuit cases and issues examined was large, this study would have been improved had it been possible to examine cases of the regional circuits for a greater time period to be sure that the results apply to more than just the relatively short time period studied.

Moreover, the time period for the Federal Circuit cases studied extends farther than the time period for the regional circuits studied. The results would be improved if both time periods matched. This asymmetry was necessary to ensure that an adequate sample size of Federal Circuit cases was obtained. Thus, this study relies on the seemingly reasonable assumption that the Federal Circuit’s reversal rates during the period from March through June 2010 did not change significantly from the period running from January through February 2010.

110. This information was entered into a Microsoft Access database and later transferred to a Microsoft Excel spreadsheet to analyze the data. The database included the following fields: citation, circuit, year, and fields for tracking up to nine discrete issues per case. The fields for tracking the discrete issues included a pair of fields for each issue—(1) standard of review and (2) corresponding disposition. The standard of review fields were relationally linked to a lookup table comprising the different standards of review studied, and the disposition fields were relationally linked to a lookup table comprising possible dispositions.

111. For example, *Young v. Shinseki*, 364 F. App’x 634 (Fed. Cir. 2010) (granting plaintiff’s motion to voluntarily withdraw his appeal), was not included.

112. For example, *Harrison v. Shinseki*, 364 F. App’x 630 (Fed. Cir. 2010) (dismissing appeal of decision from the U.S. Court of Appeals for Veterans’ Claims), was not included.

113. For example, *In re Pfizer, Inc.*, 364 F. App’x 620 (Fed. Cir. 2010) (denying petition for writ of mandamus), was not included.

114. For example, no issue was recorded if a court said that the appellant’s additional arguments were without merit.

Data were tabulated for the reversal rates for each standard of review for each of the circuits studied. The data from the representative regional circuits were combined into “overall non-Federal Circuit” totals to allow for the easy contrast of Federal Circuit reversal rates with the reversal rates from the representative regional circuits taken as a whole. Further, the Federal Circuit data were adjusted for the Federal Circuit’s use of summary affirmances.¹¹⁵ Appendix A contains data tables that show the raw data obtained for this part of the study.

B. Methodology for Contrasting Reversal Rates, Controlling for Several Examples of Procedural Postures

The second part of the study focused on contrasting reversal rates of the Federal Circuit with reversal rates of the representative regional circuits, this time controlling for several examples of procedural postures. The procedural postures examined included grants and denials of (1) summary judgment; (2) JMOL;¹¹⁶ and (3) preliminary injunctions. These procedural postures involve both deferential and non-deferential standards of review,¹¹⁷ which allowed the study to determine whether different procedural postures having both deferential and non-deferential standards of review have any effect on the Federal Circuit’s reversal rate compared to that of other circuits.

First, relevant cases were obtained for the Federal Circuit and each representative regional circuit for each of the procedural pos-

115. See *infra* Part III.A.2 for a discussion of how the data were adjusted to take summary affirmances into account.

116. The study included both pre-verdict motions for JMOL (i.e., directed verdicts) and post-verdict motions for JMOL (i.e., judgments notwithstanding the verdict).

117. Grants of summary judgment motions and grants and denials of motions for judgment as a matter of law are reviewed de novo—i.e., with no deference to the lower court’s judgment. *E.g.*, *Lincoln Nat’l Life Ins. Co. v. Transam. Life Ins. Co.*, 609 F.3d 1364, 1368, 1371 (Fed. Cir. 2010) (reversing district court’s denial of JMOL); *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1365, 1368 (Fed. Cir. 2008) (reversing district court’s grant of JMOL); *Conroy v. Reebok Int’l, Ltd.*, 14 F.3d 1570, 1575, 1578 (Fed. Cir. 1994) (vacating district court’s grant of summary judgment). Denials of summary judgment motions and grants and denials of preliminary injunction motions are reviewed for abuse of discretion—i.e., with great deference to the lower court’s judgment. *E.g.*, *Trading Techs. Int’l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1359 (Fed. Cir. 2010) (affirming district court’s denial of summary judgment); *Celsis In Vitro, Inc. v. CellzDirect, Inc.*, 664 F.3d 922, 925, 932 (Fed. Cir. 2012) (affirming district court’s grant of preliminary injunction); *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1298–99 (Fed. Cir. 2009) (en banc) (affirming district court’s denial of preliminary injunction); *Am. Signature, Inc. v. United States*, 598 F.3d 816, 823, 870 (Fed. Cir. 2010) (reversing Court of International Trade’s denial of preliminary injunction).

tures studied.¹¹⁸ Next, the cases were examined to eliminate false positives.¹¹⁹ After that, the cases were coded. Each case was studied, and it was determined whether the court in that case reversed, vacated, or affirmed in part and reversed in part the district court's decision for the particular procedural posture in question.¹²⁰ Appendix B contains data tables that show the raw data obtained for this part of the study.

C. Methodology for Determining Whether Differences in Reversal Rates Were Statistically Significant

The same methodology was used in each of the two parts of this study to determine whether particular differences in reversal rates were statistically significant. In all instances, the null hypothesis¹²¹ was that the Federal Circuit's reversal rate did not differ from that of the representative regional circuits. The alternative hypothesis¹²² was that the Federal Circuit's reversal rate was greater than that of the representative regional circuits.

To determine whether differences in reversal rates were statistically significant such that the null hypothesis could be rejected, two-

118. Appropriate search terms were entered using the database on Westlaw or Lexis for the circuit in question for the last several years. The study examined 395 summary judgment cases from 2005, 321 JMOL cases from 2007–2009, and 392 preliminary injunction cases from 2005–2009.

119. For example, false positives occurred when searching for JMOL cases using the phrase “judgment as a matter of law” as a search term. Such a search term was necessary to identify JMOL cases, but it generated false positives wherever this term was mentioned in summary judgment cases, as it often was. *See, e.g.*, *United States v. Robinson*, 434 F.3d 357, 361 (5th Cir. 2005) (“Summary judgment is proper ‘if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to *judgment as a matter of law.*’” (emphasis added) (citation omitted)).

120. This information was entered into Microsoft Access databases. If a particular case included decisions on other procedural postures, these decisions were not included in the database. A separate database was used for each procedural posture. Each of the databases for each procedural posture studied included the following fields: case caption, citation, circuit, year, and disposition. The summary judgment database also included fields to track whether the motion was granted or denied at the district court and whether the plaintiff or defendant was the moving party. The JMOL database also included fields to track whether a district court granted or denied the motion and whether the case involved a pre- or post-verdict motion for JMOL.

121. A null hypothesis is a hypothesis that a researcher will accept “unless the statistical evidence is very strong in the other direction.” CHARLES LIVINGSTON & PAUL VOAKES, *WORKING WITH NUMBERS AND STATISTICS* 84 (2005).

122. An “[a]lternative [h]ypothesis is the opposite of the [n]ull [h]ypothesis.” *Id.* If the statistical evidence is sufficiently strong to overcome the null hypothesis, then a researcher will accept the alternative hypothesis as true. *See* D.G. REES, *ESSENTIAL STATISTICS* 141 (4th ed. 2001) (“[I]f we reject the null hypothesis we should accept the alternative hypothesis . . .”).

proportion z -values were calculated.¹²³ These z -values were then converted to p -values using a standard conversion chart¹²⁴ to determine whether these differences in reversal rates were statistically significant to particular confidence levels. In this context, a p -value gives the probability that the difference between reversal rates was merely due to chance and not the result of the operation of the alternative hypothesis¹²⁵—that the Federal Circuit’s reversal rate was greater than that of the representative regional circuits. This study considered differences in reversal rates to be statistically significant for p -values less than 0.1—i.e., where the confidence level that mere chance was not at play was 90% or greater.

III. Results of the Study: The Federal Circuit Engages in Judicial Hyperactivity

The results of this empirical study indicate that the Federal Circuit engages in judicial hyperactivity. First, Part III.A discusses in detail the results of the first part of this study, which examines overall reversal rates and reversal rates for particular standards of review, in both patent and non-patent cases. Second, Part III.B discusses in detail the

123. The following formula for a two-proportion z -test was used to calculate z -values:

$$z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\hat{p}(1-\hat{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

, e.g., DAVID S. MOORE, *THE BASIC PRACTICE OF STATISTICS* 506 (1995), where:

\hat{p}_1 = proportion 1,
 \hat{p}_2 = proportion 2,
 n_1 = sample size 1,
 n_2 = sample size 2, and

$$\hat{p} = \frac{(\hat{p}_1 n_1 + \hat{p}_2 n_2)}{(n_1 + n_2)}.$$

124. *Basic Statistics: Mean, Median, Average, Standard Deviation, Z-Scores, and P-Value*, MICH. CHEM. PROCESS DYNAMICS & CONTROLS OPEN TEXT BOOK, https://controls.engin.umich.edu/wiki/index.php/Basic_statistics:_mean,_median,_average,_standard_deviation,_z-scores,_and_p-value (last visited Jan. 16, 2012) (follow “Media:Group_G_Z-Table.xls” hyperlink). Note that this table actually gives values for $1 - p$. See *id.* But these values were easily converted to p -values by subtracting them from one. For example, if $1 - p = 0.1$, then $p = 1 - 0.1 = 0.9$.

125. For example, for $p = 0.05$, the probability that the difference between reversal rates was merely due to chance is 5%. Thus, for this p -value, the difference is statistically significant, and the confidence level is 95%.

results of the second part of this study, which examines reversal rates controlling for several examples of procedural postures.

A. Results: Overall Reversal Rates and Reversal Rates for Particular Standards of Review

The results of this part of the study support the hypothesis that the Federal Circuit engages in judicial hyperactivity. This Part discusses the results of this first part of the study in detail. First, Part III.A.1 below concludes that the frequency the circuits used each standard of review may shed some, but not much, light on whether the Federal Circuit is more judicially hyperactive than other circuits. Second, Part III.A.2 discusses adjusting data concerning the Federal Circuit's reversal rates for that court's use of summary affirmances. Third and finally, Part III.A.3 examines (1) the differences between the Federal Circuit's reversal rates in all its cases—patent and non-patent—and the regional circuits' reversal rates; (2) the differences between the Federal Circuit's reversal rates in patent cases and its reversal rates in non-patent cases; and (3) the contrast between (a) the differences between the Federal Circuit's reversal rates in patent cases and the regional circuits' reversal rates and (b) the differences between the Federal Circuit's reversal rates in non-patent cases and the regional circuits' reversal rates. These results all support the hypothesis that the Federal Circuit is judicially hyperactive in patent cases.

1. Frequency of Each Standard of Review

As a preliminary matter, it might be possible to conclude that the Federal Circuit is judicially hyperactive relative to the other circuits studied by merely looking at the frequency of each standard of review in each circuit. If the Federal Circuit reviewed a significantly greater proportion of issues under the non-deferential *de novo* standard and a significantly lesser proportion of issues under the more deferential standards, that fact would tend to support a conclusion that the Federal Circuit is more hyperactive than the other circuits.

Table 2, Figure 5, and Figure 6 below show that the frequencies of the standards of review within cases of the Federal Circuit are similar to the overall totals of the representative regional circuits for the deferential clear error, substantial evidence and reasonable juror, and abuse of discretion standards. Indeed, the differences between the fre-

quencies of each of these standards of review between the Federal Circuit and the regional circuits overall are not statistically significant.¹²⁶

Interestingly, though, the difference between the frequency of the non-deferential de novo standard at the Federal Circuit and that of the regional circuits is statistically significant.¹²⁷ This data tends to support that the Federal Circuit reviews a greater percentage of issues using the least deferential standard of review than the regional circuits. Therefore, this result tends to empirically support the hypothesis that the Federal Circuit is more judicially hyperactive than the example regional circuits studied.

