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RECONCEIVING THE PATENT ROCKET DOCKET: AN EMPIRICAL STUDY OF INFRINGEMENT LITIGATION 1985–2010

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ABSTRACT

This Article presents the first survival model for systematically identifying and comparing United States district courts as patent rocket docketers, and for examining related trends in patent litigation. The conventional wisdom of rocket docket status in a judicial district tends to rely on average case disposition times and the availability of court rules for patent cases, as well as anecdotal information about well-known jurists with experience in patent adjudication.

By comparison, this Article approaches rocket docketers through a quantitative investigation of recent historical trends in patent case filings as well as through market concentration analysis at the district court and circuit court levels of patent case filings. Most significantly, the Article provides an indexed ranking of district courts derived from survival analysis of case dispositions, marginal pendency, and court capacity based on data from over 44,000 patent infringement cases litigated during the 1985–2010 period.

The results confirm that the currently prominent rocket docketers are, indeed, the Eastern District of Texas, the Eastern District of Virginia, and—most recently—the Western District of Wisconsin. The results also suggest, *inter alia*, that the Middle District of Florida and the Western District of Washington are emerging patent rocket docketers. The Article concludes with an outlook for future study on the differential effect of technology classes on case disposition speed within this framework.

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INTRODUCTION

The conventional wisdom of patent litigation has it that certain judicial districts are preferable venues for speedy disposition and even for outcomes that disproportionately favor certain types of litigants.¹ These so-called “rocket dockets” invite considerable strategic behavior from patent owners, infringers, and litigators, and they are increasingly the subject of analysis by legal scholars as well as legal practitioners.²

However, the definitional question of *what is a rocket docket* remains an elusive mixture of basic descriptive statistics such as average case disposition times or median time-to-trial, binary measures such as the existence—or not—of local court rules for trying patent cases, and anecdotal information about well-known jurists who are experienced in adjudicating patent cases.³

To be sure, these measures are important: beyond speedy disposition, rocket docket judicial districts are frequently characterized by judges who are well-versed in patent law and by local court rules that facilitate the efficient management of litigation, as well as relatively educated jury pools who can grasp the technical issues involved in patent suits.⁴

Yet due to the sometimes descriptively limited value of these criteria, much of the current discussion surrounding patent rocket dockets takes as a given the existence of certain such districts.⁵ The result is a focus on resulting behaviors such as forum shopping by litigants and doctrinal specialization by judges.⁶

This Article proposes a more nuanced framework for identifying and comparing the existence and emergence of rocket dockets in patent litigation.⁷ Most significantly, the Article proposes a survival analysis-based ranking of district courts based on case disposition speed, marginal pendency, and court capacity based on data from over 44,000 patent infringement cases litigated during the 1985–2010 period.⁸

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¹ See *infra* Part I.A.

² *Id.*

³ *Id.*

⁴ See *infra* Part I.B.

⁵ See *infra* Part I.A.

⁶ See *infra* Part I.C.

⁷ See *infra* Part I.A.

⁸ See *infra* Part I.B.

Also discussed are the results of a quantitative investigation into recent historical trends in patent case filings across the United States, as well as of a market concentration analysis of patent case filings at the district court and circuit court levels.⁹

The results confirm that the three principal rocket dockets are, as widely recognized, the Eastern District of Texas, the Eastern District of Virginia, and—most recently—the Western District of Wisconsin.¹⁰ The results also suggest, *inter alia*, that the Middle District of Florida and the Western District of Washington are rising patent rocket dockets. The Article concludes with an outlook for future study on the differential effect of technology classes on case disposition speed within this framework.¹¹

I. ROCKET DOCKETS IN PATENT LAW

A. Conventional Wisdom and the Big Three Patent Fora

1. Alexandria, Virginia

Usage of the term “rocket docket” dates back to the procedural reforms of Judge Albert Vickers Bryan, Jr., who sat on the United States District Court for the Eastern District of Virginia in Alexandria.¹² The status of the Eastern District of Virginia as a general rocket docket has subsequently extended to its recognition as a rocket docket for patent litigation as well, particularly due to the court’s proximity to relevant federal agencies such as the United States Patent and Trademark Office.¹³

The perceived mechanism by which the Eastern District of Virginia achieves its patent litigation efficiencies is the active role that judges take in case management.¹⁴

⁹ *Id.*

¹⁰ See *infra* Part I.A.

¹¹ See *infra* Part II.B.

¹² Jerry Markon, *A Double Dose of Molasses in the Rocket Docket*, WASH. POST, Oct. 3, 2004, at C04, available at <http://www.washingtonpost.com/wp-dyn/articles/A3007-2004Oct2.html>; Heather Russell Koenig, *The Eastern District of Virginia: A Working Solution for Civil Justice Reform*, 32 U. RICH. L. REV. 799, 800 (1998).

¹³ See Dabney J. Carr IV & Robert A. Angle, *Litigating Patent Infringement Cases in the “Rocket Docket” of the Eastern District of Virginia*, 22 INTELL. PROP. & TECH. L.J. 14, 14 (2010); Yan Leychkis, *Of Fire Ants and Claim Construction: An Empirical Study of the Meteoric Rise of the Eastern District of Texas as a Preeminent Forum for Patent Litigation*, 9 YALE J.L. & TECH. 193, 210 (2007); Troutman Sanders L.L.P., Dabney Carr, *Troutman Sanders Announces Eastern District of Virginia Litigation Team*, VA. IP LAW (Feb. 14, 2011), <http://www.virginiaiplaw.com/2011/02/articles/civil-procedure/troutman-sanders-announces-eastern-district-of-virginia-litigation-team/> [hereinafter Carr, *Litigation Team*]; Donald P. Arnava & Louis D. Victorino, *Litigation or ADR: Choosing the Right Dispute Resolution Process*, 8 BRIEFING PAPERS 1, 3 (2009).

¹⁴ See R. Lawrence Dessem, *Judicial Reporting Under the Civil Justice Reform Act: Look, Mom, No Cases!*, 54 U. PITT. L. REV. 687, 711 (1993); Jeffrey Kelley, *A District Court that’s in High Demand*, RICH. TIMES DISPATCH, June 25, 2006, at D-1.

Such involvement includes, e.g., the early imposition of detailed deadlines for discovery, the predetermination of the number of witnesses allowed to testify at trial, and the establishment of due dates for exhibits, as well as strict enforcement of these rules.¹⁵

Enforcement, in particular, is a watchword of the Eastern District of Virginia, with an understanding among attorneys that “[officers of the court] don’t mess around. They don’t play games. They don’t like people who do.”¹⁶ This culture of procedural discipline reflects a legacy of Judge Bryan himself, about whom it was said that “the only grounds for a delay were a death in the family—your own.”¹⁷ Far from hyperbole, Judge Bryan’s reported standard for continuances or other delays has survived largely intact, for “if there is a deadline in there, you can’t just walk in and say ‘something’s come up.’”¹⁸ Indeed, “the only emergency [the Eastern District judges] listen to is a death in the family.”¹⁹

Stringently enforced as they are, the deadlines of the Eastern District of Virginia are themselves, of course, swift: civil cases are tried within one year of filing of the complaint “almost without exception.”²⁰ As a result, the effective prosecution or defense of patent litigations in the district tends to require that “a party must treat the entire pretrial phase as it would the last three months of a typical patent case.”²¹ It is expected that litigants will allocate trial-sized teams from the outset, as the high volume of work and the limited period of time does not permit incrementalism.²² Moreover, the frequency of multiple deposition tracks requires parties to assign several attorneys each with a full grasp of the litigation.²³

Unsurprising to attorneys who practice there, most cases in the Eastern District of Virginia settle. The court has implemented an “effective, judge-driven settlement

¹⁵ Kelley, *supra* note 14, at D-1; Seongkun Oh, *Legal Update: Markman v. Westview Instruments, Inc.*, 2 B.U. J. SCI. & TECH. L. 20, 37 (1996), Nancy Olson, *Does Practice Make Perfect? An Examination of Congress’s Proposed District Court Patent Pilot Program*, 55 UCLA L. REV. 745, 760 n.63 (2008).

¹⁶ Kelley, *supra* note 14, at D-1 (quoting Kris R. Keeney, an intellectual property attorney from the Richmond area who has tried several cases in the district); Olson, *supra* note 15, at 763, 760 n.63.

¹⁷ Markon, *supra* note 12 (quoting Edward B. MacMahon, Jr., a defense attorney); Olson, *supra* note 15, at 760 n.63; *see also* Koenig, *supra* note 12, at 805 (quoting a Virginia lawyer saying, “short of bleeding to death in the courtroom, you are not going to get a continuance.”).

¹⁸ Kelley, *supra* note 14, at D-1 (quoting Rob Brooke, an intellectual property attorney from the Richmond office of Troutman Sanders who has experience litigating in the district); *see* Hon. T.S. Ellis III, *Quicker and Less Expensive Enforcement of Patents: United States Courts*, 5 CASRIP SYMP. PUBL’N SERIES 11, 12–14 (1999), *available at* <http://www.law.washington.edu/casrip/symposium/Number5/pub5atcl2.pdf> (noting an example of a case where a continuance was granted for one day due to an attorney suffering a heart attack).

