FRIENDS OF THE COURT: USING AMICUS BRIEFS TO IDENTIFY CORPORATE ADVOCACY POSITIONS IN SUPREME COURT PATENT LITIGATION

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TABLE OF CONTENTS

Abstract

Dire predictions that without the threat of an injunction patentees will be unable to license their inventions absent a lawsuit are simply unsupportable. In the wireless telecommunications industry, for example, products and services often implicate hundreds of patents . . . . The likelihood is far greater that technology companies will license questionable patents in order to avoid litigation . . . .[1]

The Amici, like other patent owners, have relied on the long-settled

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1. Brief for Research in Motion's (makers of the *Blackberry*) at 11, as Amicus Curiae Supporting Petitioners, eBay, Inc. v. MercExchange, L.L.C., 547 U.S. 388 (2005) (No. 05-130) [hereinafter Research in Motion].

expectation that the patent grant is presumptively enforceable via a permanent injunction. They have guided their investments in research and development, and their decisions to obtain, acquire and maintain their patent portfolios, on this understanding. The Court should not undermine the value of those investments, and the incentives to continue those investments, based on Petitioners' errant historical and policy arguments.[2]

I. INTRODUCTION

The global economy increasingly relies on information and innovation as the engines of growth. An important area of regulation in this context are the patent laws as a way to provide an incentive for innovation[3] and to limit the scope of what can be subject to private ownership. It is fair to say that the U.S. Supreme Court has recently made some dramatic adjustments to the United States patent laws. The Supreme Court has weighed in with increasing frequency as a response to stalled legislative efforts to reform the patent system.[4] The Court has, also, adjudicated cases that have changed aspects of patent law related to the exclusivity remedy,[5] the obviousness standard,[6] and has most recently adjudicated cases concerning the scope of patentable subject matter.[7] To say that patent law has changed is not controversial. To a large extent, the patent cases that the Supreme Court has selected to review are frequently related to core patent law doctrines. What is largely ignored from the larger debate surrounding these significant changes, however, is the likely impact that these changes will have on parties who are directly impacted by the patent regime. How these changes to patent law will impact stakeholders is, in large part, omitted from the debate concerning the recent changes to the patent laws. This article aims to shed light on the debate surrounding the changes to the patent system by examining the way private parties advocate at the Supreme Court whenever the high Court agrees to decide a patent-related

2. Brief for General Electric Co. et al. at 4, as Amici Curiae Supporting Respondents, eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388 (2005) (No. 05-130) [hereinafter General Electric].

3. The grounding for the U.S. patent law is found in the U.S. Constitution, which states that in order "[t]o promote the Progress of Science and useful Arts," Congress shall have the power to grant to "authors and inventors the exclusive rights to their writings and discoveries." U.S. CONST. art. I, § 8, cl. 8.

4. There have been multiple instances where the legislature failed to institute patent reforms. *See e.g.*, Patent Reform Act of 2007, H.R. 1908, 110th Cong. (including such major provisions as: first-to-file rights; provisions to facilitate filing a patent application without inventor cooperation; limitation of damages to the economic value of the improvement; limitations on when damages may be trebled for willfulness; post-grant opposition proceedings and venue limitations). *But see* Patent Reform Act of 2007, S. 1145, 110th Cong. (failing to achieve majority vote in the Senate). *See generally* Carl E. Gulbrandsen et al., *Patent Reform Should Not Leave Innovation Behind*, 8 J. MARSHALL REV. INTELL. PROP. L. 328, 328 (2009) (describing the many congressional bills that have been proposed).

5. *See* eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 391 (2005) (increasing uncertainty with respect to a patentee's ability to obtain a permanent injunction after infringement is adjudicated by replacing a formulaic rule adhered to by the Court of Appeals for the Federal Circuit (CAFC) with a new four factor test).

6. *See* KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007) (raising the obviousness standard by holding that an invention consisting of combined elements is not proved obvious by merely demonstrating that each element was independently known as prior art).

7. *See generally* Bilski v. Kappos, 130 S. Ct. 3218, 3220–21 (2010) (clarifying what can be patentable in terms of business methods).

issue.