Table 2: Frequency of Each Standard of Review by Circuit

Standard of Review	Second Circuit	Fifth Circuit	Seventh Circuit	Ninth Circuit	NON-FED OVERALL	Federal Circuit
De novo	37.8%	42.4%	38.8%	43.0%	41.0%	47.9%
Clear error	7.7%	23.9%	24.0%	11.2%	14.1%	7.5%
Substantial evidence/ Reasonable juror	29.3%	7.8%	13.8%	18.1%	18.7%	15.8%
Abuse of discretion	25.3%	25.9%	23.5%	27.6%	26.2%	28.8%
OVERALL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

2. Adjusting the Federal Circuit's Reversal Rates for Summary Affirmances

To avoid artificially high reversal rates, this study considered the fact that the Federal Circuit often affirms decisions using summary affirmances.¹²⁸ Local Rule 36 of the Federal Circuit gives a panel the power to summarily affirm a decision where “any of [five] conditions exist and an opinion would have no precedential value.”¹²⁹ Thus, a

126. For the clear error standard, even though the frequency for the regional circuits is almost double that of the Federal Circuit, the difference is not statistically significant. For this difference, $z = 0.959$ and $p = 0.1949$.

For the substantial evidence/reasonable juror standard, $z = 0.529$ and $p = 0.2981$. Thus, this difference is also not statistically significant.

For the abuse of discretion standard, $z = 0.550$ and $p = 0.2912$. Thus, this difference is also not statistically significant.

127. For the de novo standard, $z = 1.677$ and $p = 0.0465$. Thus, this difference is statistically significant to a 95.4% confidence level.

128. See *supra* note 19.

129. FED. CIR. R. 36. Federal Circuit Rule 36 reads as follows:

Figure 5: Frequency of Each Standard of Review—Federal Circuit

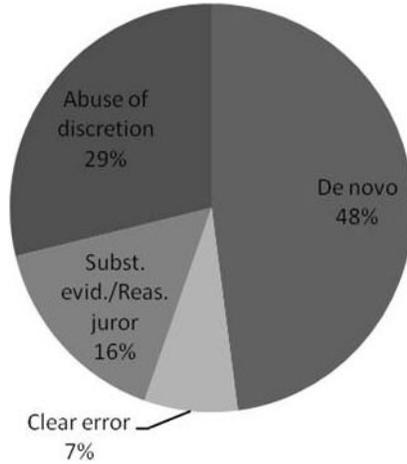
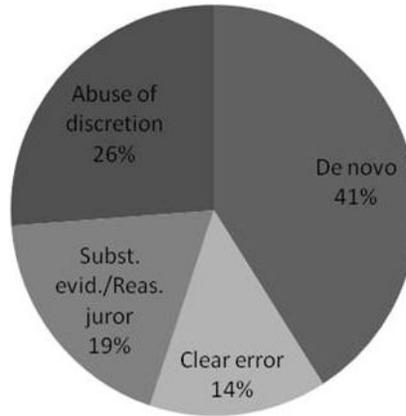


Figure 6: Frequency of Each Standard of Review—Non-Federal Circuits Overall



Federal Circuit panel can issue a Rule 36 summary affirmance “where it is not necessary to explain, even to the loser, why he lost.”¹³⁰

This study took into account the existence of these summary affirmances to avoid an artificially high reversal rate. The number of summary affirmances the Federal Circuit issued during the period of this study was 55 out of 416 total cases—i.e., in 13.2% of all cases.¹³¹ This

The court may enter a judgment of affirmance without opinion, citing this rule, when it determines that any of the following conditions exist and an opinion would have no precedential value:

- (a) the judgment, decision, or order of the trial court appealed from is based on findings that are not clearly erroneous;
- (b) the evidence supporting the jury’s verdict is sufficient;
- (c) the record supports summary judgment, directed verdict, or judgment on the pleadings;
- (d) the decision of an administrative agency warrants affirmance under the standard of review in the statute authorizing the petition for review; or
- (e) a judgment or decision has been entered without an error of law.

Id.

130. The Seventh Annual Judicial Conference of the Court of Appeals for the Federal Circuit, 128 F.R.D. 409, 420 (May 24, 1989) (remarks of Hon. Howard T. Markey, C.J., Court of Appeals for the Federal Circuit).

131. The number of summary affirmances during the period studied was determined by two independent methods, the results of which agreed with each other. The first method involved searching for “FED. CIR. R. 36” in the Westlaw Federal Circuit database (“CTAF”), limited by the dates of the period studied. This method successfully determined the number of summary affirmances because Federal Circuit summary affirmances include the text, “See Fed. Cir. R. 36.” See, e.g., *Brady v. U.S. Postal Serv.*, 367 F. App’x 149, 150

number is certainly significant,¹³² so it was necessary to somehow adjust for these summary affirmances.¹³³

The Federal Circuit was the only one of the circuits studied that uses summary affirmances in any appreciable amount. Although the Fifth Circuit, like the Federal Circuit, has a local rule that allows for the use of summary affirmances,¹³⁴ the Fifth Circuit uses this tool much less often than the Federal Circuit. For example, from July 1, 2010, through June 30, 2010, the Fifth Circuit issued only 15 summary

(2010) (“This CAUSE having been heard and considered, it is ORDERED and ADJUDGED: AFFIRMED. See Fed. Cir. R. 36.”). This method yielded fifty-five summary affirmances in the period studied.

The second method involved searching for all opinions on each day of the period studied on the Federal Circuit’s web site, *Opinions and Orders Search*, U.S. CT. APPEALS FOR FED. CIR., <http://www.ca9.uscourts.gov/opinions-orders/search/report.html> (last visited Jan. 16, 2012). Each nonprecedential opinion was examined to determine whether it was a summary affirmance. This method also revealed fifty-five summary affirmances in the period studied.

132. The Federal Circuit seems to be disposing of cases using a greater percentage of summary affirmances even more today than in the past. See Jason Rantanen, *CAFC: Patent Opinions Down, Rule 36 Affirmances Up*, PATENTLYO (Oct. 27, 2011), <http://www.patentlyo.com/patent/2011/10/cafc-patent-opinions-down-rule-36-affirmances-up.html> (illustrating the Federal Circuit’s disposition of appeals for 2011 and prior years). Indeed, the Federal Circuit issued summary affirmances in 42% of its patent cases in 2011. *Id.* In contrast, the court issued summary affirmances in only 19%, 22%, and 13% in 2010, 2009, and 2008, respectively. *Id.*

133. See Moore, Markman *Eight Years Later*, *supra* note 14, at 235. In commenting on her inclusion of summary affirmances in her claim construction reversal-rate study, Professor Moore explained:

Obviously, eliminating a large group of non-randomly selected cases would affect the results. [Claim construction reversal-rate s]tudies that did not consider the Rule 36 summary affirmances eliminated a large group of affirmances from their dataset. This skewed their results and they report a significantly higher reversal rate than actually exists.

Id.; see *supra* notes 87–92 and accompanying text (contrasting studies of claim construction reversal rates that included summary affirmances with those that disregarded summary affirmances).

134. 5TH CIR. R. 47.6 (“Affirmance Without Opinion”). Fifth Circuit Rule 47.6 reads as follows:

The judgment or order may be affirmed or enforced without opinion when the court determines that an opinion would have no precedential value and that any one or more of the following circumstances exists and is dispositive of a matter submitted for decision: (1) that a judgment of the district court is based on findings of fact that are not clearly erroneous; (2) that the evidence in support of a jury verdict is not insufficient; (3) that the order of an administrative agency is supported by substantial evidence on the record as a whole; (4) in the case of a summary judgment, that no genuine issue of material fact has been properly raised by the appellant; and (5) no reversible error of law appears. In such case, the court may, in its discretion, enter either of the following orders: “AFFIRMED. See 5TH CIR. R. 47.6.” or “ENFORCED. See 5TH CIR. R. 47.6.”

Id.

affirmances out of 3192 total cases¹³⁵—i.e., approximately 0.5% of all cases. And, during the period studied, the Fifth Circuit issued no summary affirmances at all. Thus, it was not necessary to adjust the data for the Fifth Circuit. Moreover, the Second, Seventh, and Ninth Circuits do not use summary affirmances, so it was not necessary to adjust the totals for these circuits, either.

It was necessary to determine the best method for adjusting the Federal Circuit data for summary affirmances. Methods used by other researchers in other empirical studies of reversal rates would not work for this study. In other studies, researchers determined the applicability of a particular summary affirmance to the issue under study by analyzing the appeal briefs submitted to the Federal Circuit.¹³⁶ These researchers were studying reversal rates on discrete substantive patent law issues such as nonobviousness¹³⁷ and claim construction,¹³⁸ and they could readily determine from the appeal briefs whether a particular summary affirmance related to the issue being studied. But this Article's study looks at reversal rates for different standards of review, and for many issues, it would be virtually impossible to determine from the appeal briefs whether the Federal Circuit affirmed based on a particular standard of review without resorting to mere speculation. As a result, examining the appeal briefs for each summary affirmance would not work for this study.

The method that this study used to adjust for summary affirmances in the Federal Circuit was to add affirmances to each standard

135. U.S. COURT OF APPEALS FIFTH CIR., CLERK'S ANNUAL REPORT: JUDICIAL WORKLOAD STATISTICS JULY 2010–JUNE 2011, at 1, 12 (2011), available at <http://www.ca5.uscourts.gov/clerk/docs/arstats.pdf>.

136. See Cotropia, *supra* note 19, at 925 (studying nonobviousness); Moore, *District Court Judges*, *supra* note 14, at 8 n.36 (studying claim construction); Moore, Markman *Eight Years Later*, *supra* note 14, at 239 n.31 (studying claim construction).

137. Cotropia, *supra* note 19, at 925. Nonobviousness is a requirement for obtaining a patent. 35 U.S.C. § 103(a) (2006); see Gregory Mandel, *The Non-Obvious Problem: How the Indeterminate Nonobviousness Standard Produces Excessive Patent Grants*, 42 U.C. DAVIS L. REV. 57, 62 (2008) (“The core requirement for obtaining a patent is that the invention was not obvious at the time it was made.”). Even if an invention is new and useful, it is not patentable unless it is also nonobvious—that is, the invention must be “a significant advance over existing technology.” *Id.* The test to determine whether a particular patent claim is unpatentable or invalid due to obviousness is whether “the differences between the subject matter . . . and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” § 103(a).

138. Moore, *District Court Judges*, *supra* note 14, at 8 n.36; Moore, Markman *Eight Years Later*, *supra* note 14, at 239 n.31.

of review in proportion to the frequency of that standard of review.¹³⁹ For example, the study revealed that the Federal Circuit used the de novo standard of review in 47.9% of its cases.¹⁴⁰ Thus, 47.9% of the 55 summary affirmances (26.3) was added to the total number of de novo affirmances in non-summary-affirmance dispositions (173), for an adjusted total of 199 affirmances under the de novo standard. All the other standards of review were similarly adjusted.

Table 3 below summarizes the results of these adjustments, showing how the reversal rates for each standard of review and the overall reversal rate decreased upon adjustment.

Table 3: Reversal Rates of Federal Circuit—Unadjusted and Adjusted for Summary Affirmances

Standard of Review	Federal Circuit (UNADJUSTED)	Federal Circuit (ADJUSTED for Summary Affirmances)
De novo	37.0%	32.1%
Clear error	25.9%	22.5%
Substantial evidence/ Reasonable juror	14.0%	12.2%
Abuse of discretion	20.2%	17.5%
OVERALL	27.7%	24.0%

This method is certainly not perfect. Indeed, whether adjusting for the overall frequency of each standard of review accurately reflects the frequency of those standards of review as used in summary affirmances is not verifiable. For example, logic dictates that the court likely uses summary affirmances in cases in which the standard of review is deferential, thus making for straightforward summary affirmances. Therefore, the frequency of standards of review in summary affirmances very well may skew towards the more deferential standards of review such as abuse of discretion or substantial evidence. But be-

139. See *supra* Part III.A.1 for a discussion of the frequency of the different standards of review in the cases studied.

140. See *supra* Table 2.

cause of the nature of the summary affirmance, it is not possible to know.

3. The Federal Circuit in Patent Cases Is Judicially Hyperactive

This part of the study supports the hypothesis that the Federal Circuit in patent cases is judicially hyperactive. The study shows that the Federal Circuit's reversal rates in all of its cases—patent and non-patent—and those in patent cases are significantly greater than the regional circuits' reversal rates in patent cases but not significantly greater than its reversal rates in non-patent cases. Moreover, the Federal Circuit's reversal rates in patent cases are significantly greater than its reversal rates in non-patent cases.