¹⁹ Kelley, *supra* note 14, at D-1.

²⁰ Robert G. Sterne & Robert F. Redmond, *Surviving the Rocket Docket*, DAILY DEAL, Mar. 13, 2006, *available at* 2006 WLNR 4083753 (discussing pretrial practice); Koenig, *supra* note 12, at 800 (citing the median time from filing to conclusion of a case is four months).

²¹ *See* Sterne & Redmond, *supra* note 20.

²² *Id.*; *see* Beverley B. Goodwin & Laurence H. Pretty, *How to Handle Litigation of a Patent—Part 1*, in HOW TO HANDLE BASIC PATENT PROBLEMS 205, 236 (PLI Pats., Copyrights, Trademarks, & Literary Prop. Course, Handbook Ser. No. G4-3888, 1992), WL, 343 PLL/Pat 205 (noting the difficulties in trial preparations).

²³ *See* Sterne & Redmond, *supra* note 20.

program.”²⁴ In particular, the appointment of magistrate judges to mediate cases is understood to give the court “a keen sense of each parties’ weaknesses, which quickly dissipates the usual posturing.”²⁵ Notably, settlement opportunities remain even after a verdict has been delivered.²⁶

The sum of these institutional characteristics of the Eastern District of Virginia also produces extrinsic effects commonly associated with rocket dockets. One effect is merely descriptive of the existence of rocket dockets themselves: the rise of expert practitioners who specialize in litigating before judges in the district,²⁷ the establishment by law firms of litigation teams specific to the district,²⁸ and the proliferation of legal practice education focusing on procedures and nuances of the district.²⁹

Another effect is normative—and, indeed, is a frequent subject of expert discussion surrounding the Eastern District of Virginia—the effect of procedural rocket docket practice on substantive litigation outcomes.³⁰ For example, defendants are often perceived as being disadvantaged by the process, as patentees are free to gather information and map out strategy before filing suit while defendants are bound to a taxing procedural timeline.³¹

Accordingly, practitioner expertise, law firm specialization, and legal education also tend to align themselves along, e.g., the stance of a plaintiff-patentee preparing

²⁴ *Id.* (discussing post-trial settlement); see Ellis, *supra* note 13, at 545 (commenting on the success of the magistrate judges in the Eastern District of Virginia); Carr, *supra* note 13, at 14 (citing several headline worthy settlements in the Eastern District of Virginia); see, e.g., *MercExchange, L.L.C. v. eBay, Inc.*, 500 F. Supp. 2d 556, 572 (E.D. Va. 2007) (explaining that the plaintiff used its patent as a sword rather than a shield by its way of operating by threatening litigation).

²⁵ See Sterne & Redmond, *supra* note 20; Ellis, *supra* note 13, at 543, 545.

²⁶ See Sterne & Redmond, *supra* note 20; see also Goodwin & Pretty, *supra* note 22, at 224 (detailing the practice of post-verdict settlement).

²⁷ See McGuire Woods, *Brian Riopelle to Speak at “Rocket Docket” Seminar*, MCGUIRE WOODS (Dec. 8, 2010), <http://www.mcguirewoods.com/news-resources/item.asp?item=5272>.

²⁸ See Carr, *Litigation Team*, *supra* note 13.

²⁹ See Dabney Carr & Robert Angle, *Litigating Patent Infringement Cases in the Rocket Docket—Pre-Filing Concerns for the Plaintiff-Patentee*, VA. IP LAW (Aug. 2, 2010), <http://www.virginiaiplaw.com/2010/08/articles/patent-litigation/litigating-patent-infringement-cases-in-the-rocket-docket-pre-filing-concerns-for-the-plaintiffpatentee/> [hereinafter Carr & Angle, *Pre-Filing Concerns*]; Dabney Carr & Robert Angle, *Litigating Patent Infringement Cases in the Rocket Docket—How the Defendant-Accused Infringer Should Respond*, VA. IP LAW (Sept. 1, 2010), <http://www.virginiaiplaw.com/2010/09/articles/patent-litigation/litigating-patent-infringement-cases-in-the-rocket-docket-how-the-defendantaccused-infringer-should-respond/> [hereinafter Carr & Angle, *Infringer Should Respond*]; Dabney Carr, *Litigating Patent Infringement Cases in the Eastern District of Virginia—Markman Hearings*, VA. IP LAW (Oct. 15, 2010), <http://www.virginiaiplaw.com/2010/10/articles/patent-litigation/litigating-patent-infringement-cases-in-the-eastern-district-of-virginia-markman-hearings/> [hereinafter Carr, *Markman Hearings*].

³⁰ See Catherine Rajwani, *Controlling Costs in Patent Litigation*, 16 J. COM. BIOTECH. 266, 267 (2010).

³¹ See *id.*; Carr & Angle, *supra* note 13, at 14; see also Thomas F. Fleming, *An Overview of Significant Patent Infringement Cases*, in RECENT TRENDS IN PATENT INFRINGEMENT LAWSUITS 7, 9 (Aspatore, 2010) (noting that defendants typically find the venue of the Eastern District of Virginia a challenge).

for litigation³² or the stance of a defendant-accused infringer responding to patent claims in order to “avoid putting itself behind the [Eastern District of Virginia] eight ball and turn the tide in its favor.”³³

2. *Marshall, Texas*

In a manner similar to Judge Bryan’s transformation of the Eastern District of Virginia, the United States District Court for the Eastern District of Texas also initially rose to prominence as a rocket docket through the efforts and procedural reforms of one person, Judge T. John Ward.³⁴ It was Judge Ward who, in 2001, initiated adoption of specialized patent rules for his Marshall Division of the Eastern District of Texas, rules that were subsequently adopted in 2005 by judges district-wide.³⁵

The response from the patent litigation bar was swift and remarkable: up nearly eightfold from thirty-two patent case filings in 2002, the Eastern District of Texas saw 234 patent cases filed in 2006.³⁶ The 2007 fiscal year saw the district receive 358 patent case filings, the highest of any federal district in the country.³⁷

As notable, in the Eastern District of Texas, has been the expansion of perceived patent expertise beyond Judge Ward in Marshall to include Magistrate Judge Chad Everingham, also of Marshall and a former law clerk of Judge Ward, and Judge Leonard Davis of the Tyler Division,³⁸ as well as retiring Chief Judge David Folsom of the Texarkana Division.³⁹

³² See, e.g., Carr & Angle, *Pre-Filing Concerns*, *supra* note 29 (focusing on the plaintiff’s strategic perspective in advance of patent litigation).

³³ See, e.g., Carr & Angle, *Infringer Should Respond*, *supra* note 29 (focusing on the defendant’s strategic perspective during patent litigation).

³⁴ Mary Alice Robbins, *Eastern District Rocket Docket Decelerates in Marshall Division*, 24 TEXAS LAWYER, Aug. 18, 2008, at 1, available at <http://www.law.com/jsp/tx/PubArticleFriendlyTX.jsp?id=1202423817064>; see Allen Pusey, *Marshall Law: Patent Lawyers Flock to East Texas Court for its Expertise and ‘Rocket Docket’*, DALLAS MORNING NEWS, Mar. 26, 2006, at 1D (noting that Judge Ward decided to fashion a system that would attract even more intellectual property litigation in the Eastern District of Texas); Leychkis, *supra* note 13, at 207 (describing Judge Ward as a “Rock Star” and one of the fifty most influential people in intellectual property).

³⁵ Robbins *supra* note 34; Harvard Law Review Association, *Patent Law—Forum Selection—Federal Circuit Heightens Standard for Plaintiff Presence that Will Weigh Against Transfer*.—In re Zimmer Holdings, Inc., 609 F.3d 1378 (Fed. Cir. 2010), 124 HARV. L. REV. 632, 632 n.3 (2010).

³⁶ Sam Davis, *Patent Litigation Affects Intermediate Bus Architecture Converters*, 37 POWER ELEC. TECH. 43, 43 (Feb. 2011); see Leychkis, *supra* note 13, at 204–05 (noting that the number of patent cases filed in the Eastern District of Texas steadily increased between the years 2002 and 2006); Michael C. Smith, *Rocket Docket: Marshall Court Leads Nation in Hearing Patent Cases*, 69 TEX. B.J. 1045, 1046 (2006) (noting that the Eastern District of Texas is one of the most active courts hearing patent cases).

³⁷ Robbins, *supra* note 34, at 11; see Shawn G. Hansen, *Perspectives on U.S. Patent Reform: The Next Steps are Crucial*, in UNDERSTANDING PATENT REFORM IMPLICATIONS 141, 146, (Aspatore, 2009).