This article examines how private market participants, namely companies, advocate changes to the Supreme Court whenever that court agrees to decide a case related to patent law. The particular advocacy method analyzed in this article is the *amicus* brief filed by a non-litigating, but interested, party.[8] There are a myriad of stakeholders who are affected by patent law, e.g. universities, consumers, firms, and legal practitioners. Each of these participants, some of which represent the public interest, has a valid stake in patent law. A virtue of the *amicus* brief system is that it allows all participants to advocate the position that best represents their collective interests, and, thus, many of them participate as patent law *amicus* brief advocates. A separate study recently analyzed how this diverse group of stakeholders uses *amicus* briefs to petition the court for a particular outcome.[9] This article, however, seeks to better and more carefully analyze how companies advocate the high court in matters concerning patent law. There is an increasing awareness that companies have a disproportionate amount of political power in the legislative process,[10] so it is useful to examine this particular group's behavior changes when it advocates at the Supreme Court level. Also, it is recognized that the patent laws will directly impact this private stakeholder group, which includes a diverse set of actors in different industries and maturity stages.

Not all companies are the same, so it will be useful to examine how different types of companies advocate with respect to an important area of technology regulation such as the patent laws. Companies may attempt to shape the patent regulatory environment to engage in what is called a non-market strategy.[11] In this non-market strategy, companies may seek to influence regulation in what is known in legal scholarship as the marketplace for law.[12] Scholarship concerning the market for corporate law examines how private firms and representatives, viewed as members of an elite group, impact

8. MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 37 (Frederick C. Mish et al. eds., 10th ed. 1993) (stating that *Amicus curiae* is New Latin for 'friend of the court').

9. *See generally* Colleen V. Chien, *Patent Amicus Briefs: What the Courts' Friends Can Teach Us About the Patent System*, 1 U.C. IRVINE L. REV. (forthcoming), (citing David Orozco & James G. Conley, *Innovation Policy and Friends of the Court: Intellectual Property Advocacy Before the U.S. Supreme Court*, Northwestern University Searle Center Working Paper 2008-103 *available at* http://www.law.northwestern.edu/searlecenter/papers/workingpapers/ (last visited Mar. 21, 2011)) (describing the Orozco and Conley article as one of the few scholarly works that has examined stakeholders filing *amicus* briefs in patent cases).

10. The topic of corporate power in the political process was recently highlighted in the controversial Supreme Court decision of *Citizens United v. FEC*, 130 S. Ct. 876 (2010), where the Supreme Court held that corporate funding of political ads cannot be limited by the government under the First Amendment. *See generally* Richard M. Essenberg, *The Lonely Death of Public Campaign Financing*, 33 HARV. J.L. & PUB. POL'Y 283 (2010) (discussing how the Supreme Court has long recognized the governmental interest in preventing corruption and the appearance of corruption in election campaigns as result of corporate wealth in the political process).

11. *See* David P. Baron, *Integrated Strategy: Market and Nonmarket Components*, 37 CAL. MGMT. REV. 47, 50–54 (1995) (illustrating how companies engage regulators to obtain strategic benefits from regulation). *See also* David Orozco, *Legal Knowledge as an Intellectual Property Management Resource*, 47 AM. BUS. L. J. 687, 718–21 (2010) (illustrating how firms also attempt to strategically shape the immediate legal environment through private legal strategies).

12. *See generally* Larry Ribstein & Erin Anne O'Hara, *Corporations and the Market for Law*, 2008 U. ILL. L. REV. 661 (2008) (discussing corporate competition and the market for corporate law).

the laws through their choices. In a related manner, this article will examine whether there are *elites* vying to shape the patent jurisprudence developed by the U.S. Supreme Court. A goal of this article is, therefore, to make sense of this *amicus brief advocacy market* and to demonstrate and explain how companies cluster in ways that support a particular patent position.