First, Part III.A.3.a discusses the differences between the reversal rates of the Federal Circuit in all cases—patent and non-patent—and those of the representative regional circuits. Second, Part III.A.3.b discusses the differences between the Federal Circuit's reversal rates in patent cases and non-patent cases. Third and finally, Part III.A.3.c discusses the differences between the Federal Circuit's reversal rates in patent cases and those of the representative regional circuits, as well as the differences between the Federal Circuit's reversal rates in non-patent cases and those of the representative regional circuits.

a. All Federal Circuit Cases (Patent and Non-Patent) Versus Regional Circuits

This part of the study supports the premise that the Federal Circuit is more judicially hyperactive than other circuits because the Federal Circuit's reversal rates in all cases—including both patent and non-patent cases—are greater than those of the representative regional circuits. Indeed, reversal rates under all standards of review, as well as overall reversal rates, were greater for the Federal Circuit (both unadjusted and adjusted for summary affirmances) than the corresponding aggregate reversal rates for the representative regional circuits. Importantly, with only one exception,¹⁴¹ these differences were statistically significant.

141. The lone difference that was not statistically significant was the difference between the Federal Circuit's adjusted reversal rate and the aggregate reversal rate of the regional circuits for the substantial evidence/reasonable juror standard of review.

Table 4 and Table 5 below summarize all these results, and Figure 7 below displays the same results graphically.¹⁴² First, Table 4 shows the results for raw Federal Circuit reversal rates, unadjusted for summary affirmances, for all Federal Circuit cases—i.e., both patent and non-patent cases. Second, Table 5 shows the results for Federal Circuit reversal rates adjusted for summary affirmances. Finally, Figure 7 graphically displays all these results, for both unadjusted and adjusted Federal Circuit reversal rates.

Table 4: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rate of Federal Circuit—Unadjusted for Summary Affirmances

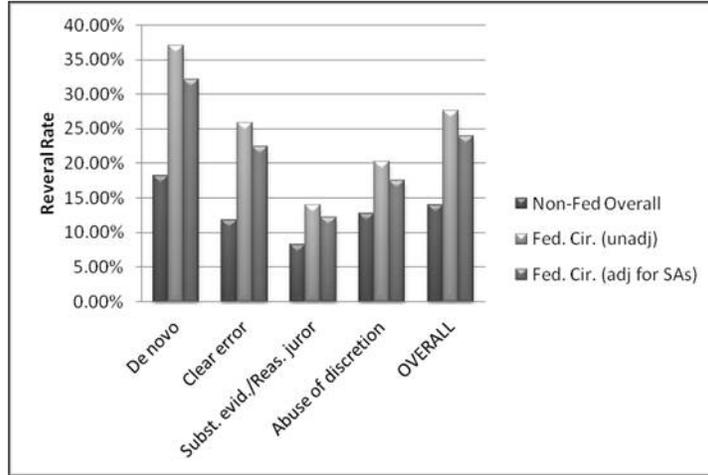
Standard of Review	NON-FED OVERALL	Federal Circuit (UNADJUSTED)	<i>z</i>	<i>p</i>	Statistically Significant? (Confidence)
De novo	18.2%	37.0%	5.505	< 0.0001	YES (>99.9%)
Clear error	11.8%	25.9%	2.087	0.0183	YES (98.2%)
Substantial evidence/ Reasonable Juror	8.2%	14.0%	1.434	0.0764	YES (92.4%)
Abuse of discretion	12.8%	20.2%	1.995	0.0228	YES (97.7%)
OVERALL	14.0%	27.7%	6.556	< 0.0001	YES (>99.9%)

Table 5: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rate of Federal Circuit—Adjusted for Summary Affirmances

Standard of Review	NON-FED OVERALL	Federal Circuit (ADJUSTED for Summ. Aff.'s)	<i>z</i>	<i>p</i>	Statistically Significant? (Confidence)
De novo	18.2%	32.1%	4.352	< 0.0001	YES (>99.9%)
Clear error	11.8%	22.5%	1.696	0.0446	YES (95.5%)
Substantial evidence/ Reasonable juror	8.2%	12.2%	1.063	0.1446	NO
Abuse of discretion	12.8%	17.5%	1.499	0.0668	YES (93.3%)
OVERALL	14.0%	24.0%	5.127	< 0.0001	YES (>99.9%)

142. In all instances, reversal rates are calculated as the percentage of issues for which the court reversed, vacated, or reversed in part. Another way of expressing the quantity of reversal rate is that it is equal to 100 minus the affirmance rate.

Figure 7: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rate of Federal Circuit



As Table 4 and Table 5 show, the overall reversal rate of the Federal Circuit was statistically significantly greater than that of the representative regional circuits. The overall unadjusted reversal rate of the Federal Circuit was 27.7%, whereas the overall reversal rate of the representative regional circuits was only 14.0%. This difference is statistically significant to greater than a 99% confidence level. Moreover, the overall reversal rate of the Federal Circuit adjusted for summary affirmances was 24.0%, which was statistically significantly greater than the overall reversal rate of the representative regional circuits, also to greater than a 99% confidence level. These results tend to indicate that the null hypothesis—that the Federal Circuit’s reversal rate is similar to that of the regional circuits—should be rejected, and that the alternative hypothesis—that the Federal Circuit’s reversal rate is greater than that of the regional circuits—should be accepted.

Table 6 breaks down these results for each circuit.

Just as with overall reversal rate, the reversal rate for the de novo standard of review of the Federal Circuit was statistically significantly greater than the corresponding rate of the representative regional circuits.

Figure 8 below graphically shows the reversal rates for the de novo standard of review.

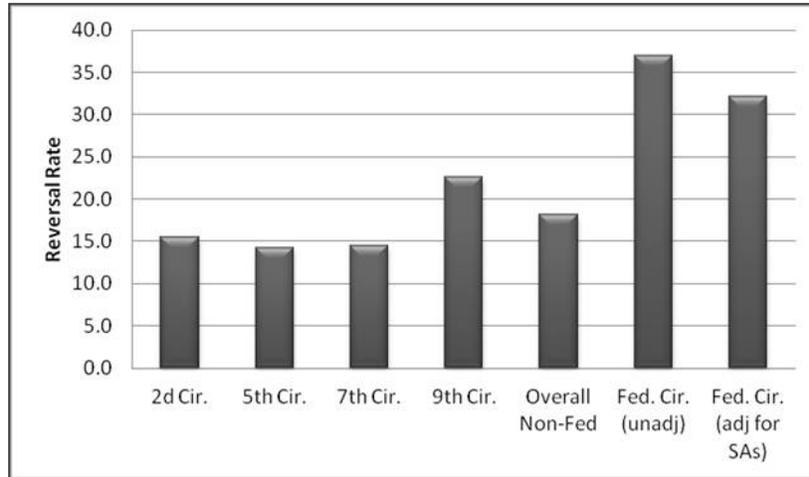
As Figure 8 shows, the Federal Circuit reversal rate, both unadjusted and adjusted for summary affirmances, is greater than each of the re-

Table 6: Reversal Rates for Each Circuit Studied

Standard of Review	Second Circuit	Fifth Circuit	Seventh Circuit	Ninth Circuit	NON-FED OVERALL	Federal Circuit (UNADJUSTED)	Federal Circuit (ADJUSTED for SAs)
De novo	15.5%	14.2%	14.5%	22.6%	18.2%	37.0%	32.1%
Clear error	23.9%	9.3%	17.0%	6.3%	11.8%	25.9%	22.5%
Substantial evidence/ Reasonable juror	5.1%	14.3%	18.5%	8.4%	8.2%	14.0%	12.2%
Abuse of discretion	9.3%	4.3%	21.7%	17.4%	12.8%	20.2%	17.5%
OVERALL	11.5%	10.5%	17.3%	16.7%	14.0%	27.7%	24.0%

versal rates for the other individual circuits studied. The unadjusted reversal rate of the Federal Circuit for the de novo standard was 37.0%, whereas the overall corresponding reversal rate of the repre-

Figure 8: Reversal Rates for De Novo Standard of Review



sentative regional circuits was only 18.2%. This difference is statistically significant to greater than a 99% confidence level. Moreover, the reversal rate of the Federal Circuit for the de novo standard adjusted for summary affirmances was 32.1%, which was statistically significantly greater than the overall reversal rate of the representative regional circuits to greater than a 90% confidence level. Therefore, these results also indicate that the null hypothesis—that the Federal Circuit’s reversal rate for the de novo standard of review is similar to

that of the regional circuits—should be rejected, and that the alternative hypothesis—that the Federal Circuit’s reversal rate for the de novo standard is greater than that of the regional circuits—should be accepted.

Similarly, Table 4 and Table 5 above show that the unadjusted and adjusted reversal rates for the Federal Circuit for the clear error, substantial evidence and reasonable juror, and abuse of discretion standards of review are all greater than the corresponding rates for the representative regional circuits, taken overall. With one exception, these differences are all statistically significant to at least a 92% confidence level. Therefore, with one exception, these results also indicate that the null hypothesis—that the Federal Circuit’s reversal rate for each of these standards of review is similar to that of the regional circuits—should be rejected, and that the alternative hypothesis—that the Federal Circuit’s reversal rate for each of these standards is greater than that of the regional circuits—should be accepted.

The one difference that is not statistically significant to at least a 90% confidence level is that of the Federal Circuit’s adjusted reversal rate and the aggregate regional-circuit reversal rate for the substantial evidence and reasonable juror standard. Here, the p -value is 0.1446, which means that there is only an 85.5% chance that this difference is not merely due to chance. As such, the difference is not statistically significant to the desired 90% confidence level. Because this one difference is not statistically significant, there is no statistical basis for rejecting the null hypothesis—that the Federal Circuit’s reversal rate for this standard of review is similar to that of the regional circuits. But the value of p is not overly high here, and the Federal Circuit’s reversal rate is about 50% greater than that of the regional circuits. Thus, increasing the sample size for this standard of review might very well make the result for this standard of review statistically significant. And even though the difference for this standard using the current data is not statistically significant, the fact that the Federal Circuit’s reversal rates is greater than that of the representative regional circuits, coupled with the still relative low p value, provide at least intuitive support to the alternative hypothesis—that the Federal Circuit’s reversal rate for this standard is greater than that of the regional circuits.

However, examining the Federal Circuit’s reversal rate against that of each individual circuit (rather than against the overall totals for all the representative circuits) reveals that the Federal Circuit’s reversal rate does not always exceed that of each individual circuit. For

example, Figure 9 below graphically shows the reversal rates for the clear error standard of review for each circuit and overall.

Figure 9: Reversal Rates for Clear Error Standard of Review

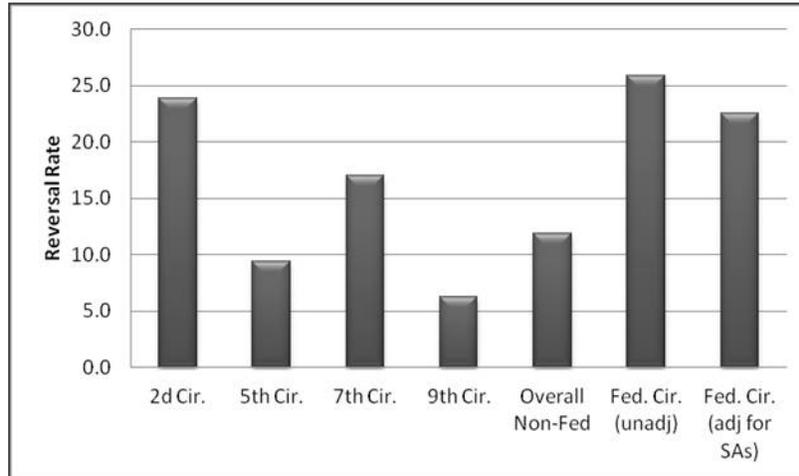


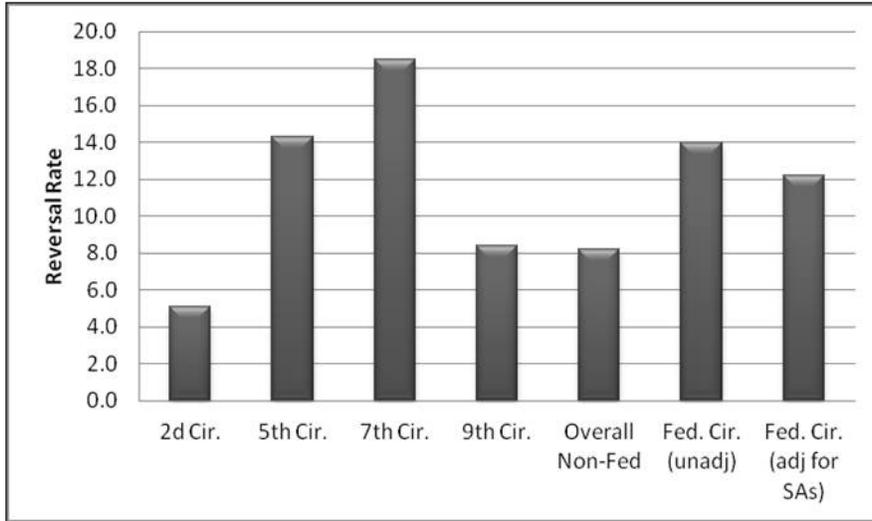
Figure 9 shows that although the unadjusted Federal Circuit reversal rate for the clear error standard (25.9%) was greater than that for all the individual circuits, the adjusted Federal Circuit reversal rate (22.5%) was not greater than that of the Second Circuit (23.9%). Notably, however, although the reversal rate of the Second Circuit exceeds that of the Federal Circuit (adjusted), this difference is not statistically significant.¹⁴³ Thus, this difference between the Federal Circuit and the Second Circuit, taken individually, likely does not alter the overall conclusion that the Federal Circuit's reversal rate is greater than that of the representative regional circuits as a whole.