³⁸ Robbins, *supra* note 34, at 1; see Hon. John Love et al., *13th Annual Eastern District of Texas Bench-Bar Conference: Patent Litigation Update*, 13 SMU SCI. & TECH. L. REV. 49, 49 (2009) (noting

Nevertheless, while the reputation as a rocket docket of the Eastern District of Virginia has been largely institutional and tied to procedural stringency,⁴⁰ with only incidental effects on substantive litigation outcomes,⁴¹ the reputation of the Eastern District of Texas in this regard has frequently carried an explicit badge of litigant bias. Indeed, legal practice experts attribute the high volume of patent case filings in the Eastern District of Texas to “so many patentees fil[ing] suit there based on the perception that the Eastern District is pro-patentee.”⁴² The Marshall Division in particular, where Judge Ward sits, also has a reputation for juries who tend to favor plaintiffs, returning verdicts in favor of plaintiffs in seventy-eight percent of the patent cases that go to trial.⁴³

Moreover, for much of the history as a rocket docket of the Eastern District of Texas, the perceived bias of the Eastern District has been made even more acute by the refusal of judges, notably Judge Ward, to grant defendants’ motions for a change of venue, citing the importance of a plaintiff’s choice of forum.⁴⁴ Congress itself has tried on multiple occasions to curb such forum-restrictive judicial doctrine,⁴⁵ and some perceive that these legislative efforts are a specific response to the Eastern District of Texas and similar rocket dockets.⁴⁶

Compounding the perception of pro-patentee bias is the magnitude of several corresponding litigation outcomes. For example, in *Saffran v. Johnson & Johnson*,⁴⁷ a Marshall jury this February returned a judgment of \$482 million for plaintiff-patentee Dr. Bruce Saffran after two hours of deliberation.⁴⁸ A different jury in the

the status of time to trial of Judges Everingham, Davis, and Folsom); see generally Leychkis, *supra* note 13, at 205–08 (providing a brief background of Judges Ward, Clark, Davis, and Folsom).

³⁹ See John Council, *EDTX Chief Judge David Folsom Says He’ll Retire Next Year*, TEXAS LAWYER (Mar. 23, 2011, 3:22 PM), http://texaslawyer.typepad.com/texas_lawyer_blog/2011/03/us-district-judge-david-folsom-says-hell-retire-next-year.html.

⁴⁰ See *supra* notes 14–23 and accompanying text.

⁴¹ See *supra* notes 30–33 and accompanying text.

⁴² Robbins, *supra* note 34, at 11 (quoting Ted D. Lee, past chairman of the State Bar of Texas Intellectual Property Section and a shareholder in the San Antonio firm of Gunn & Lee); see, e.g., Donald R. Dunner, *A Retrospective of the Federal Circuit’s First 25 Years*, 17 FED. CIR. B.J. 127, 130 (2007) (noting the perception that the Eastern District of Texas is pro-patentee); Smith, *supra* note 36, at 1046 (explaining that attorneys often bring cases in this district because of its speed, expertise on the part of the judges, and juries that are interested in the property rights that a patent represents); Jeanne C. Fromer, *Patentography*, 85 N.Y.U.L. REV. 1444, 1446 (2010) (stating that it is a frequent observation that the Eastern District of Texas is a haven for plaintiffs prevailing in patent infringement cases).

⁴³ Davis, *supra* note 36, 43; Kevin R. Davidson, *Retooling Patents: Current Problems, Proposed Solutions, and Economic Implications for Patent Reform*, 8 HOUS. BUS. & TAX L.J. 425, 450 n.185 (2008) (noting that the nationwide rate is fifty-nine percent).

⁴⁴ Robbins, *supra* note 34, at 11.

⁴⁵ See *id.* (quoting Doug Cawley, a patent litigator and shareholder in the Dallas firm of McKool Smith).

⁴⁶ *Id.*

⁴⁷ *Saffran v. Johnson & Johnson*, No. 2:07-CV-451, 2011 U.S. Dist. Lexis 34858 (E.D. Tex. Mar. 31, 2011).

⁴⁸ *Court Report: Jury Awards Doctor \$482M in Suit Versus J&J/Cordis*, MED. DEVICE DAILY, Feb. 1, 2011; *Texas Jury Awards N.J. Doctor \$482 Million in Stent Patents Suit Against Cordis*, WL J. MED. DEVICES, Feb. 21, 2011, available at

same court previously returned a comparable infringement judgment of \$431.9 million in February 2008 for Dr. Saffran against Boston Scientific, an award that Judge Ward subsequently increased to \$501 million before Boston Scientific agreed in 2009 to settle the case for \$50 million.⁴⁹ New Jersey is the home of both Dr. Saffran and Johnson & Johnson, Florida the home of Cordis Corp., a subsidiary of Johnson & Johnson, and Massachusetts the home of Boston Scientific.⁵⁰

In another high-profile example, *i4i Ltd. Partnership v. Microsoft Corp.*,⁵¹ Judge Davis granted the plaintiff-patentee, i4i, a judgment of \$200 million for infringement of its extensible markup language software tools, additional damages of \$90 million, and an injunction against defendant-infringer Microsoft from continued sales pending excision of the infringing feature from Microsoft's software products.⁵² Media coverage of the case as it progressed through subsequent review, first at the Court of Appeals for the Federal Circuit and then to a final decision this year at the Supreme Court, has duly noted its origin in the Eastern District of Texas and that court's reputation as a rocket docket.⁵³

Notably, the bias in favor of strong property rights implicated by the perceived pro-patentee bias of the Eastern District of Texas has not necessarily coincided with a corporation-friendly position, and it is not only large corporate defendants of significant financial and legal resources that have litigated successfully in the Eastern District of Texas.⁵⁴ Indeed, Dr. Saffran litigated as an individual against Johnson and Johnson and Boston Scientific,⁵⁵ and i4i as a small Toronto-based software concern against Microsoft.⁵⁶

http://newsandinsight.thomsonreuters.com/Legal/News/2011/02_-

[_February/Texas_jury_awards_N_J_doctor_\\$482_million_in_stent_patents_suit_against_Cordis/](http://newsandinsight.thomsonreuters.com/Legal/News/2011/02_-February/Texas_jury_awards_N_J_doctor_$482_million_in_stent_patents_suit_against_Cordis/).

⁴⁹ *Court Report: Jury Awards Doctor \$482M in Suit Versus J&J/Cordis*, *supra* note 48; Saffran v. Boston Sci. Corp., No. 2-05-CV-547, 2008 U.S. Dist. Lexis 52557, at *5 (E.D. Tex. July 9, 2008).

⁵⁰ *Court Report: Jury Awards Doctor \$482M in Suit Versus J&J/Cordis*, *supra* note 48.

⁵¹ *i4i Ltd. P'ship v. Microsoft Corp.*, 670 F. Supp. 2d 568 (E.D. Tex. 2009).

⁵² *Id.* at 573, 596–98, 601; *Industry Urges Justice to 'Carefully Consider' i4i Case*, MED. DEVICE DAILY, Dec. 27, 2010.

⁵³ *See, e.g., id.* (referring to Judge Davis as a judge who “sits on the bench at the ‘rocket docket’ of the District Court for the Eastern District of Texas.”); Bobbie Johnson, *Microsoft Wins Battle to Keep Selling Word—For Now*, GUARDIAN (Sept. 4, 2009, 3:07 AM), <http://www.guardian.co.uk/technology/2009/sep/04/microsoft-word-injunction> (identifying the Eastern District of Texas court as being plaintiff friendly in patent, specifically rocket docket, cases); Eric Torbenson, *Patents' Tricky, Lucrative Terrain*, DALLAS MORNING NEWS, Jan. 31, 2010, at D01 (describing the district as a rocket docket that is “extremely plaintiff-friendly and a preferred venue to get patent claims through quickly.”).

⁵⁴ *See, e.g., i4i*, 670 F. Supp. 2d at 574; *see also* Davis, *supra* note 36, at 43 (noting that “both large and small companies wound up in the Federal District Court in Marshall.”).

⁵⁵ *See Industry Urges Justice to 'Carefully Consider' i4i Case*, *supra* note 52; Saffran v. Boston Sci. Corp., No. 2-05-CV-0547, 2007 U.S. Dist. Lexis 76135, at *2 (E.D. Tex. Sept. 28, 2007); Saffran v. Johnson & Johnson, No. 2:07-CV-0451, 2011 U.S. Dist. Lexis 106550, at *4–5 (E.D. Tex. Sept. 20, 2011).

⁵⁶ Cindy Waxer, *How to Sue Microsoft—and Win*, CNNMONEY.COM (Dec. 23, 2009), http://money.cnn.com/2009/12/23/smallbusiness/i4i_microsoft_lawsuit/index.htm; *see* Matt Hartley, *U.S. Supreme Court Sides with Toronto's i4i in Microsoft Patent Battle*, FIN. POST (June 9, 2011), <http://business.financialpost.com/2011/06/09/u-s-supreme-court-sides-with-torontos-i4i-in-microsoft-patent-suit/#more-61413>.