The commonly held view is that patents are important legal tools used across the board by companies.[13] However, as exemplified by the contrasting positions of the companies reflected by the initial quotes above, this is hardly the case in practice.[14] One line of empirical research suggests that patents are effective only within a narrow slice of industries, relative to lead time; branding or trade secrets are more effective methods of capturing the rewards of innovation.[15] Prior survey-based research examines the relative importance of patents compared with these other appropriability regimes in the context of *large firms* with research and development, or manufacturing capabilities. Not all firms, however, fall within that narrow definition. Many firms are smaller or more specialized. Emerging evidence, in fact, suggests that patents play a more important role for start-ups and more specialized firms.[16] Although this latter group of research does not compare patents with other appropriability mechanisms, there is a mixed basis for ascertaining whether firms of varying sizes within *any* industry will favor stronger versus weaker patent rights.[17] Given this uncertainty, it is likewise difficult to ascertain how broad changes in the patent regulatory environment will impact various types of companies.[18]

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13. *See generally* WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW (Belknap Press of Harvard Univ. Press 2003) (discussing the economics of patent law).

14. Research in Motion, *supra* note 1, at 11 n.9; General Electric, *supra* note 2, at 4. *See also* John R. Allison & Emerson H. Tiller, *The Business Method Patent Myth*, 18 BERKELEY TECH. L.J. 987, 994–95 (2003) (discussing how business method patents in particular have been targeted because they are often wielded by non-practicing entities, more commonly referred to in the public press as "patent trolls").

15. Richard Levin, et al., *Appropriating the Returns from Industrial Research and Development*, BROOKINGS PAPERS ON ECON. ACTIVITY 783, 784 (1987); Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32 MGMT. SCI. 173, 175 (1986). *See generally* James Bessen & Michael J. Meurer, *Lessons for Patent Policy from Empirical Research on Patent Litigation*, 9 LEWIS & CLARK L. REV. 1, 8 (2005) (discussing how patent premiums are larger for the pharmaceutical and biotechnology industries); Wesley M. Cohen et al., *Protecting their Intellectual Assets; Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or not)* (Nat'l Bureau of Econ. Research, Working Paper No. 7552, 2000), *available at* http://www.krannert.purdue.edu/faculty/smartin/courses/590/NBER7552.pdf (discussing "the protection of product innovations, secrecy now appears to be much more heavily employed across most industries than previously").

16. *See* Chien, *supra* note 9, at 21–24 (analyzing the different roles the patent system plays for various groups); Stuart J.H. Graham et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERKELEY TECH. L.J. 1255, 1255 (2009) (discussing the importance of patents to software start-up ventures); Bronwyn H. Hall & Rosemarie Ham Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in the US Semiconductor Industry, 1979-1995*, 32 RAND J. ECON. 101, 101 (2001) (discussing the strengthening of patent rights in the 1980s and how it "facilitated entry by specialized design firms"); Kelvin W. Willoughby, *Intellectual Property Management and Technological Entrepreneurship: One Size Does Not Fit All*, Working Paper 17 (2010) *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1630666 (empirically finding that small firms in the bioscience sector make more intensive use of patent protection than large firms).

17. *See* Stuart J.H. Graham & Ted Sichelman, *Why Do Start-Ups Patent?*, 23 BERKELEY TECH. L.J. 1063, 1070 (2008) (discussing the fact that it remains a mystery why individuals and firms decide to patent).

18. Understanding how a representative sample of firms value patent rights is important since regulation is being advocated to protect some industries which are believed to be harmed by overly expansive patent

Since the patent laws are believed to directly impact innovation, it may be that changes to the patent system will impact innovation rates or direction, essentially harming some companies while benefiting others. Without knowledge of how certain companies are advocating the changes to the patent laws, it is currently unknown how the Supreme Court's changes to the patent system will impact the variety of companies that compete in the marketplace.

This article will seek to address these issues through an empirical examination of patent right advocacy involving *amicus* briefs submitted to the U.S. Supreme Court.[19] These revealed patent right preferences are measured using a novel database of *amicus* briefs filed by companies. To better predict how one company would advocate at the Supreme Court, the research employs a statistical model known as a binomial logit model to assess the patent advocacy of companies with varying characteristics in terms of size, industry, and patent capabilities.[20] The overall findings obtained from the empirical analysis are that the size of the firm and firm-specific patent capabilities are significant predictors of *amicus* brief advocacy. In contrast to prior studies, the statistical results offered here are weaker for the variable that measures industry membership.