Similarly, Figure 10 below depicts the reversal rates for the substantial evidence standard of review for each circuit and overall.

As Figure 10 shows, for this standard, the unadjusted Federal Circuit reversal rate (14.0%) and the adjusted Federal Circuit reversal rate (12.2%) are greater than that of all the other individual circuits except for the Fifth Circuit (14.3%) and the Seventh Circuit (18.5%).

143. The difference between the reversal rate for the Second Circuit and Federal Circuit (adjusted) was not statistically significant to at least a 90% confidence level ($z = 0.142$; $p = 0.4443$). An increase in sample size for this standard of review might yield significant results, one way or the other.

**Figure 10: Reversal Rates for Substantial Evidence/
Reasonable Juror Standard of Review**



Notably, however, these differences are not statistically significant.¹⁴⁴ Again, these differences between the Federal Circuit and the circuits taken individually likely do not alter the overall conclusion that the Federal Circuit’s reversal rate is greater than that of the representative regional circuits.

Finally, Figure 11 below depicts the reversal rates for the abuse of discretion standard of review for each circuit and overall.

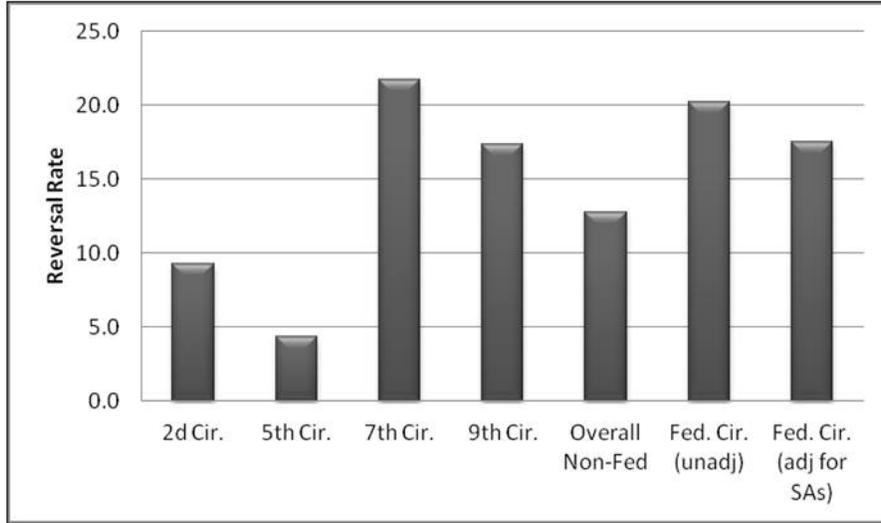
Here, the unadjusted Federal Circuit reversal rate (20.2%) and the adjusted Federal Circuit reversal rate (17.5%) are greater than that of all the other individual circuits except for the Seventh Circuit (21.7%). But again, these differences are not statistically significant.¹⁴⁵

144. The difference between the reversal rate for the Fifth Circuit and the Federal Circuit (unadjusted) was not statistically significant to at least a 90% confidence level ($z = 0.040$; $p = 0.4840$). Similarly, the difference between the reversal rate for the Fifth Circuit and the Federal Circuit (adjusted) was not statistically significant ($z = 0.299$; $p = 0.3821$).

Additionally, the difference between the reversal rate for the Seventh Circuit and the Federal Circuit (unadjusted) was not statistically significant to at least a 90% confidence level ($z = 0.533$; $p = 0.2981$). Similarly, the difference between the reversal rate for the Seventh Circuit and the Federal Circuit (adjusted) was not statistically significant ($z = 0.794$; $p = 0.2148$). An increase in sample size for this standard of review might yield significant results, one way or the other.

145. The difference between the reversal rate for the Seventh Circuit and the Federal Circuit (unadjusted) was not statistically significant to at least a 90% confidence level ($z =$

Figure 11: Reversal Rates for Abuse of Discretion Standard of Review



Thus, these differences between the Federal Circuit and the circuits taken individually may not alter the overall conclusion that the Federal Circuit’s reversal rate is greater than that of the representative regional circuits.

In sum, this part of the study supports the hypothesis that the Federal Circuit engages in judicial hyperactivity to a greater extent than the representative regional circuits studied. Indeed, the Federal Circuit’s overall reversal rate (both unadjusted and adjusted for summary affirmances) was statistically significantly greater than the overall reversal rate of the representative regional circuits taken as an aggregate. Moreover, the Federal Circuit’s reversal rates for the individual standards of review were statistically significantly greater than those of the representative regional circuits with only one exception. These results indicate that the hypothesis that the Federal Circuit’s reversal rate is greater than that of the regional circuits should be accepted. Therefore, these results support the notion that the Federal Circuit engages in judicial hyperactivity to a greater extent than the regional circuits.

0.209; $p = 0.4168$). Similarly, the difference between the reversal rate for the Seventh Circuit and the Federal Circuit (adjusted) was not statistically significant ($z = 0.622$; $p = 0.2676$).

b. Federal Circuit Patent Cases Versus Federal Circuit Non-Patent Cases

Separating the Federal Circuit’s patent cases from its non-patent cases supports the hypothesis that the Federal Circuit is more judicially hyperactive in patent cases than in non-patent cases. Indeed, as discussed below, the Federal Circuit’s overall reversal rate in patent cases was significantly greater than in non-patent cases, and the Federal Circuit’s reversal rates in patent cases broken down by standards of review were significantly greater than in non-patent cases for all standards of review except one.

Table 7 summarizes the results for the Federal Circuit’s reversal rates in patent versus non-patent cases¹⁴⁶ and graphically displays these results.

Table 7: Contrast of Federal Circuit’s Reversal Rates in Patent with Non-Patent Cases

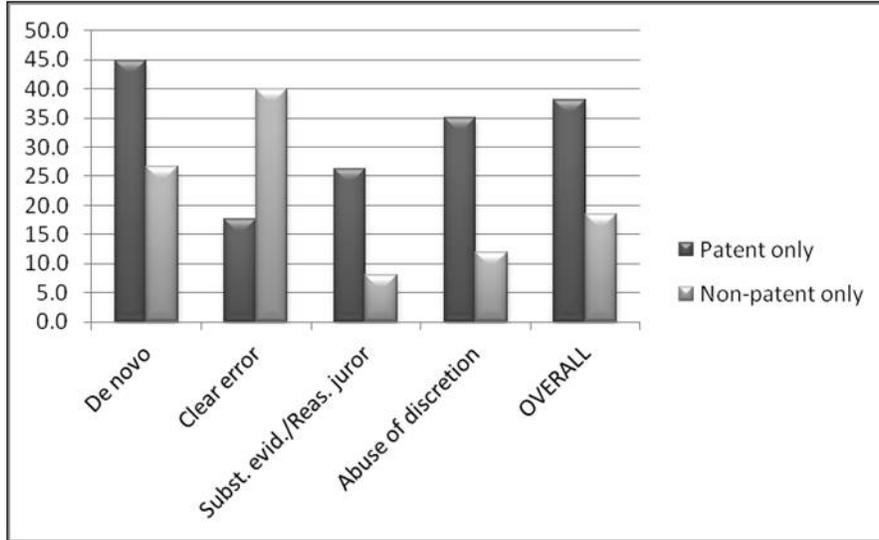
Z	Patent Cases	Non-Patent Cases	z	p	Statistically Significant? (Confidence)
De novo	44.9%	26.7%	2.457	0.007	YES (99.3%)
Clear error	17.6%	40.0%	1.283	0.100	YES (90.0%)
Substantial evidence/ Reasonable Juror	26.3%	7.9%	1.885	0.030	YES (97.0%)
Abuse of Discretion	35.1%	11.9%	2.824	0.002	YES (99.8%)
OVERALL	38.0%	18.4%	4.156	<0.0001	YES (>99.9%)

As Table 7 and Figure 12 show, the Federal Circuit’s overall reversal rate in patent cases is statistically significantly greater than in non-patent cases. The court’s overall reversal rate in patent cases was 38.0%, whereas in non-patent cases it was only 18.4%. This difference is statistically significant to greater than a 99.9% confidence level.

Table 7 and Figure 12 also show that for the de novo, substantial evidence/reasonable juror, and abuse of discretion standards of review, the Federal Circuit’s reversal rates in patent cases are statistically significantly greater than in non-patent cases. These differences are statistically significant to 99.3%, 97.0%, and 99.8% confidence levels,

146. This table reflects reversal rates that are unadjusted for summary affirmances. Such adjustment is not necessary here for this intracircuit comparison.

Figure 12: Contrast of Federal Circuit’s Reversal Rates in Patent with Non-Patent Cases



respectively. The only standard of review where the court’s reversal rate was greater in non-patent cases than in patent cases was the clear error standard. Strangely, for the clear error standard of review, the court’s reversal rate in non-patent cases was 40.0%, whereas its reversal rate in patent cases was only 17.6%. And this difference is statistically significant—though barely—to a 90.0% confidence level. Thus, this part of the study also tends to support the hypothesis that the Federal Circuit is judicially hyperactive in patent cases.

c. Federal Circuit Patent Cases and Non-Patent Cases Versus Regional Circuits

The Federal Circuit’s overall reversal rate in patent cases was significantly greater than the overall reversal rate of the representative regional circuits combined, and the Federal Circuit’s reversal rates in patent cases broken down by standards of review were significantly greater than those of the representative regional circuits for all standards of review except one. But the Federal Circuit’s adjusted overall reversal rate in non-patent cases was not significantly greater than the regional circuits’ overall reversal rate, and the Federal Circuit’s reversal rates in non-patent cases broken down by standards of review were

not significantly greater than the reversal rates of the representative regional circuits except for one standard of review.

Table 8 below shows the results for Federal Circuit reversal rates in patent cases only, adjusted for summary affirmances, contrasted with the reversal rates for the aggregate representative regional circuits. Table 9 breaks down these results for each circuit, and Figure 13 and Figure 14 graphically display all these results.