Still and all, the reputation, for better or worse, of the Eastern District of Texas is such that its particular status as a patent rocket docket finds mention even in media coverage of litigation not directly tied to patent law, such as a recent challenge in the Eastern District of Texas to those provisions of the Patient Protection and Affordable Care Act of 2010⁵⁷ (“PPACA”), which prohibit the establishment or expansion of physician-owned hospitals and which require mandatory enrollment in health insurance plans.⁵⁸ As a result, the deliberately cultivated patent expertise of judges and the favor that plaintiffs and patentees reportedly enjoy among judges and juries make the Eastern District of Texas a markedly different species of rocket docket from the trans-substantively efficient, purportedly outcome-neutral practice in the Eastern District of Virginia. Between these poles lies a third rocket docket that has taken lessons from both Alexandria and Marshall.

3. *Madison, Wisconsin*

In the wake of transformations in the Eastern District of Virginia to broadly expedited case management and further to patent specialization, and of the wholesale emergence in the Eastern District of Texas of a perceivedly patentee-friendly and subject-expert bench, a third patent rocket docket has also arisen in the United States District Court for the Western District of Wisconsin. True to form, that district has “earned its reputation as a sophisticated venue for patent litigation over the years due to its smart judges, substantial number of filed patent cases, and local rules.”⁵⁹ Indeed, perceptions of the Western District of Wisconsin regularly invite overt comparison to the Eastern District of Virginia and the Eastern District of Texas.⁶⁰

Accordingly, the Western District of Wisconsin has seen its own share of high-profile litigations, including recent ongoing infringement disputes between Apple and Motorola over several of Apple’s touch-screen and multi-touch patents.⁶¹ Although the competitive strategy of Motorola proved to be “prescient about Apple suing it” while “wrong about which patents Apple was going to try to [assert]” against it when

⁵⁷ *Phys. Hosp. of Am. v. Sebelius*, No. 6:10-CV-277, 2011 U.S. Dist. Lexis 35491 (E.D. Tex. Mar. 31, 2011); The Patient Protection and Affordable Care Act of 2010, Pub. L. No. 111-148, 124 Stat. 119 (2010).

⁵⁸ *Phys. Hosp. of Am.*, 2011 U.S. Dist. Lexis 35491, at *5–6, 16–17; *Washington Roundup: CMS Flouts Congress, MedPAC with 2011 Fee Schedule for ASCs*, MED. DEVICE DAILY, Nov. 4, 2010.

⁵⁹ See Elizabeth P. Offen-Brown, *Forum Shopping and Venue Transfer in Patent Cases: Marshall’s Response to TS Tech and Genentech*, 25 BERKELEY TECH. L.J. 61, 72 n.74 (2010); Gatson Kroub, *Markman’s in Madison: An Endangered Species?*, LOCKE LORDE BISSELL & LIDDELL (Aug. 4, 2011), http://www.lockelord.com/files/Publication/6c1d8dc3-892a-46a0-9717-0eb17456c6cd/Presentation/PublicationAttachment/49c3e02e-602c-4934-8e51-15714d0923ea/2011-08_04th_MarkmanMadison_Kroub.pdf.

⁶⁰ See Offen-Brown, *supra* note 59, at 72; *Wisconsin: The New Texas*, LINUX GRAM (Mar. 31, 2008), <http://www.highbeam.com/doc/1G1-177171734.html>.

⁶¹ Complaint at ¶¶ 8–10, *Apple, Inc. v. Motorola, Inc.*, No. 10-CV-662 (W.D. Wis. Oct. 29, 2010); Maureen O’Gara, *Apple Sues Motorola & Android over Touch Patents*, SYS-CON MEDIA (Nov. 2, 2010), <http://iphone.sys-con.com/node/1595444>.

seeking a declaratory judgment, the character of the Western District of Wisconsin as a “plaintiff-leaning rocket docket like the Eastern District of Texas” was a shared premise between the parties.⁶²

Beyond its expeditious time-to-trial and patentee-friendly jury pools in surrounding Madison—echoing the perceived litigant biases of Marshall and Tyler—the Western District of Wisconsin also shares a low likelihood of full trial on the merits, with a disproportionately higher rate of summary judgments akin to the high rate of directed settlement in Alexandria and Richmond, Virginia.⁶³

Yet in one respect, its actual inception as a rocket docket, the Western District of Wisconsin parallels its sister districts.⁶⁴ Like Judge Bryan in Virginia and Judges Ward and Davis in Texas, Judges Barbara Crabb and John Shabaz, respectively appointed in 1979⁶⁵ and 1981,⁶⁶ “spent years building Wisconsin’s rocket docket reputation.”⁶⁷ That reputation, too, was initially built on short times-to-trial for each judge, nine months from filing for Judge Shabaz and fourteen months from filing for Judge Crabb,⁶⁸ and tight control of the docket from the outset of litigation.⁶⁹

B. What it Means to be a Rocket Docket

Difficult as it can be to document the conventional wisdom of *which are the patent rocket dockets*, it is, in some ways, even more elusive to demonstrate consensus upon what criteria are necessary and sufficient to identify one. Speed of adjudication alone cannot be dispositive, as such a measure would fail to account for selection problems such as a low number of patent filings resulting in a skewed

⁶² O’Gara, *supra* note 61.

⁶³ Sheri Qualters, *New Patent Rocket Docket Rises in Wis.; In-House Counsel; Area’s Educated Jury Pool, Local High-Tech Sector are Big Factors*, 30 NAT’L. L.J. 8, 8 (2008); see *Wisconsin: The New Texas*, *supra* note 60 (quoting, without citation, conclusions of the National Law Journal).

⁶⁴ Qualters, *supra* note 63, at 8.

⁶⁵ Biography of Hon. Barbara Brandiff Crabb, *History of the Federal Judiciary: Western District of Wisconsin*, FED. JUD. CTR., <http://www.fjc.gov/servlet/nGetInfo?jid=530&cid=179&ctype=dc&inststate=wi> (last visited Oct. 16, 2011).

⁶⁶ Biography of Hon. John C. Shabaz, *History of the Federal Judiciary: Western District of Wisconsin*, FED. JUD. CTR., <http://www.fjc.gov/servlet/nGetInfo?jid=2154&cid=179&ctype=dc&inststate=wi> (last visited Oct. 16, 2011).

⁶⁷ Matt Hrodey, *America’s Fastest Federal Court?*, TOPSTORIESMILWAUKEE.COM (June 30, 2010), <http://topstoriesmilwaukee.com/uncategorized/america’s-fastest-federal-court>; Jane Pribek, *Will Western District of Wis. Judge Shabaz’s Move to Senior Status Slow ‘Rocket Docket’?*, WIS. L.J., Oct. 22, 2007, available at <http://wislawjournal.com/2007/10/22/will-shabaz8217s-move-to-senior-status-slow-down-8216rocket-docket8217063/>.

⁶⁸ Joseph T. Miotke & Marshall J. Schmitt, *Patent Litigation in a Rocket Docket after Markman II: After Liftoff—No Turning Back*, Presentation at the Ocean Tomo Auction 15–16, (Oct. 2008) (speech available at <http://www.michaelbest.com/events/EventDetailMB.aspx?xpST=EventDetail&event=968>; see Jack Zemlicka, *‘Rocket Docket’ May Lose Some Thrust with New Judges*, WISC. L.J., (May 4, 2009), <http://wislawjournal.com/2009/05/04/8216rocket-docket8217-may-lose-some-thrust-with-new-judges/>.

⁶⁹ See Pribek, *supra* note 67.

average time-to-trial, or for a particularly simple technology at issue in a given case resulting in an unrepresentatively fast judgment.

Nor, similarly, can the mere existence of specialized local court rules to facilitate efficient patent case management be dispositive. For example, despite its high volume of patent case filings, the Northern District of California is not traditionally recognized as a national patent rocket docket, but it was the patent rules of the Northern District of California which Judge Ward, in 2001, adopted and modified to launch the reputation of the Eastern District of Texas.⁷⁰

Rather, quantitative criteria such as speed of adjudication and high filing volume as well as qualitative ones such as specialized patent rules and judicial expertise must cumulatively be regarded as necessary but not sufficient to make a rocket docket. Moreover, different combinations of these criteria turn out different kinds of rocket dockets, be they neutral as to outcome or favorable to particular litigants or procedural postures.