To examine these questions, the article proceeds as follows. Section II offers an introduction to the role of *amicus* briefs to clarify how companies use these briefs to advocate a certain position with respect to the patent laws. Various theories are also discussed that explain why *amicus* briefs are valued by the court and the parties who file them. Following this, Section III discusses the various company attributes that will help predict whether a company advocates in favor of a weaker or stronger patent regime in their brief. Section IV discusses the empirical methodology and model. Section V discusses the results of the empirical study and Section VI concludes.

II. AMICUS BRIEFS AS ADVOCACY INSTRUMENTS

Amicus briefs are filed by parties to influence the decision-making of judges.[21] Before examining three theories that explain the role of *amicus* briefs

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rights. *See* JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 216–21 (2008) (describing the effectiveness of patent regulatory reform); ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS—HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 1–24 (2004) (discussing the weaknesses of U.S. patent regulatory system).

19. Companies are an important category of patent right stakeholders. *See* Birgitte Andersen & Sue Konzelmann, *In Search of a Useful Theory of the Productive Potential of Intellectual Property Rights*, 37 RES. POL'Y. 12, 12 (2008) (discussing the relationships among IPR stakeholders and the contribution of such relationships to the processes of financial and non-financial value creation and distribution from IPRs).

20. The binomial logit model is a statistical technique used to predict binary outcomes. In this case, the binary outcome is the *amicus* brief filer's advocacy in favor of either the plaintiff (patent owner) or the defendant (alleged patent infringer). *See infra* section IV.C.

21. *See generally* Joseph D. Kearney & Thomas W. Merrill, *The Influence of Amicus Curiae Briefs on the Supreme Court*, 148 U. PA. L. REV. 743, 744–49 (2000) (discussing the increase in filings of amicus curiae briefs and their influences on the Supreme Court). Filing an *amicus* brief requires time, expertise and money. Assuming rational behavior by those who expend these resources to draft and submit the brief, it is logical to conclude that these parties do so with the hopes of influencing the court in some manner. *Id.*

in the Supreme Court, it is helpful to examine the institutional environment in which the Supreme Court Justices find themselves. Judicial scholars tend to agree that the nine U.S. Supreme Court Justices are motivated by ideological preferences for public policy and pursue their policy goals by deciding cases with maximum impact on political, social, or economic policy.[22] The Justices decide these cases, however, in an environment characterized by institutional constraints. In this context, the Justices are strategic actors who realize that their ability to achieve policy goals depends on a consideration of the preferences of other actors, the choices they anticipate others will make, and the institutional context they operate in.[23] The actors whose preferences the Justices consider include the other Supreme Court Justices and external parties, e.g. Congress, the Executive branch, and public opinion.[24] Given these political and institutional considerations, *amicus* briefs assist the Court in three general ways.

Under an information theory, the briefs are useful if they expose novel facts or legal arguments.[25] Just as congressional representatives rely on interest groups as information sources, the nine Justices may rely on *amicus* briefs to provide them with information that will help them make choices that maximize their preferences for establishing law that is as close as possible to their ideal policy perspective.[26] Supreme Court Rule 37 governs the procedure for filing *amicus* briefs and states: "An *amicus curiae* brief that brings to the attention of the Court relevant matter not already brought to its attention by the parties may be of considerable help to the Court."[27] The briefs, however, also contain valuable information on the identity of the filing parties and the advocacy positions of these parties.[28]

Under an affected groups or stakeholder theory, the briefs provide a signaling device that lets the court know how important a case is by the number of briefs or identity of the filing parties.[29] Amicus briefs are also used

22. *See generally* OLIVER WENDELL HOLMES, JR., THE COMMON LAW (Little, Brown and Co. 1938 ed. 1881); WALTER F. MURPHY, ELEMENTS OF JUDICIAL STRATEGY (Univ. of Chicago Press 1964) (discussing characteristics of the Supreme Court).