Table 8: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Patent Cases—Adjusted for Summary Affirmances

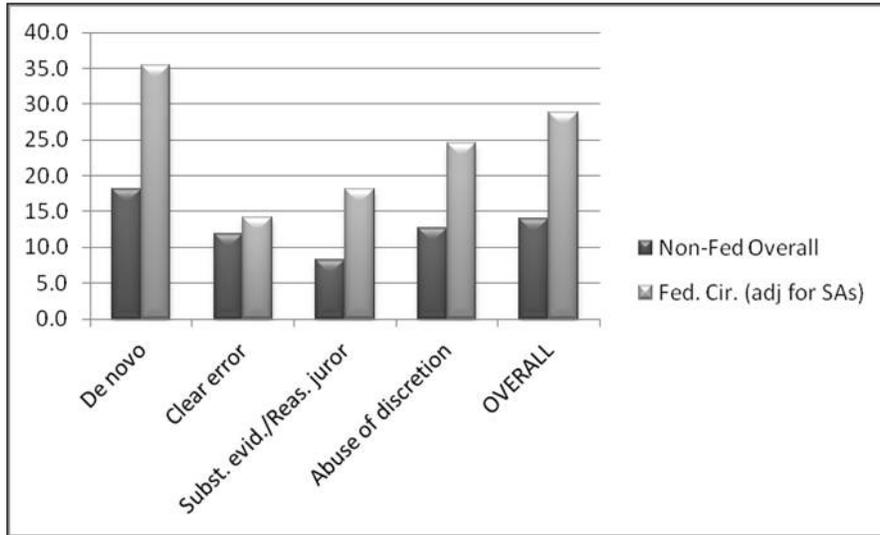
Standard of Review	NON-FED OVERALL	Federal Circuit Patent Cases (ADJUSTED for Summ. Aff.'s)	z	p	Statistically Significant? (Confidence)
De novo	18.2%	35.4%	4.446	<0.0001	YES (>99.9%)
Clear error	11.8%	14.2%	0.328	0.374	NO
Substantial evidence/ Reasonable juror	8.2%	18.1%	1.781	0.0375	YES (96.2%)
Abuse of discretion	12.8%	24.6%	2.376	0.0087	YES (99.1%)
OVERALL	14.0%	28.8%	5.850	<0.0001	YES (>99.9%)

Table 9: Contrast of Reversal Rates for Each Circuit Studied with Federal Circuit Patent Cases

Standard of Review	Second Circuit	Fifth Circuit	Seventh Circuit	Ninth Circuit	NON-FED OVERALL	Federal Circuit Patent Cases (ADJUSTED for SAs)
De novo	15.5%	14.2%	14.5%	22.6%	18.2%	35.4
Clear error	23.9%	9.3%	17.0%	6.3%	11.8%	14.2
Substantial evidence/ Reasonable juror	5.1%	14.3%	18.5%	8.4%	8.2%	18.1
Abuse of discretion	9.3%	4.3%	21.7%	17.4%	12.8%	24.6
OVERALL	11.5%	10.5%	17.3%	16.7%	14.0%	28.8

As Table 8 shows, the Federal Circuit’s overall reversal rate in patent cases (adjusted for summary affirmances) was statistically signifi-

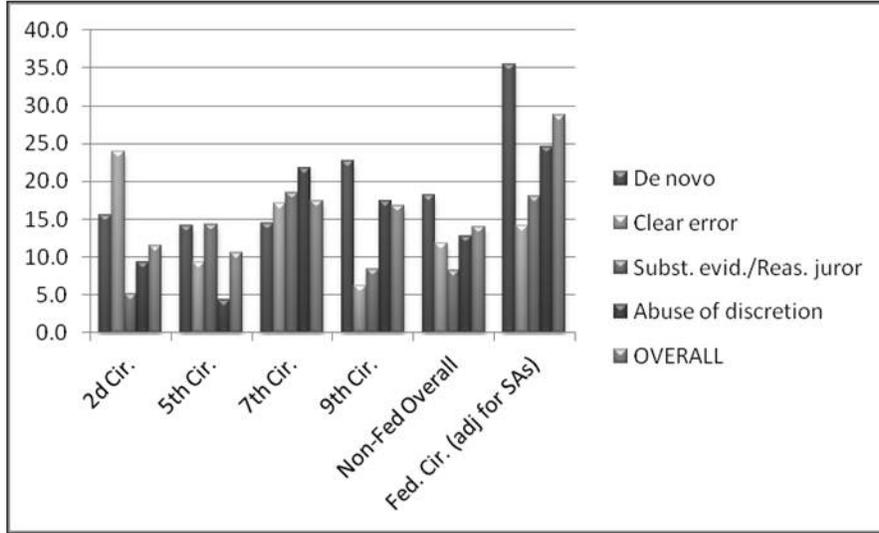
Figure 13: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Patent Cases—Breakdown by Standards of Review



cantly greater than the regional circuits’ overall reversal rate in all cases studied. The Federal Circuit’s overall adjusted reversal rate in patent cases was 28.8%, whereas the overall reversal rate of the representative regional circuits was only 14.0%. This difference is statistically significant to greater than a 99.9% confidence level. Breaking down the results by standards of review, Table 8 shows that the Federal Circuit’s reversal rates in patent cases for all standards of review (adjusted for summary affirmances) are greater than those of the representative regional circuits. And these differences are statistically significant for all standards of review except for one—clear error. Thus, these results tend to indicate that the null hypothesis—that the Federal Circuit’s reversal rate in patent cases is similar to that of the regional circuits—should be rejected, and that the alternative hypothesis—that the Federal Circuit’s reversal rate is greater than that of the regional circuits—should be accepted.

In contrast, the Federal Circuit’s adjusted overall reversal rate in non-patent cases is not significantly greater than the overall reversal rate of the representative regional circuits combined, and the Federal Circuit’s adjusted reversal rates in non-patent cases broken down by standards of review were similarly not significantly greater than those of the representative regional circuits for all standards of review ex-

Figure 14: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Patent Cases—Breakdown by Standards of Review and by Circuit



cept one. First, Table 10 shows the results for Federal Circuit reversal rates in non-patent cases only, adjusted for summary affirmances. Table 11 breaks down these results for each circuit, and Figure 15 and Figure 16 graphically display all these results.

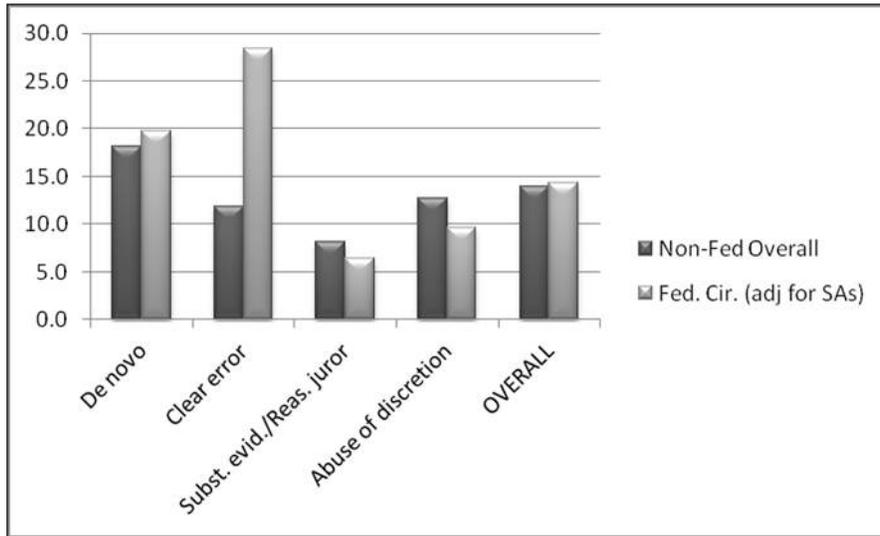
Table 10: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Non-Patent Cases—Adjusted for Summary Affirmances

Standard of Review	NON-FED OVERALL	Federal Circuit Patent Cases (ADJUSTED for Summ. Aff.'s)	<i>z</i>	<i>p</i>	Statistically Significant? (Confidence)
De novo	18.2%	19.7%	0.368	0.3557	NO
Clear error	11.8%	28.3%	1.821	0.0344	YES (96.6%)
Substantial evidence/ Reasonable juror	8.2%	6.4%	0.430	0.3336	NO
Abuse of discretion	12.8%	9.7%	0.799	0.2119	NO
OVERALL	14.0%	14.3%	0.128	0.4483	NO

Table 11: Contrast of Reversal Rates for Each Circuit Studied with Federal Circuit Non-Patent Cases

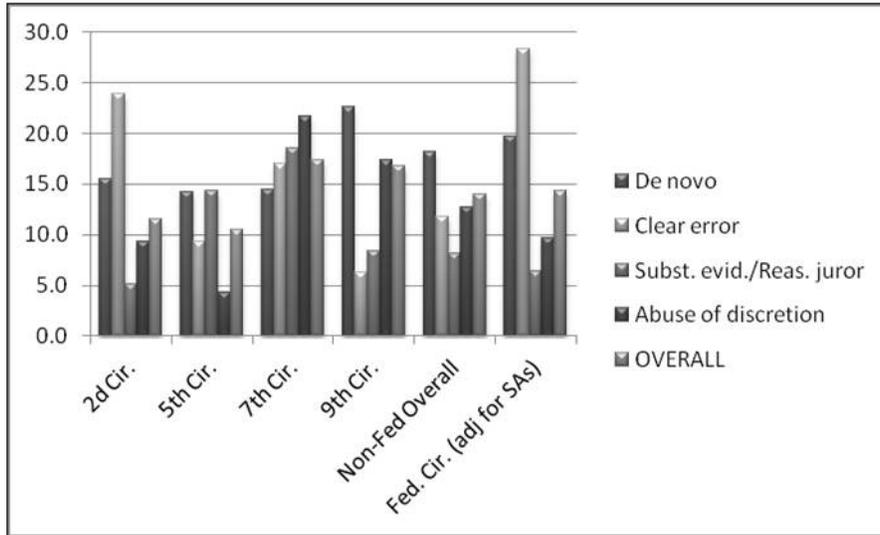
Standard of Review	Second Circuit	Fifth Circuit	Seventh Circuit	Ninth Circuit	NON-FED OVERALL	Federal Circuit Patent Cases (ADJUSTED for SAs)
De novo	15.5%	14.2%	14.5%	22.6%	18.2%	19.7%
Clear error	23.9%	9.3%	17.0%	6.3%	11.8%	28.3%
Substantial evidence/ Reasonable juror	5.1%	14.3%	18.5%	8.4%	8.2%	6.4%
Abuse of discretion	9.3%	4.3%	21.7%	17.4%	12.8%	9.7%
OVERALL	11.5%	10.5%	17.3%	16.7%	14.0%	14.3%

Figure 15: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Non-Patent Cases—Breakdown by Standards of Review



As Table 10 shows, the overall reversal rate in non-patent cases (adjusted for summary affirmances) was not statistically significantly greater than the regional circuits’ overall reversal rate in all cases studied. The Federal Circuit’s overall adjusted reversal rate in non-patent

Figure 16: Contrast of Reversal Rates of Non-Federal Circuits with Reversal Rates of Federal Circuit in Non-Patent Cases—Breakdown by Standards of Review and by Circuit



cases was 14.3%, whereas the overall reversal rate of the representative regional circuits was 14.0%. This difference is not statistically significant.¹⁴⁷ Additionally, breaking down the results by standards of review, Table 10 shows that the Federal Circuit’s reversal rates for all standards of review except one are not statistically significantly greater than those of the representative regional circuits. Indeed, for two of the standards of review—substantial evidence and reasonable juror and abuse of discretion—the overall reversal rates of the regional circuits are actually greater than those of the Federal Circuit, though not statistically significantly so. The only exception is for the Federal Circuit’s reversal rate for the clear error standard of review, which is statistically significantly greater than the corresponding reversal rate for the representative regional circuits to a confidence level of 96.6%. Thus, these results overall tend to indicate that the null hypothesis here—that the Federal Circuit’s reversal rate in non-patent cases is similar to that of the regional circuits—cannot be rejected, and that there is no statistical basis for accepting the alternative hypothesis—

147. Indeed, $p = 0.448$, which means that the probability that this difference is due to chance is a very high 44.8%.

that the Federal Circuit's reversal rate in non-patent cases is greater than that of the regional circuits.

In sum, this part of the study further supports the hypothesis that the Federal Circuit engages in judicial hyperactivity in patent cases to a greater extent than the representative regional circuits studied. Indeed, the Federal Circuit's overall reversal rate in patent cases was statistically significantly greater than the Federal Circuit's overall reversal rate in non-patent cases. Moreover, the Federal Circuit's adjusted overall reversal rate in patent cases was statistically significantly greater than the overall reversal rate of the representative regional circuits taken as an aggregate. But the Federal Circuit's adjusted overall reversal rate in non-patent cases was not statistically significantly greater than the regional circuits' overall reversal rate. And breaking the data down by particular standards of review reveals similar results. The Federal Circuit's reversal rates for the individual standards of review in patent cases were statistically significantly greater than those of the representative regional circuits, with only one exception. But the Federal Circuit's reversal rates for the individual standards of review in non-patent cases were not statistically significantly greater than those of the representative regional circuits, again with only one exception. These results indicate that the hypothesis that the Federal Circuit's reversal rate in its patent cases is greater than the reversal rates of the regional circuits should be accepted, and they also support the notion that the Federal Circuit engages in judicial hyperactivity in its patent cases to a greater extent than the regional circuits.