A 2008 study by PricewaterhouseCoopers found, for example, that the Eastern District of Virginia and the Western District of Wisconsin, had the lowest times-to-trial in the country—less than one year—but also that the time-to-trial had relatively no impact on the success rate and a significant impact on the magnitude of damages awarded.⁷¹ The study also noted marked differences by technology sector, with telecommunications and medical device patents leading in the volume of infringement litigation filings.⁷²

By comparison, however, the Eastern District of Texas has in recent years been seen as a victim of its own popularity as a patent rocket docket, largely given its perceived pro-patentee bias,⁷³ a perception that does not embrace, e.g., the Eastern District of Virginia. Indeed, the PricewaterhouseCoopers study—which compared federal judicial districts with respect to their favorability to patent holders—considered time-to-trial, median damages awarded, summary judgment win rates, trial win rates, ultimately ranking the Eastern District of Texas sixth overall.⁷⁴ The same study confirmed the Eastern District of Virginia as the best district for patent holders, but also edged out the Western District of Wisconsin, instead ranking the

⁷⁰ Robbins, *supra* note 34, at 1, 11. To be sure, efficient case management and notable judicial expertise in the Northern District of California may invite its high volume of patent litigations, but this relationship remains separate from the court's *speed* of case resolution, a scale on which the Northern District does not meaningfully compete with the three major rocket dockets discussed here. See also Smith, *supra* note 36, at 1048.

⁷¹ See ARON LEVKO ET AL., A CLOSER LOOK, 2008 PATENT LITIGATION STUDY: DAMAGES AWARDS, SUCCESS RATES AND TIME-TO-TRIAL 12–13 (2008), available at http://www.pwc.com/en_US/us/forensic-services/assets/2008_patent_litigation_study.pdf; McKee, Voorhees & Sease, P.L.C., *Patent Litigation by the Numbers*, FILEWRAPPER.COM (June 11, 2008, 9:49 AM), <http://www.filewrapper.com/index.cfm/2008/6/11/Patent-litigation-by-the-numbers>. The overall success rate for a patent holder lingered around sixty percent regardless of the time-to-trial. But the amount of damages went from a median of \$2.9 million, if the time-to-trial was less than two years, to an average of \$10.5 million, if the time-to-trial was over four years. *Id.*

⁷² LEVKO ET AL., *supra* note 71, at 3.

⁷³ Robbins, *supra* note 34, at 1 (quoting Jeffrey Plies, an intellectual property litigator at the Austin office of Dechert); Andrei Iancu & Jay Chung, *Real Reasons the Eastern District of Texas Draws Patent Cases—Beyond Lore and Anecdote*, 14 SMU SCI. & TECH. L. REV. 299, 314 (2011).

⁷⁴ LEVKO ET AL., *supra* note 71, at 14.

Central District of California and the Eastern District of Pennsylvania in a tie for second place.⁷⁵

In a related turn, the study examined the effect of appeals to find that patentees were significantly more likely to appeal losses in a district court regardless of whether the adverse decision was based on a trial or on summary judgment.⁷⁶ The result of such an appeal, however, was more likely to result in a favorable reversal or modification if the appeal arose from a trial judgment than from a summary judgment.⁷⁷ Conversely, alleged infringers were more likely to successfully appeal a summary judgment to reversal than a trial verdict.⁷⁸

The study recognized the counterintuition of this trend, in that the appellate standard of review from a summary judgment is nominally more favorable to the plaintiff-appellant than is the standard of review from a trial judgment, and vice-versa.⁷⁹ As the data revealed, consistent with the multivariate criteria of a patent rocket docket, the trends of modification and reversal on appeal did not arise dispositively from any one of the factors considered—time-to-trial, median damages awarded, summary judgment win rates, trial win rates—but rather from two trans-substantive causes, claim construction changes and challenges to patent validity.⁸⁰

So it is that indicators such as average adjudication speed, special patent rules, and judicial expertise tend to produce a true patent rocket docket only when judges in the district are personally committed to enforcing stringent litigation calendars and to signaling the attractiveness of the forum to patent litigation. Indeed, the recent rise to national prominence of patent rocket dockets as such has corresponded to the role of judges in patent litigation.

C. Judicial Specialization and Forum Shopping

While the general and patent-specific rocket dockets have been decades in the making, their crystallization into essentially strategic fora coincided with the Supreme Court's 1996 decision in *Markman v. Westview Instruments, Inc.*,⁸¹ and the explosion in patent litigation at the turn of the twenty-first century.⁸² With particular regard to the effect of *Markman*, the Supreme Court's decision to charge district judges with construing patent claims as a matter of law made judges the *de facto* drivers of the "pace and course of a patent case."⁸³ In turn, the power of

⁷⁵ *Id.*; Iancu & Chung, *supra* note 73, at 305.

⁷⁶ LEVKO ET AL., *supra* note 71, at 16; *cf.* Iancu & Chung, *supra* note 73, at 308–09 (examining the relation of states by the rate to which they affirm (at least in part) patent cases).

⁷⁷ LEVKO ET AL., *supra* note 71, at 16.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.* at 17.

⁸¹ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996); *see* James Farrand et al., "Reform" Arrives in Patent Enforcement: *The Big Picture*, 51 IDEA 357, 412 n.226 (2011).

⁸² Miotke & Schmitt, *supra* note 68, at 7; *see* JAMES C. DUFF, JUDICIAL FACTS AND FIGURES: ADMIN. OFFICE OF THE U.S. COURTS 25 (2010), *available at* <http://www.uscourts.gov/uscourts/Statistics/JudicialFactsAndFigures/2009/alljudicialfactsandfigures.pdf>.

⁸³ Miotke & Schmitt, *supra* note 68, at 8–9.; *see* Smith, *supra* note 36, at 1048.

motivated trial jurists such as Judge Ward and Judge Shabaz and their contemporaries to cultivate rocket dockets has grown commensurately.

It also follows, however, that the judge-driven emergence of patent rocket dockets makes them vulnerable to the doctrinal biases of their progenitors, particularly as to the legal issue that most directly affects the choice of a distinctive and preferable forum: the propriety of venue.

Since the early 2000s, for example, it was widely understood that “remote connections with [the Eastern District of] Texas were more than sufficient to keep the case there.”⁸⁴ Against the perception among defendants that “the playing field is not level,” the court’s prevailing doctrine of venue emphasized the plaintiff’s choice of forum.⁸⁵ In particular, Judge Ward long set the tone, noting that, “I try to follow the law as I understand it” on whether venue lies in a given case.⁸⁶ The result, in any case, has been that “while numerous attempts have been made by defendants to have cases transferred out of the Marshall Division, successful motions have been very rare.”⁸⁷

A particularly telling measure of this perception was the 2008 *en banc* decision of the Court of Appeals for the Fifth Circuit in *In re Volkswagen of Am., Inc.*⁸⁸ disapproving the “typical approach” used in the Eastern District of Texas, purportedly to “avoid transferring cases out of the Marshall Division.”⁸⁹ That approach, said the Court of Appeals, misapplies the *Gilbert* venue factors⁹⁰ by placing undue emphasis on a plaintiff’s right to choose its forum court without sufficient regard for the relationship of litigants and non-party witnesses to the forum court and to the balance of hardships imposed by the choice of forum.⁹¹

Similarly, the rights of plaintiff-patentees and defendant-accused infringers to choose a forum for litigation has also been the subject of previous proposals for legislative reform, such as the Patent Reform Act of 2007.⁹² That ultimately

⁸⁴ Barnes & Thornburg Intellectual Property Group, *United States: Escape from Texas: Federal Circuit Ruling May Prompt More Transfers of Patent Cases out of the Eastern District of Texas*, BARNES & THORNBURG L.L.P. (Dec. 2009), http://www.btlaw.com/files/ALERT%20-%20IP_Escape%20From%20Texas.pdf; accord Offen-Brown, *supra* note 59, at 87.

⁸⁵ Robbins, *supra* note 34, at 11 (quoting Ted D. Lee, past chairman of the State Bar of Texas Intellectual Property Section and a shareholder in the San Antonio firm of Gunn & Lee); accord J. Jason Williams et al., *Strategies for Combating Patent Trolls*, 17 J. INTELL. PROP. L. 367, 368 n.3 (2010).

⁸⁶ Robbins, *supra* note 34, at 11; cf. Iancu & Chung, *supra* note 73, at 315 (explaining that venue transfer statistics indicate disparity in transfer rate from the Eastern District of Texas).

⁸⁷ Joseph Mahoney & Brent A. Batzer, *United States: Fifth Circuit Decision May Help Improve Venue Transfer Success from Eastern District of Texas, Marshall Division*, MAYER BROWN (Oct. 15, 2008), <http://www.mayerbrown.com/news/article.asp?id=5875&nid=5>; accord Williams et al., *supra* note 85, at 368 n.3.

⁸⁸ *In re Volkswagen of Am., Inc.*, 545 F.3d 304 (5th Cir. 2008) (*en banc*).

⁸⁹ Mahoney & Batzer, *supra* note 87; see, e.g., Offen-Brown, *supra* note 59, at 87 (discussing two venue transfer motions that were granted post-Genetech).

⁹⁰ See *Gulf Oil Corp. v. Gilbert*, 330 U.S. 501, 508 (1947).

⁹¹ *In re Volkswagen*, 545 F.3d at 318 (holding that the district court erred, *inter alia*, in “misconstruing the weight of the plaintiffs’ choice of venue”).