B. Results: Reversal Rates for Several Examples of Procedural Postures

The results of this part of the study also support the hypothesis that the Federal Circuit's reversal rate is greater than that of the regional circuits should be accepted. For all three examples of procedural postures examined, there is a statistically significant difference between the Federal Circuit's reversal rate and the mean reversal rate of the representative regional circuits studied. These results tend to confirm that the Federal Circuit is more judicially hyperactive than other circuits.

This Part discusses the results of the second part of the study in detail. Part III.B.1 discusses the results with respect to summary judgment cases. Part III.B.2 discusses the results with respect to JMOL cases. And Part III.B.3 discusses the results with respect to preliminary injunction cases.

1. Summary Judgment

The results of this study show that the Federal Circuit reverses summary judgment decisions at a statistically significantly greater rate than do the representative regional circuits studied. A motion for summary judgment allows a party to dispense with a trial when there is “no genuine issue as to any material fact and the movant is entitled to judgment as a matter of law.”¹⁴⁸ Disposition of patent cases through summary judgment is common, just as for other types of cases.¹⁴⁹ A court of appeals reviews the grant of a motion for summary judgment under a *de novo* standard¹⁵⁰ and reviews the denial of a motion for summary judgment under an abuse of discretion standard.¹⁵¹

Table 12 below gives the results for reversal rates for the Federal Circuit and the regional circuits examined.

As Table 12 shows, the Federal Circuit reversed, at least in part, the district court’s decision on summary judgment in 42.5% of the cases studied. In contrast, the regional circuits reversed these decisions, at least in part, an average of only 22.5%. This difference is statistically significant to a 99.7% confidence level.¹⁵²

Figure 17 below shows the breakdown of overall reversal rates for each individual circuit studied.

148. FED. R. CIV. P. 56(a); *see, e.g.*, *Del. Valley Floral Grp. v. Shaw Rose Nets, LLC*, 597 F.3d 1374, 1378–79 (Fed. Cir. 2010) (quoting FED. R. CIV. P. 56(c) (modified 2010)) (reviewing *de novo* a district court’s decision granting summary judgment). The trial court must draw all reasonable inferences “in favor of the non-movant” and must treat the evidence “in the light most favorable to the non-movant.” *Id.* at 1379 (citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)).

149. For example, *Delaware Valley Floral Group*, 597 F.3d at 1374–84, is a recent typical patent case resolved on summary judgment. In this case, the Federal Circuit reviewed the district court’s grant of a motion for summary judgment that invalidated the patentee’s patent based on the on-sale bar. *Id.* at 1378–79. As in any summary judgment case, the court largely focused on whether issues of material fact existed that would have precluded judgment as a matter of law in favor of the accused infringer. *Id.* at 1379.

150. *E.g.*, *Conroy v. Reebok Int’l, Ltd.*, 14 F.3d 1570, 1575 (Fed. Cir. 1994) (“This court reviews *de novo* a district court’s grant of summary judgment.”).

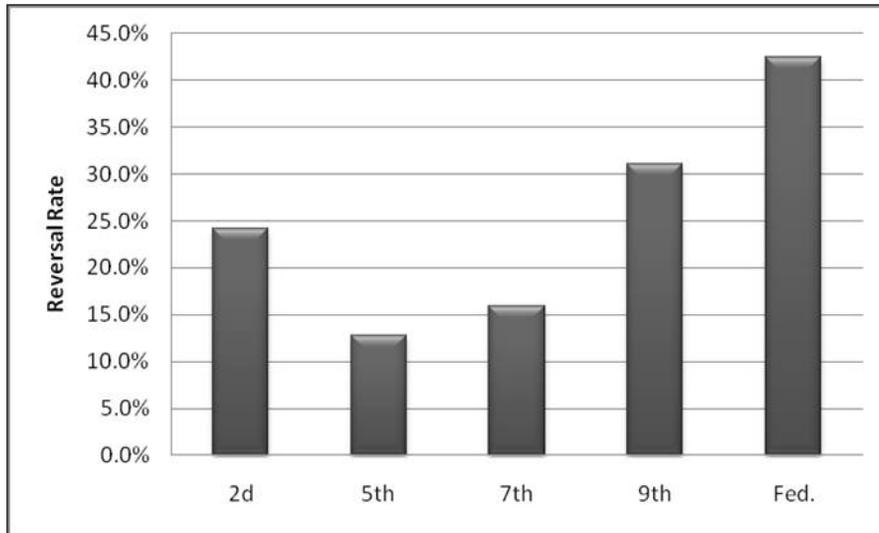
151. *E.g.*, *Trading Techs. Int’l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1359 (Fed. Cir. 2010) (“This court reviews a denial of a motion for summary judgment for an abuse of discretion.”).

152. The value of z is 2.79, and the value of p is 0.00264. Thus, the difference is statistically significant to a 99.7% confidence level.

Table 12: Summary Judgment—Reversal Rates Data

Circuit	Affirmed	Reversed	Vacated	Reversed in Part	Rev'd + Vacated + Rev'd in Part
Federal Circuit	57.5%	10.0%	5.0%	27.5%	42.5%
Non-Fed Circuits (MEAN)	77.2%	6.8%	5.9%	9.9%	22.5%
2d	75.3%	5.0%	8.7%	10.5%	24.2%
5th	87.2%	8.5%	0.0%	4.3%	12.8%
7th	84.1%	4.5%	2.3%	9.1%	15.9%
9th	68.9%	15.6%	2.2%	13.3%	31.1%

Figure 17: Summary Judgment—Overall Reversal Rates for Individual Circuits



As Table 12 and Figure 17 show, the Ninth Circuit is the circuit whose overall reversal rate is the closest to that of the Federal Circuit. The Ninth Circuit’s reversal rate is 31.1%, which is still somewhat lower than the Federal Circuit’s rate of 42.5%. However, this difference is not statistically significant.¹⁵³ But the differences between the

153. The value of z is 1.09, and the value of p is 0.1379. Thus, although the Federal Circuit’s reversal rate appears on first glance to be significantly larger than that of the Ninth Circuit, this difference is not statistically significant.

Federal Circuit’s reversal rate and that of the Second (24.2%), Fifth (12.8%), and Seventh (15.9%) Circuits are statistically significant to greater than a 99% confidence level.¹⁵⁴

This part of the study shows that the Federal Circuit reverses summary judgment decisions at a statistically significantly greater rate than do the representative regional circuits studied. These results also tend to indicate that the hypothesis that the Federal Circuit’s reversal rate for summary judgment decisions is greater than that of the regional circuits should be accepted. And this part of the study also tends to confirm the hypothesis that the Federal Circuit is more “judicially hyperactive” than the regional circuits studied.

2. Judgment as a Matter of Law

As with summary judgment, the results of this study show that the Federal Circuit reverses decisions of district courts involving JMOL at a statistically significantly higher rate than do the representative regional circuits studied.

Table 13 below gives the results for reversal rates for the Federal Circuit and the regional circuits examined.

Table 13: JMOL—Reversal Rates Data

Circuit	Affirmed	Reversed	Vacated	Reversed in Part	Rev’d + Vacated + Rev’d in Part
Federal Circuit	47.7%	21.5%	4.6%	26.2%	52.3%
Non-Fed Circuits (MEAN)	77.0%	13.3%	1.6%	8.2%	23.0%
2d	79.2%	10.4%	4.2%	6.3%	20.8%
5th	80.8%	12.1%	1.0%	6.1%	19.2%
7th	70.3%	18.9%	0.0%	10.8%	29.7%
9th	73.6%	13.9%	1.4%	11.1%	26.4%

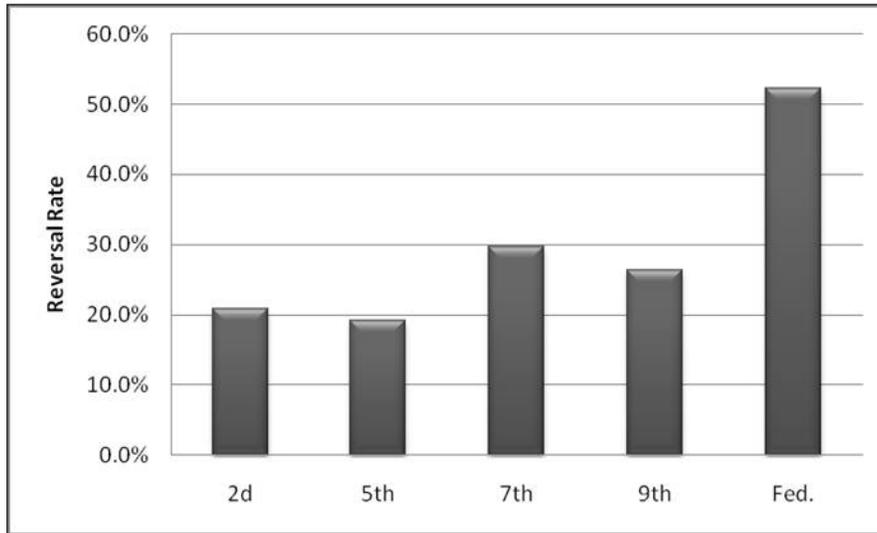
As Table 13 shows, the Federal Circuit reversed, at least in part, the district court’s decision on JMOL in 52.3% of the cases studied. In

154. The value of *z* for the Federal Circuit’s rate compared to the Second Circuit’s rate is 2.40, which corresponds to a *p*-value of 0.00880. Thus, this difference is significant to a 99.2% confidence level. The value of *z* for the Federal Circuit’s rate compared to the Fifth Circuit’s rate is 3.13, which corresponds to a *p*-value of 0.00087. Thus, this difference is significant to a 99.9% confidence level. Finally, the value of *z* for the Federal Circuit’s rate compared to the Seventh Circuit’s rate is 2.70, which corresponds to a *p*-value of 0.0035. Thus, this difference is significant to a 99.6% confidence level.

contrast, the regional circuits reversed these decisions, at least in part, an average of only 23.0% of the time. This difference is statistically significant to a 99% confidence level.¹⁵⁵

Figure 18 below shows the breakdown of overall reversal rates for each individual circuit studied.

Figure 18: JMOL—Overall Reversal Rates for Individual Circuits



As Table 13 and Figure 18 show, the Seventh Circuit is the circuit whose overall reversal rate is the closest to that of the Federal Circuit. The Seventh Circuit's reversal rate is 29.7%, which is significantly lower than the Federal Circuit's rate of 52.3%. Indeed, this difference is statistically significant to a 95% confidence level.¹⁵⁶ Moreover, the differences between the Federal Circuit's reversal rate and that of the Second (20.8%), Fifth (19.2%), and Ninth (26.4%) Circuits are statistically significant to a 99% confidence level.¹⁵⁷ The results of this part

155. For this difference, $z = 4.65$ and $p < 0.0001$. Thus, this difference is statistically significant to greater than a 99.9% confidence level.

156. For this difference, $z = 2.21$ and $p = 0.0136$. Thus, this difference is statistically significant to a 98.6% confidence level.

157. The value of z for the Federal Circuit's rate compared to the Second Circuit's rate is 3.40, which corresponds to a p -value of 0.00034. Thus, this difference is significant to greater than a 99.9% confidence level. The value of z for the Federal Circuit's rate compared to the Fifth Circuit's rate is 4.43, which corresponds to a p -value of 0.00003. Thus, this difference is also significant to greater than a 99.9% confidence level. Finally, the value

of the study show that the Federal Circuit reverses JMOL decisions at a statistically significantly greater rate than do the representative regional circuits studied. These results also support the hypothesis that the Federal Circuit's reversal rate for JMOL decisions is greater than that of the regional circuits. This part of the study also tends to confirm the hypothesis that the Federal Circuit is more "judicially hyperactive" than the regional circuits studied.

3. Preliminary Injunction

For cases involving preliminary injunctions, although the difference is not as striking as for summary judgment and JMOL, the Federal Circuit's reversal rate is nonetheless statistically significantly greater than the mean rate of the representative regional circuits. To succeed in a motion for preliminary injunction, the "the moving party must demonstrate a reasonable likelihood of success on the merits, irreparable harm in the absence of a preliminary injunction, a balance of hardships tipping in its favor, and the injunction's favorable impact on the public interest."¹⁵⁸ Under the Federal Circuit's test, "[t]hese factors, taken individually, are not dispositive; rather, the district court must weigh and measure each factor against the other factors and against the form and magnitude of the relief requested."¹⁵⁹ However, to succeed, the movant must establish "both of the first two factors, *i.e.*, likelihood of success on the merits and irreparable harm."¹⁶⁰ The Federal Circuit has characterized the preliminary injunction as "a drastic and extraordinary remedy that is not to be routinely granted."¹⁶¹ A court of appeals reviews the grant or denial of a preliminary injunction under an abuse of discretion standard.¹⁶²

of z for the Federal Circuit's rate compared to the Ninth Circuit's rate is 3.11, which corresponds to a p -value of 0.00094. Thus, this difference is yet again significant to greater than a 99.9% confidence level.

158. *Nat'l Steel Car, Ltd. v. Canadian Pac. Ry.*, 357 F.3d 1319, 1324–25 (Fed. Cir. 2004).

159. *Hybritech Inc. v. Abbott Labs.*, 849 F.2d 1446, 1451 (Fed. Cir. 1988).

160. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1350 (Fed. Cir. 2001). (emphasis omitted).

161. *Intel Corp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1568 (Fed. Cir. 1993); *accord Nutrition 21 v. United States*, 930 F.2d 867, 869 (Fed. Cir. 1991) (characterizing the preliminary injunction as "extraordinary . . . relief"); *Ill. Tool Works, Inc. v. Grip-Pak, Inc.*, 906 F.2d 679, 683 (Fed. Cir. 1990) ("A preliminary injunction is a drastic remedy.")

162. *E.g.*, *Am. Signature, Inc. v. United States*, 598 F.3d 816, 823 (Fed. Cir. 2010) ("The governing standard of review on appeal of a grant or denial of a preliminary injunction is abuse of discretion."); *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1298 (Fed. Cir. 2009) ("This court reviews the grant or denial of a preliminary injunction for abuse of discretion.").

Table 14 below gives the results for reversal rates for the Federal Circuit and the regional circuits examined.

Table 14: Preliminary Injunction—Reversal Rates Data

Circuit	Affirmed	Reversed	Vacated	Reversed in Part	Rev'd + Vacated + Rev'd in Part
Federal Circuit	51.3%	10.3%	30.8%	7.7%	48.7%
Non-Fed Circuits (MEAN)	65.4%	14.2%	13.6%	6.8%	34.6%
2d	67.0%	9.9%	16.5%	6.6%	33.0%
5th	61.8%	1.8%	27.3%	9.1%	38.2%
7th	59.5%	16.7%	21.4%	2.4%	40.5%
9th	67.3%	20.0%	5.5%	7.3%	32.7%

As Table 14 shows, the Federal Circuit reversed, at least in part, the district court’s decision on preliminary injunctions in 48.7% of the cases studied. In contrast, the regional circuits reversed these decisions, at least in part, an average of 34.6% of the time. This difference is statistically significant to a 95.9% confidence level.¹⁶³

Figure 19 below shows the breakdown of overall reversal rates for each individual circuit studied.

As Table 14 and Figure 19 show, the Seventh Circuit is the circuit whose overall reversal rate is the closest to that of the Federal Circuit. The Seventh Circuit’s reversal rate is 40.5%, which is slightly lower than the Federal Circuit’s rate of 48.7%. However, this difference is not statistically significant.¹⁶⁴ The circuit with the next-closest reversal rate to the Federal Circuit is the Fifth Circuit, whose reversal rate is 38.2%. This difference is also not statistically significant to a 90% confidence level.¹⁶⁵ But the differences between the Federal Circuit’s reversal rate and that of the Second (33.0%) and Ninth (32.7%) Circuits are statistically significant to a 90% confidence level.¹⁶⁶

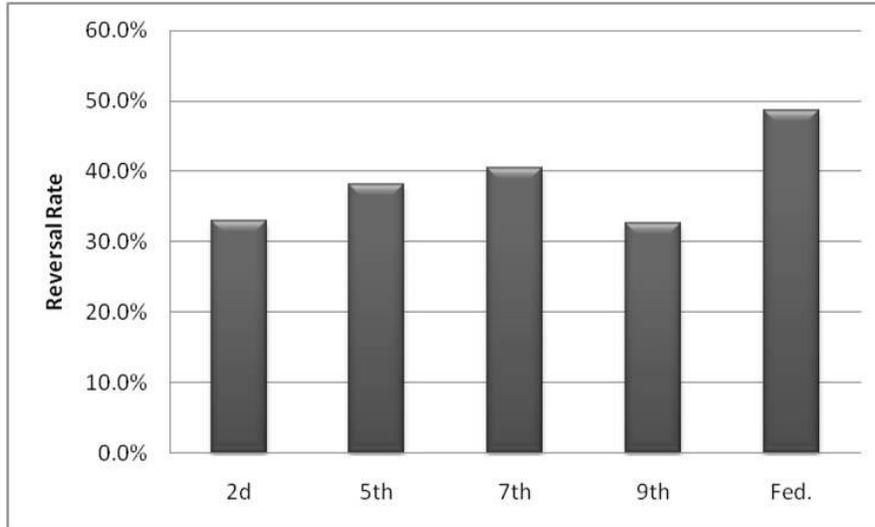
163. For this difference, $z = 1.741$ and $p = 0.04093$. Thus, this difference is statistically significant to a 95.9% confidence level.

164. Here, $z = 0.742$ and $p = 0.230$. Thus, this difference is not statistically significant.

165. Here, $z = 1.01$ and $p = 0.156$. Thus, this difference is not statistically significant.

166. The value of z for the Federal Circuit’s rate compared to the Second Circuit’s rate is 1.69, which corresponds to a p -value of 0.0455. Thus, this difference is significant to a 95.4% confidence level. The value of z for the Federal Circuit’s rate compared to the Ninth Circuit’s rate is 1.88, which corresponds to a p -value of 0.0300. Thus, this difference is significant to a 97.0% confidence level.

Figure 19: Preliminary Injunction—Overall Reversal Rates for Individual Circuits



The results of this part of the study show that the Federal Circuit reverses preliminary injunction decisions at a statistically significantly greater rate than do the representative regional circuits studied. These results also support the hypothesis that the Federal Circuit's reversal rate for preliminary injunction decisions is greater than that of the regional circuits. And this part of the study also tends to confirm the hypothesis that the Federal Circuit is more "judicially hyperactive" than the regional circuits studied.

In sum, the outcome of this second part of the study also indicates that the hypothesis that the Federal Circuit's reversal rate in general is greater than that of the regional circuits should be accepted. For all three example procedural postures studied, the Federal Circuit's reversal rate was statistically significantly greater than that of the representative regional circuits taken as an aggregate. Ultimately, these results also tend to empirically confirm that the Federal Circuit has engaged in a greater degree of judicial hyperactivity than the representative regional circuits studied.

IV. Possible Reasons for the Results of This Study

With few exceptions, the results of this study show that the Federal Circuit's reversal rates—particularly in patent cases—are signifi-

cantly greater than those of the representative regional circuits studied. This Part discusses several possible reasons for these results, including the nature of patent cases themselves, the nature of the Federal Circuit judges, and the relative workloads of the Federal Circuit contrasted with those of the regional circuits studied.

A. The Nature of Patent Cases

One possible reason for the results of this study is the nature of patent cases themselves. Patent cases are generally both legally and technically complex—more so than the average non-patent case that a court hears.¹⁶⁷ Because of this complexity, district court judges who are inexperienced with patent cases are more likely to commit reversible errors than they are with other types of cases.¹⁶⁸ As a result, the Federal Circuit's reversal rates would naturally be greater in patent cases than in non-patent cases, and the Federal Circuit's reversal rates would naturally be greater in patent cases than the regional circuits' reversal rates. If this proposition is true, greater reversal rates may be a necessary outcome of the complexity of patent law, and the judicial hyperactivity identified by Rooklidge and Weil¹⁶⁹ may not be fully responsible for the Federal Circuit's relatively high reversal rates in patent cases.

167. See, e.g., S. REP. NO. 97-275, at 7 (1981), reprinted in 1982 U.S.C.C.A.N. 11, 17 (“The Court of Appeals for the Federal Circuit will be considering cases that are unusually complex and technical.”); Jeanne C. Fromer, *Patentography*, 85 N.Y.U. L. REV. 1444, 1455 (2010) (“Patent law’s technical complexity was a principal reason for the Federal Circuit’s creation. Patent law frequently seems remote and unusually technical to lawyers specializing in other areas, in large part because its legal determinations typically require deep understanding of the technology or industry at issue in any particular patent.” (footnotes omitted)); Kali Murray & Esther van Zimmeren, *Dynamic Patent Governance in Europe and the United States: The Myriad Example*, 19 CARDOZO J. INT’L & COMP. L. 287, 308–09 (2011) (“Patent law is widely regarded as a very complex field of law because of its difficult legal framework, procedures and concepts, as well as the inherently technical nature of patents.”); Schwartz, *supra* note 59, at 227 (“Patent law is difficult. Not only is the law intricate and ever-changing, but the patents themselves describe complex and often cutting-edge technologies.” (footnote omitted)).

168. But an empirical study by Professor David L. Schwartz tends to refute this possibility. See generally Schwartz, *supra* note 59. Professor Schwartz analyzed “the reversal rates [in claim construction decisions] of district court judges with varying levels of patent experience.” *Id.* at 225. He concluded from his analysis that “[c]ontrary to theory, district court judges do not appear to improve based upon various measures of experience.” *Id.* at 267. In other words, according to the results of Professor Schwartz’s study, the relative patent inexperience by district court judges does not necessarily account for the Federal Circuit’s relatively high reversal rates in patent cases as seen in this Article’s study.

169. See *supra* Part I.A (describing Rooklidge’s and Weil’s contentions that the Federal Circuit acts improperly as both an advocate and a fact finder).

Congress has suspected that the relative inexperience of district court judges with patent cases may be undesirable and has enacted a pilot program designed to help remedy this perceived problem.¹⁷⁰ In 2011, Congress introduced this program “in certain United States district courts to encourage enhancement of expertise in patent cases among district judges.”¹⁷¹ Under this program, in certain designated districts, judges will be permitted to volunteer as desiring to hear patent cases.¹⁷² New patent cases will be assigned at random to a judge as always.¹⁷³ But the judge to whom the case is assigned has the option of turning it down.¹⁷⁴ If that judge turns it down, then the case will be randomly assigned to one of the judges who volunteered as desiring to hear patent cases.¹⁷⁵ Thus, the hope is that these judges will become more experienced at patent law and, as a result, be reversed less often by the Federal Circuit.¹⁷⁶

A follow-up to this Article’s study may help shed light on whether this pilot program is successful. After a sufficient time period for the pilot program to work, such a follow-up study could examine the reversal rates of these volunteer judges in patent cases as compared to the same judges’ reversal rates in non-patent cases, as well as the reversal rates of the volunteer judges in patent cases as compared to the reversal rates in patent cases of non-volunteer judges. If the reversal rates of the volunteer judges in patent cases are comparable to their reversal rates in non-patent cases, and if the reversal rates of the volunteer judges in patent cases are significantly less than those in patent cases of non-volunteer judges, then these results would tend to confirm that the pilot program was having its desired effect.

170. Patent Cases Pilot Program, Pub. L. No. 111-349, 124 Stat. 3674 (2011); see Press Release, U.S. Courts, District Courts Selected for Patent Pilot Program (June 7, 2011), available at http://www.uscourts.gov/news/newsview/11-06-07/District_Courts_Selected_for_Patent_Pilot_Program.aspx (announcing the implementation the Patent Pilot Program). This pilot program is slated to run for ten years. § 1(c), 124 Stat. at 3675.