⁹² Patent Reform Act of 2007, S. 1145, 110th Cong. (2007); Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007); cf. *supra* notes 45–46 and accompanying text.

unsuccessful legislation contained venue shopping provisions “barring patent owners but not patent challengers from choosing the courts to hear lawsuits.”⁹³

The provision arose from the ability of patent owners to sue in any judicial district where a defendant has committed infringing acts or resides as a matter of personal jurisdiction, legislating instead that venue would be limited “to a forum where either party resides or where the defendant has committed acts of infringement and has a regular and established place of business.”⁹⁴ At the same time, criticisms of this imbalance invoked concerns that, e.g., “patent owners might pick the U.S. [District] Court, Alexandria, Va. because of its expertise and reputation as the ‘rocket docket,’ whereas “infringers may pick a slow, inexperienced court to bleed money from patent owners.”⁹⁵ That is, while both parties behaved strategically, maneuvering into an expert and efficient rocket docket is more legitimate and deserving of incentive than is trading on an inexpert and delay-prone bench.

Ultimately, it is this normative choice which drives the continued existence and popularity of rocket dockets, that strategic behavior as such may not be avoidable, but a rigorous procedural framework that discourages dilatory tactics and inflated litigation costs can reasonably be expected to produce just results.

II. EMPIRICAL ANALYSIS OF INFRINGEMENT LITIGATION 1985–2010

The empirical definition offered here, of what is a rocket docket, takes into account the quantitative criteria previously discussed,⁹⁶ notably the speed of adjudication of patent cases in the district and the volume of patent cases filed in the district. Rather than comparing districts by a simple average, however, such as time-to-trial or total pendency to disposition, the present definition analyzes disposition speed as a survival function together with filing volume as an indicator of concentration in the market of federal judicial districts.

A. Dataset and Methodology

The dataset employed in this study originated from the Public Access to Court Electronic Records (“PACER”)⁹⁷ service, taking all available cases with a Nature of Suit (“NOS”) code of 830, corresponding to patent cases. Beginning with 48,972 such

⁹³ *PTO Could Handle Post-Grant Reviews under New Law—but Can’t yet*, WASH. INTERNET DAILY (June 7, 2007), available at 2007 WLNR 10897714; see Christopher A. Harkins, *Fending off Paper Patents and Patent Trolls: A Novel “Cold Fusion” Defense Because Changing Times Demand it*, 17 ALB. L.J. SCI. & TECH. 407, 422 n.66 (2007).

⁹⁴ S. 1145, 110th Cong. § 10(b) (2007); David R. Bailey, *United States: Key Changes in Patent Reform Act of 2007*, WOODCOCK WASHBURN (May 3, 2007), <http://www.woodcock.com/publications/documents/Case%20Alert%20Patent%20Reform%202007.pdf>.

⁹⁵ *PTO Could Handle Post-Grant Reviews under New Law—but Can’t yet*, *supra* note 93 (quoting Sen. Coburn (R-Okla.)); see Farrand et al., *supra* note 81, at 373.

⁹⁶ See *supra* Part I.B.

⁹⁷ See PACER, <http://www.pacer.gov/> (last visited Oct. 16, 2011).

cases dating back to April 1962, the dataset was cleaned to remove erroneous or nonsense entries in the PACER database and entries that duplicated other filings already in the system. To minimize random errors arising from insufficient reporting in PACER of cases actually litigated, all cases filed prior to 1985 were also removed, leaving 44,428 data points of viable patent cases.

Each data point contained, in pertinent part, the forum court of the case, the date of filing, and the date of closing. These 44,428 cases were then separated according to the forum in which each was filed, one of the ninety-three judicial districts of the federal court system.

1. Survival Analysis

Survival analysis, also called duration analysis in economics and reliability analysis in engineering, is a method of evaluating data dealing with the “mortality” or “failure” of a system.⁹⁸ As survival analysis traditionally assesses “the proportions of failure among individuals under specified conditions,”⁹⁹ it is a useful framework in which to examine the time probability of adjudication, analogous to mortality, of a patent litigation case.

In recent years, survival analysis has seen growing use in legal contexts ranging from labor relations¹⁰⁰ to discovery practice.¹⁰¹ Yet the only use of survival analysis in the legal patent literature thus far appears to have been Jonathan Barney’s 2002 study estimating patent value by applying survival analysis to the post-issuance expiration of patents of similar characteristics by failure to pay maintenance fees.¹⁰²

This Article proposes to apply survival analysis, not to other covariate measures of interest, but to the disposition time itself in order to judge a population of cases by their survival time.

The survival function of a population—here, the population is a body of patent litigation cases—describes the distribution of ages at which members of the population depart from the population due to failure.¹⁰³ The survival function $S(x)$ is defined as the incidence at which a member of the population having a lifetime X will fail no earlier than time x , such that

Formula 1

$$S(x) = 1 - \Pr(X < x) = \Pr(X > x)$$

⁹⁸ See REGINA ELANDT-JOHNSON & NORMAN JOHNSON, *SURVIVAL MODELS AND DATA ANALYSIS* 3 (Wiley, 1980).

⁹⁹ See *id.* at 6 (discussing exposure to risk).

¹⁰⁰ See, e.g., *Lewis v. NLRB*, 750 F.2d 1266, 1272–74 (5th Cir. 1985) (adopting the survival analysis of an expert witness comparing the respective statuses of employees).

¹⁰¹ See, e.g., Thomas E. Willging et al., *An Empirical Study of Discovery and Disclosure Practice Under the 1993 Federal Rule Amendments*, 39 B.C. L. REV. 525, 557 (1998) (discussing what factors are related to litigation duration).

¹⁰² Jonathan A. Barney, *A Study of Patent Mortality Rates: Using Statistical Survival Analysis to Rate and Value Patent Assets*, 30 AIPLA Q.J. 317, 320 (2002).

¹⁰³ See JOHNSON, *supra* note 98, at 50 (discussing the survival distribution function).

Of particular importance to survival analysis is the hazard function $\lambda(x)$, also known as the force of mortality among the population, defined as the instantaneous rate of failure at a given time,¹⁰⁴ such that:

Formula 2

$$\lambda(x) = -\frac{dS(x)}{dx}$$

To compute the survival distribution function of each judicial district, the survival time of each case was first computed as the difference, in days, between the closing date and the filing date. The cases filed in each given district, taken as a population, were then sorted in increasing order of survival time.

For example, in the United States District Court for the District of Arkansas, the population comprised four cases that were closed in fifty-six days, 188 days, 258 days, and 469 days, respectively. Accordingly, this population yielded the following survival distribution:

Table 1

Survival Distribution by Count of Survivors

Survival Time (days)	Population Size (counts)
0	4
56	3
188	2
258	1
469	0

Each survival distribution was then normalized as to its population size, from a count of survivors to a fraction of survivors, e.g., the following:

Table 2

Survival Distribution by Fraction of Survivors

Survival Time (days)	Population Size (fraction)
0	1
56	0.75
188	0.5
258	0.25
469	0

¹⁰⁴ See *id.* at 51 (discussing the hazard function).

Each survival function was used to estimate the related exponential hazard function for that population of cases. The survival distribution functions obtained for each of the ninety-three federal judicial districts exhibited an exponential survival curve, making it appropriate to use the simple negative-log formulation, shown above, of the hazard function.

Accordingly, the hazard functions for the districts were essentially linear. Those districts which had a rapidly diminishing survival function, i.e., where cases had a high hazard rate of being adjudicated out of the population, showed a commensurately steeper linear hazard function. The higher the slope of the hazard function, the more rapidly were cases being adjudicated in that district.

2. Concentration Analysis

Rocket dockets are, by their nature, creatures of reputation, and so any meaningful measure of case disposition speed must take account of the volume of cases filed in a given judicial district. For example, based on the earlier discussion of qualitative criteria,¹⁰⁵ a district with a very low number of patent filings would not be considered a rocket docket even if it resolved those few cases very quickly. Conversely, a district so swamped with patent filings as to affect its capacity to adjudicate them quickly may, to a point, still be considered a rocket docket. Thus, the filing volume is a necessary covariate of disposition speed.

Filing volume, in turn, is itself a source of information about the judicial marketplace for the litigation of patents. Relying on the familiar Herfindahl-Hirschman Index (“HHI”) of market concentration,¹⁰⁶ the federal courts may be evaluated as firms in three different markets.

First is a national market comprising ninety-three firms, each firm a federal district court whose market share is proportional to the volume of cases filed in it. Second is a national market comprising twelve firms, each a federal circuit court of appeals whose market share is proportional to the volume of cases filed within districts in that circuit.¹⁰⁷ Third is a set of eleven markets, each market a circuit court of appeals comprising as many firms as there are districts within that circuit.¹⁰⁸ Each is examined in turn.

To determine a district court’s share of the litigation market for a given year, the total pendency in that district for that year was calculated as case-days of pendency. That is, a single case that was both filed and closed in 1985 and lasted 100 days

¹⁰⁵ See *supra* Part I.B.

¹⁰⁶ HORIZONTAL MERGER GUIDELINES, U.S. DEP’T. OF JUSTICE AND U.S. FED. TRADE COMM’N 18 (2010), available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf> (discussing the standard methodology for determining the concentration of a market).

¹⁰⁷ This analysis considers the eleven numbered circuits and the District of Columbia Circuit, within which district courts are geographically contained. The Federal Circuit, deriving jurisdiction from statute rather than geography, is omitted from the analysis because it does not “contain” any districts within it.

¹⁰⁸ This analysis considers only the eleven numbered circuits, as they all contain more than one district. The District of Columbia Circuit, containing only its eponymous district, is omitted from the analysis because it is a single-firm market and so cannot vary in its HHI.

would amount to 100 case-days, as would five cases that were all filed and closed in 1985 and lasted twenty days each. Cases that spilled over into subsequent years similarly contributed to the district's market share of case-days for those years.

The concentration of each relevant market was then determined by the HHI of that market. The HHI is calculated by squaring the percent share attributable to each firm and summing those percentages.¹⁰⁹

B. Findings and Discussion

1. Survival Analysis

The index of adjudication speed assigned to each district was the slope of the linear hazard function of the population of cases filed in that district during 1985–2010.¹¹⁰ By this measure alone, the top eighteen candidate districts for rocket docket status were determined to be the following:

Table 3
Top Eighteen Candidate Districts for Rocket Docket Status

District	Index	Filing Rank	District	Index	Filing Rank
WI-WD	5.13	32	MN	2.19	9
VA-ED	3.73	14	CA-CD	2.19	1
WA-WD	2.86	20	OR	2.14	31
FL-MD	2.71	17	GA-ND	2.13	16
TX-ED	2.68	7	OH-ND	2.06	19
TX-WD	2.32	35	DC	2.05	25
CA-SD	2.24	12	UT	2.02	24
MO-ED	2.24	30	NC-MD	1.99	37
TX-ND	2.20	13	MI-ED	1.97	10

The incompleteness of this intermediate measure is at once apparent. The Central District of California (Index = 2.19) is ranked eleventh in disposition speed but first in filing volume. By contrast, the Western District of Texas is ranked sixth

¹⁰⁹ HORIZONTAL MERGER GUIDELINES, *supra* note 106, at 18 n.9. The *Horizontal Merger Guidelines* provide the following example:

For example, a market consisting of four firms with market shares of thirty percent, thirty percent, twenty percent, and twenty percent has an HHI of 2600 (30² + 30² + 20² + 20² = 2600). The HHI ranges from 10,000 (in the case of a pure monopoly) to a number approaching zero (in the case of an atomistic market). Although it is desirable to include all firms in the calculation, lack of information about firms with small shares is not critical because such firms do not affect the HHI significantly.

Id.

¹¹⁰ For a readable comparison, the indices were all scaled up by a factor of 1000.

in disposition speed but only thirty-fifth in filing volume. The problem of these disparities is to determine what disposition speed *at a given filing volume* should be considered sufficiently significant to indicate the presence of a rocket docket.

To make this determination, the districts were ranked in decreasing order of filing volume during 1985–2010, and only those districts were retained which saw at least 300 patent filings during that twenty-five-year period. The result is illustrated in Figure 1.

Figure 1 indicates three districts whose respective indices of adjudication speed outpace those of other districts with similar filing volumes. Confirming the conventional wisdom, they are the Eastern District of Texas, the Eastern District of Virginia, and the Western District of Wisconsin. Indeed, as filing volume drops, the index needed to command rocket docket status rises commensurately.

Figure 1 also indicates two districts whose indices of adjudication speed are not currently on the order of rocket dockets, but are nevertheless emerging dockets of potential significance in patent litigation. They are the Middle District of Florida, which includes Jacksonville and Tampa, and the Western District of Washington, which includes Seattle.

Further analysis of these five districts reveals notable trends over time. For this, the indices of adjudication speed for each district were calculated over twelve lengthening time periods: 1985–1999, 1985–2000, 1985–2001, and so on through 1985–2010. The result is illustrated in Figure 2.

Figure 2 indicates that, starting from its index of adjudication speed based on the 1985–1999 period, the Eastern District of Texas slowed slightly until 2001 before speeding up just as slightly ever since, rising to its current maximum index in 2010. This pattern reflects that “so many patentees [filing] suit there based on the perception that the Eastern District is pro-patentee.”¹¹¹ Indeed, at 1736 cases, the Eastern District of Texas had the highest filing volume of all five districts identified in Figure 1 as true or emerging rocket dockets. Given this large population of cases, it is to be expected that marginal increases as well as marginal decreases in the index of adjudication speed will be small in magnitude from year to year.

Figure 2 also indicates that the Eastern District of Virginia suffered the same kind of deceleration during 1999–2001 and subsequent acceleration from 2001–2010 as did the Eastern District of Texas, but in larger magnitude. By the same token, it is to be expected that the relatively smaller filing volume of the Eastern District of Virginia will give rise to higher-magnitude marginal changes in the index of adjudication speed.

Not least, Figure 2 indicates that the Western District of Wisconsin enjoyed continued gradual accelerations in its adjudications during 1999–2004, followed by gradual decelerations during 2004–2007. An abrupt break came in 2007, however, after which the index of adjudication speed began to rise again.

In the Western District of Wisconsin, Judge Shabaz—who, with Judge Crabb, was instrumental in garnering Wisconsin’s rocket docket reputation¹¹²—served as chief judge from 1996–2001¹¹³ and remained on the court thereafter. It is possible,

¹¹¹ Robbins, *supra* note 34, at 11; *see* Farrand et al., *supra* note 81, at 373.

¹¹² *See* Pribek, *supra* note 67; Hrodey, *supra* note 67.

¹¹³ Biography of Hon. John C. Shabaz, *supra* note 66.

therefore, that Judge Shabaz's influence played a role in the district's measured rise of adjudication speed during the same period.

By the same token, reversals in Judge Shabaz's health prior to his assumption of senior status in 2009¹¹⁴ may have played a role in the concurrent slowdown in the district's adjudication speed during the same period—a period when the district's burgeoning reputation also saw increased patent filings.

Not least, prior to Judge Conley's 2009 nomination and 2010 accession to the district court,¹¹⁵ Judge Stephen Crocker was the only magistrate judge in the Western District of Wisconsin¹¹⁶ and, beginning in 2007, was delegated an increasing portion of the patent caseload. This sharing of work may have softened—indeed, reversed—the deceleration of the district's adjudication speed.

Although these accounts are admittedly non-rigorous explanations, to the extent that they substantiate observed quantitative trends, they reflect the reputation of their respective districts as already documented.

2. Concentration Analysis

The use of filing volume, measured in case-days for each district, as an indicator of a district's "market share" in the national judiciary revealed trends with interesting implications for both the district and circuit courts. To begin with, concentration analysis of the nationwide judicial market yielded results as illustrated in Figure 3.

Figure 3 indicates that, whether the relevant firm is the district court or the circuit court, the nationwide judicial market is an "unconcentrated market," for in both cases the HHI never reaches 1500.¹¹⁷ Given the large number of districts and the relative balance among geographic circuits, this lack of market concentration—i.e., relatively equal distribution of market share—is to be expected.

Nevertheless, the market is more concentrated with respect to circuit courts than it is with respect to district courts. Moreover, market concentration with respect to circuit courts has generally risen during 1985–2010 with only small and brief intervening dips, whereas concentration with respect to district courts actually dropped during 1985–1988, stayed relatively constant during 1988–2006, and rose markedly during 2006–2010.

The difference in these trends is significant, for the two conceptions of the "firm" are related in that each circuit may be regarded as a "merger" of the districts that comprise it. The steady rise during 1985–2010 in concentration as to circuits suggests that the last quarter-century has seen patent filings shift disproportionately to certain circuits.

¹¹⁴ *Id.*

¹¹⁵ Biography of Hon. William Martin Conley, *History of the Federal Judiciary: Western District of Wisconsin, FED. JUD. CTR.*, <http://www.fjc.gov/servlet/nGetInfo?jid=3232&cid=179&ctype=dc&instat=wi> (last visited Oct. 16, 2011).

¹¹⁶ See United States District Court for the Western District of Wisconsin, *About the Court*, <http://www.wiwd.uscourts.gov/about/index.html>.

¹¹⁷ See HORIZONTAL MERGER GUIDELINES, *supra* note 106, at 19.

By contrast, the low and steady concentration as to districts during the same period suggests that patent filings were distributed relatively evenly throughout the country—until 2006. The HHI during 2006–2010 rose from 368.6 to 547.6, a jump of nearly 180 points and nearly fifty percent. Though the market remains unconcentrated as to districts, the jump suggests that patent filings began to shift disproportionately to certain districts.