171. 124 Stat. at 3674.

172. § 1(a)(1)(A), 124 Stat. at 3674.

173. § 1(a)(1)(B), 124 Stat. at 3674.

174. § 1(a)(1)(C), 124 Stat. at 3674.

175. § 1(a)(1)(D), 124 Stat. at 3674.

176. Professor Schwartz’s empirical study of how judicial experience in patent cases affects reversal rates predicts that this pilot program will not be successful in reducing the Federal Circuit’s reversal rates in claim construction decisions. Schwartz, *supra* note 59, at 262 (“[F]unneling patent cases via the Patent Pilot Program to a smaller subset of judges, on its own, is unlikely to reduce the reversal rate.”); see *supra* note 168 (providing an overview of Professor Schwartz’s study).

B. The Nature of the Federal Circuit Judges Themselves

Another possible reason for the Federal Circuit's relatively high reversal rates in patent cases may be the nature of the Federal Circuit judges themselves. It may be that the type of judges who serve on the Federal Circuit are more prone to judicial hyperactivity than the type of judges who serve on the other circuits due to personality, background, experience, or temperament. If this proposition is true, reducing judicial hyperactivity on the Federal Circuit in patent cases may require appointment of different types of judges to the Federal Circuit.

This proposition is not largely responsible, if at all, for the judicial hyperactivity seen in this study. This proposition would more likely be true if the Federal Circuit were a specialized patent court. But it is not—Congress deliberately included many other areas of law aside from patent law within the Federal Circuit's jurisdiction to prevent the Federal Circuit from becoming a specialized patent court.¹⁷⁷ In fact, far from all Federal Circuit judges have had technical or patent-law backgrounds.¹⁷⁸ Judges with such backgrounds might be tempted to be more judicially hyperactive—particularly within the area of their expertise. But because the Federal Circuit judges do not all share this type of background, it is not likely that the court's judges as a whole possess character traits that would cause them to be judicially hyperactive.

In addition, if the Federal Circuit judges possess character traits that caused them to be judicially hyperactive, then the court's reversal rates even in non-patent cases should be significantly greater than those of the regional circuits. But instead this study shows that the Federal Circuit's reversal rates in non-patent cases are comparable to the reversal rates of the representative regional circuits studied.¹⁷⁹ Therefore, it is not likely that the Federal Circuit's relatively high re-

177. 28 U.S.C. § 1295 (2006); see Craig Allen Nard & John F. Duffy, *Rethinking Patent Law's Uniformity Principle*, 101 Nw. U. L. REV. 1619, 1642 (2007) (“[I]n an attempt to avoid creating an overly specialized court, Congress included within the jurisdiction of the Federal Circuit appeals involving other areas of the law, including takings cases, government contract cases, trade appeals from the Court of International Trade and the International Trade Commission, and personnel appeals from the Merit Systems Protection Board.” (footnote omitted)).

178. See Moore, Markman *Eight Years Later*, *supra* note 14, at 245 (“It is a common misconception that all the Federal Circuit judges were first engineers or scientists. In fact, only four of the twenty judges in [Professor Moore's 2005] study had some sort of scientific background . . .”).

179. See *infra* Part III.A.3.c for a detailed discussion of these results.

versal rates are caused in any large part by the nature of the Federal Circuit judges themselves.

C. Relative Workloads Between the Federal Circuit and Other Circuits

Another possible reason for the relatively high reversal rates of the Federal Circuit, particularly in patent cases, may be that the Federal Circuit’s workload is significantly less than that of other circuits.

Table 15 below depicts the number of cases pending per active judge for each of the circuits involved in this study.

Table 15: Relative Workloads Between the Federal Circuit and Other Circuits

Circuit	Cases Pending (2008) ¹⁸⁰	No. of Active Judges ¹⁸¹	Cases Pending Per Active Judge
2d	5678	13	436.8
5th	4936	17	290.4
7th	2255	11	205.0
9th	17,001	28	607.2
OVERALL NON-FED	29,870	69	432.9
Federal	947	12	78.9

As this table shows, the average number of cases pending per judge for the regional circuits in 2008 was 426.7, whereas for the Federal Circuit it was only 78.9. In other words, judges of the representative regional circuits studied have a much heavier caseload than Federal Circuit judges. This lighter caseload may provide Federal Circuit judges with time to delve more deeply into particular issues and give less deference to district court decisions than do their regional circuit counterparts. Thus, the Federal Circuit’s relatively light workload may

180. The values for the Second, Fifth, Seventh, and Ninth Circuits came from *Table B-1, supra* note 107. The value for the Federal Circuit comes from *Table B-8: U.S. Court of Appeals for the Federal Circuit—Appeals Filed, Terminated, and Pending During the Twelve-Month Period Ended September 30, 2009*, U.S. CT. APPEALS FOR FED. CIR., <http://www.cafc.uscourts.gov/images/stories/the-court/statistics/b08sep09.pdf> (last visited Jan. 22, 2012).

181. These values represent the number of judges authorized for each circuit by law. 28 U.S.C. § 44 (2006). Thus, for a circuit with judicial vacancies—a common occurrence—the number of cases pending per active judge may actually be higher than the value given in Table 15. *See supra* Table 15. But this data nonetheless allows for a useful, though somewhat rough, comparison.

contribute to its seeming judicial hyperactivity, particularly in patent law, the area of law for which the Federal Circuit is best known.

Conclusion

The results of this study tend to confirm the hypothesis that the Federal Circuit is more judicially hyperactive than other circuits, particularly in patent cases. The first part of this study showed that the overall reversal rate of the Federal Circuit—both unadjusted and adjusted for summary affirmances—was statistically significantly greater than the overall reversal rate of the representative regional circuits taken as an aggregate. Additionally, for all but one standard of review, the reversal rates of the Federal Circuit were statistically significantly greater than the corresponding reversal rates of the representative regional circuits treated as an aggregate. These results empirically confirm that the Federal Circuit is more judicially hyperactive than other circuits.

In addition, for all but one standard of review, the reversal rates of the Federal Circuit in patent cases were significantly greater than in non-patent cases. These results tend to show that the Federal Circuit is more judicially hyperactive in patent cases than in non-patent cases.

In addition, the reversal rates of the Federal Circuit in patent cases were significantly greater than the reversal rates of the regional circuits, but the reversal rates of the Federal Circuit in non-patent cases were not significantly greater than the reversal rates of the regional circuits, with just one exception. These results tend to indicate that the Federal Circuit in patent cases is more judicially hyperactive than the regional circuits, but that the Federal Circuit in non-patent cases is not more judicially hyperactive than the regional circuits.

The results of the second part of the study also indicate that the reversal rate of the Federal Circuit is greater than those of the regional circuits. For each of the three example procedural postures examined in the second part of this study—summary judgment, JMOL, and preliminary injunction—the reversal rate of the Federal Circuit was significantly greater than that of the representative regional circuits taken as an aggregate. These results again tend to empirically confirm that the Federal Circuit has engaged in a greater degree of judicial hyperactivity than the representative regional circuits studied.

At least two follow-up studies might helpfully add to the results of this study. One such study would analyze whether judicial hyperactiv-

ity in the Federal Circuit is judge-dependent.¹⁸² Perhaps the reversal rates of only particular judges are greater than that of other circuits, and such a study would reveal this fact if it exists. Another possible follow-up study would compare the reversal rates in patent cases of particular districts with reversal rates of that regional circuit court only, rather than comparing them with the representative regional circuits as a whole, as this study did. Such a study might show whether the Federal Circuit reverses those districts any more or less than those districts' regional circuits do.

In conclusion, this study tends to confirm what practitioners, judges, and commentators have suspected for a long time—that the Federal Circuit is more judicially hyperactive than other circuits. As warned by William C. Rooklidge and Matthew F. Weil, judicial hyperactivity tends to “increase unpredictability and uncertainty, erode confidence in the courts, and ultimately encourage more unmeritorious appeals.”¹⁸³ The purpose of this study was to use empirical data to either confirm or refute the widely held belief that the Federal Circuit is a judicially hyperactive court. This study empirically demonstrates that this widely held belief is likely true. Therefore, this study replaces mere anecdotal evidence with quantitative empirical evidence that the Federal Circuit is a judicially hyperactive court.

182. The author is currently pursuing this follow-up study.

183. Rooklidge & Weil, *supra* note 2, at 752.

Appendix A: Raw Data—Overall Reversal Rates and Reversal Rates for Particular Standards of Review

Tables 16–22 below show the raw data gathered for each circuit studied. Each table shows for each standard of review (de novo, clear error, substantial evidence, reasonable juror, and abuse of discretion) the number of issues affirmed, reversed, vacated, and affirmed in part or reversed in part. Each table also shows totals for each of these categories.

Table 16: Raw Data—Second Circuit

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	191	10	21	4	226
Clear error	35	1	9	1	46
Substantial evidence/ Reasonable juror	166	1	6	2	175
Abuse of discretion	137	3	11	0	151
OVERALL	529	15	47	7	598

Table 17: Raw Data—Fifth Circuit

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	163	9	14	4	190
Clear error	97	1	9	0	107
Substantial evidence/ Reasonable juror	30	3	1	1	35
Abuse of discretion	111	2	3	0	116
OVERALL	401	15	27	5	448

Table 18: Raw Data—Seventh Circuit

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	65	5	5	1	76
Clear error	39	3	5	0	47
Substantial evidence/ Reasonable juror	22	2	3	0	27
Abuse of discretion	36	4	4	2	46
OVERALL	162	14	17	3	196

Table 19: Raw Data—Ninth Circuit

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	284	41	26	16	367
Clear error	90	1	5	0	96
Substantial evidence/ Reasonable juror	142	2	8	3	155
Abuse of discretion	195	19	20	2	236
OVERALL	711	63	59	21	854

Table 20: Raw Data—Federal Circuit (All Cases)

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	109	37	21	6	173
Clear error	20	5	1	1	27
Substantial evidence/ Reasonable juror	49	1	6	1	57
Abuse of discretion	83	7	12	2	104
OVERALL	261	50	40	10	361

Table 21: Raw Data—Federal Circuit (Patent Cases Only)

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	54	26	13	5	98
Clear error	14	3	0	0	17
Substantial evidence/ Reasonable juror	14	1	3	1	19
Abuse of discretion	24	4	8	1	37
OVERALL	106	34	24	7	171

Table 22: Raw Data—Federal Circuit (Non-Patent Cases Only)

Standard of Review	Issues Aff'd	Issues Rev'd	Issues Vacated	Issues Aff'd in Part	TOTAL
De novo	55	11	8	1	75
Clear error	6	2	1	1	10
Substantial evidence/ Reasonable juror	35	0	3	0	38
Abuse of discretion	59	3	4	1	67
OVERALL	155	16	16	3	190

Appendix B: Raw Data—Reversal Rates for Several Examples of Procedural Postures

Tables 23–25 below show the raw data for the cases examined involving summary judgment, JMOL, and preliminary injunction, respectively.

Table 23: Raw Data—Summary Judgment

Circuit	Total Cases Examined	Affirmed	Reversed	Vacated	Reversed in Part
Federal Circuit	40	23	4	2	11
Non-Fed Circuits (TOTAL)	355	274	24	21	35
2d Cir.	219	165	11	19	23
5th Cir.	47	41	4	0	2
7th Cir.	44	37	2	1	4
9th Cir.	45	31	7	1	6

Table 24: Raw Data—JMOL

Circuit	Total Cases Examined	Affirmed	Reversed	Vacated	Reversed in Part
Federal Circuit	65	31	14	3	17
Non-Fed Circuits (TOTAL)	256	197	34	4	21
2d Cir.	48	38	5	2	3
5th Cir.	99	80	12	1	6
7th Cir.	37	26	7	0	4
9th Cir.	72	53	10	1	8

Table 25: Raw Data—Preliminary Injunction

Circuit	Total Cases Examined	Affirmed	Reversed	Vacated	Reversed in Part
Federal Circuit	39	20	4	12	3
Non-Fed Circuits (TOTAL)	353	231	50	48	24
2d Cir.	91	61	9	15	6
5th Cir.	55	34	1	15	5
7th Cir.	42	25	7	9	1
9th Cir.	165	111	33	9	12