To this end, concentration analysis of circuitwide judicial markets yielded results as illustrated in Figure 4. Figure 4 indicates that nearly all the markets are at least moderately concentrated, with HHI values above 1500. This, too, is to be expected, given the small number of districts within each circuit—intuitively, a small number of firms in each market will make each shift in share more significant to the market’s concentration. As both the national concentration as to circuits and the national concentration as to districts rose markedly during 2006–2010, it is particularly relevant to consider those trends in answering the question, *to which circuits and districts are patent filings disproportionately shifting?*

In this regard, Figure 4 indicates that the most concentrated circuit markets were the First, Fifth, and Seventh Circuits while the least concentrated circuit market was the Fourth Circuit. The story of the First Circuit is an evident rush to the District of Massachusetts, the only district in the First Circuit even to appear in Figure 1, as New Hampshire, Rhode Island, Maine, and Puerto Rico each received fewer than 200 patent filings during 1985–2010.

Yet the marked rises in the concentrations of the Fifth and Seventh Circuits—in the case of the Fifth Circuit, a sharp rise—point back to the Eastern District of Texas and the Western District of Wisconsin, respectively. Consonant with their rocket docket reputations, these districts have become the leading firms in their respective judicial markets by share of filing volume received.

The Eastern District of Virginia, however, has not had a similarly strong impact on its sister districts in the Fourth Circuit. Indeed, the distributed shares of filing volume in the Fourth Circuit show that the Eastern District of Virginia is a leader and the Fourth Circuit is not an unconcentrated market; yet the district is not an insuperable leader, and the circuit is not highly concentrated:

Table 4
Fourth Circuit Shares of Patent Filing Volume

District	Patent Filings 1985–2010	Share (%)
VA-ED	930	35.02%
MD	534	20.11%
NC-MD	328	12.35%
NC-WD	280	10.54%
SC	242	9.11%
NC-ED	162	6.10%
VA-WD	109	4.10%
WV-ND	50	1.88%
WV-SD	21	0.79%
HHI = 2035		

Moreover, the long history and broad reputation, unrestricted to patents, of the Eastern District of Virginia suggest that, while it is a rocket docket, it is one that has found equilibrium in a manner unlike the strategic reputations of Texas and Wisconsin.

III. CONCLUSION

The principal focus of this Article has been to document the conventional wisdom surrounding rocket dockets in patent law and to reconceive it on the basis of a quantitative framework. The framework proposed here substantiates much of the conventional wisdom, and that may be a source of credibility. Yet its accompanying explanations and predictions also call for further study.

Of particular importance is the differential effect of technology classes on case disposition speed, both generally and with respect to certain districts and certain circuits. Also important to the question of forum shopping is data on the location of patent owners as it affects the location of the forum court. Not least, there is the question of whether case disposition is significantly correlated to outcomes, be they pro-plaintiff or pro-defendant, pro-patentee or pro-infringer. It is hoped that by accounting for these additional considerations, the patent rocket docket will continue to transform from a creature of anecdote toward a well-defined forum for prompt and effective adjudication.

APPENDIX

Figure 1

Cumulative Disposition Rates of Patent Cases in the United States District Courts, 1985–2010

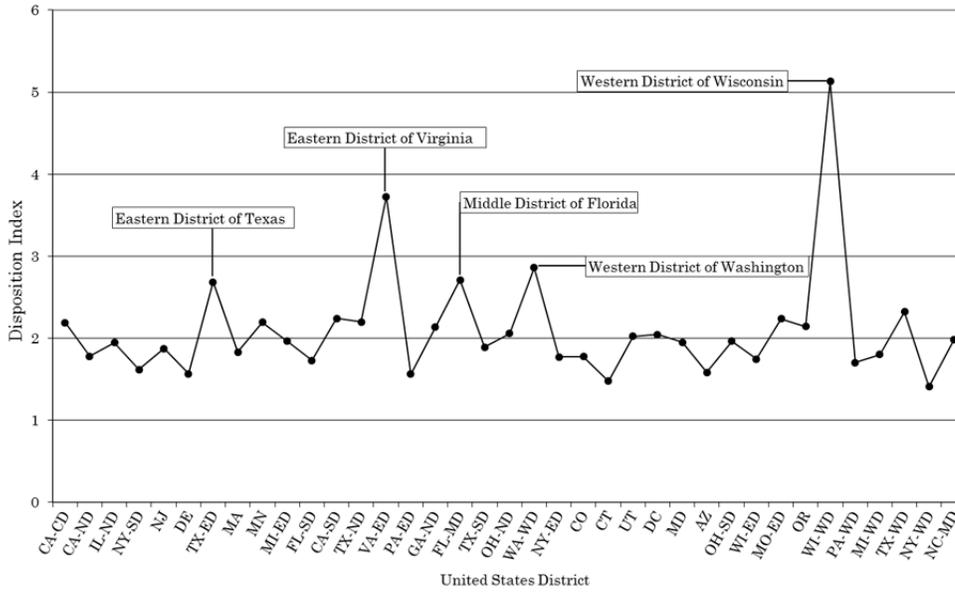


Figure 2

Cumulative Disposition Rates for Identified Patent “Rocket Dockets”

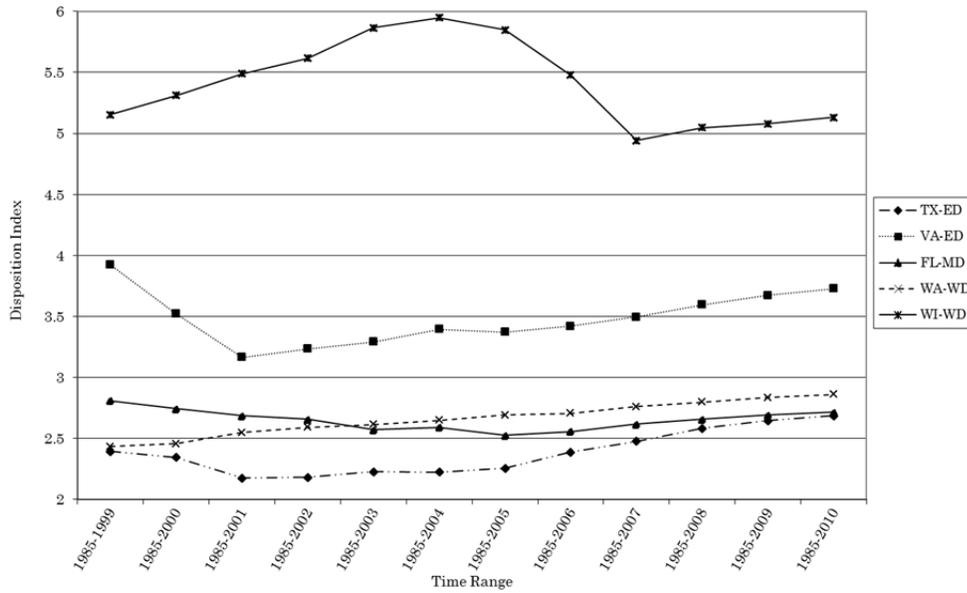


Figure 3
Concentration of the Nationwide Judicial Market

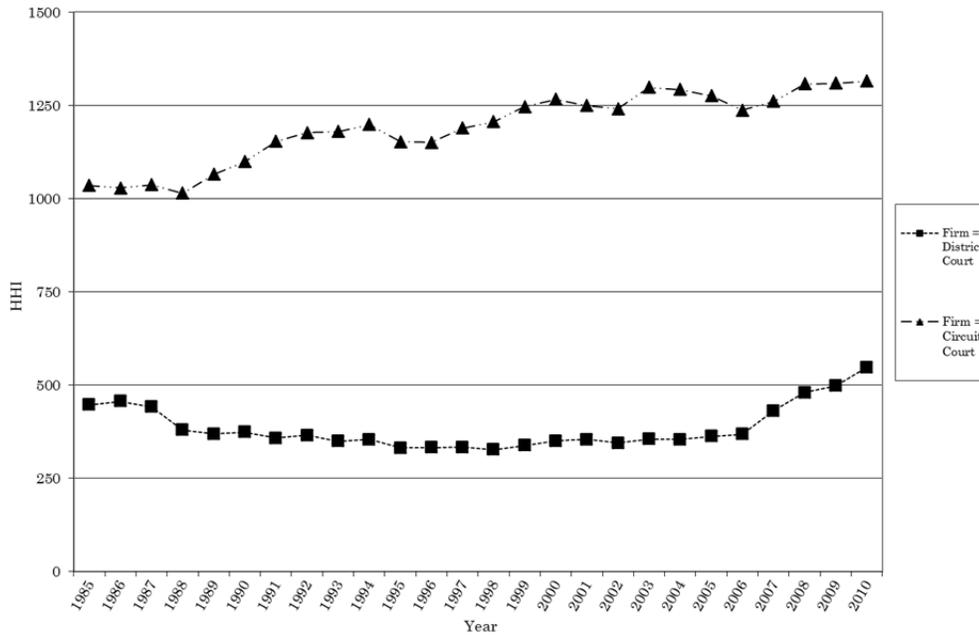


Figure 4
Concentration of the Circuitwide Judicial Markets