23. *See* Lee Epstein & Jack Knight, *Mapping out the Strategic Terrain: The Informational Role of Amici Curiae, in*: SUPREME COURT DECISION-MAKING: NEW INSTITUTIONAL APPROACHES 215, 215–35 (Cornell W. Clayton & Howard Gillman eds., 1998) (discussing some strategic decision making by Justices).

24. *Id.* at 226–28.

25. Chien, *supra* note 9, manuscript at 9; *c.f.* ANTONIN SCALIA & BRYAN A. GARDNER, MAKING YOUR CASE: THE ART OF PERSUADING JUDGES 102–04 (2008) (discussing how Justices "don't read" *amicus* briefs). The authors then qualify their statement by saying that the Justices read briefs filed by certain parties, e.g. the United States, ACLU, AFL-CIO and any other party whose opinion the Court highly values. *Id.* They also counsel trial advocates to carefully read *amicus* briefs and be prepared to counter them during oral argument, suggesting that the Justices are aware of at least some of the briefs' arguments. *Id.*

26. Epstein & Knight, *supra* note 23, at 229. In the recent case of Bilski v. Kappos, the Supreme Court cited the amicus brief submitted by Dolby Labs, Inc. to support the Court's holding related to business method patents. Bilski v. Kappos, *supra* note 7, at 3227.

27. SUP. CT. R. 37(1).

28. Epstein & Knight, *supra* note 23, at 215. This is especially important in cases where the Executive Branch, for example, through the U.S. Solicitor General, files an *amicus* brief. According to one study, between 1954 and 1993, the Court adopted the position advocated by the Solicitor General in 72 percent of the 691 cases where the U.S. Solicitor's office participated as an *amicus*. *Id.* at 225.

29. Chien, *supra* note 9, at 26.

by courts as a proxy of social significance. One study found that the level of *amicus curiae* participation provides information about the political, social, and economic significance of a case.[30] Using *amicus* briefs as a proxy for social significance allows the Supreme Court to efficiently manage its time, which is one of its most valuable resources.[31]

Under a third theory, *amicus* briefs enhance the court's own institutional legitimacy and standing in the eyes of others.[32] Allowing for numerous briefs stimulates perceptions of responsiveness and inclusiveness, which, in turn, enhances the Court's institutional legitimacy.[33] In light of the above, *amicus* briefs provide a window of opportunity for third parties such as firms to advocate a position to the Court that is in line with their competitive interest.

Amicus briefs are, therefore, a comprehensive legal data source that offers pluralism in terms of firm size and industry. The briefs are filed by a plethora of stakeholders, including individuals, corporations, government representatives, advocacy groups, trade groups, and peak associations.[34] Before discussing companies as firm advocates, a brief overview of *amicus* briefs will help expose the utility of this legal data source.

According to the rules of the courts, each *amicus* brief must state the identity of the party, a disclosure of who authored the brief, and a disclosure of who made a monetary contribution intended to fund its preparation.[35] Each brief must also state whether it is an *amicus* brief that supports or opposes the appellate court's decision to hear the case, known as a brief in favor or against a petition for writ of certiorari.[36] Alternatively, the *amicus* brief can be in support or opposition of a substantive outcome of the case on its legal merits.[37] This research is concerned with the briefs in the latter category, i.e. whether the company filing the *amicus* brief supports affirmance or reversal by the Supreme Court of the CAFC's decision on the legal merits.[38]

III. COMPANIES AND THEIR PATENT LAW PREFERENCES

The Supreme Court's most recent decision involving the patentability of business methods in the *Bilski* case[39] attracted a great deal of interest. This was reflected in the large number of *amicus* briefs submitted by parties, which is on par with other seminal Supreme Court cases such as *University of*

30. Gregory A. Caldeira & John R. Wright, *Organized Interests and Agenda Setting in the U.S. Supreme Court*, 82 AM. POL. SCI. REV. 1109–22 (1988) [hereinafter *Organized Interests*].

31. *Id*. at 1111–13.

32. Omari Scott Simmons, *Picking Friends from the Crowd, Amicus Participation as Political Symbolism*, 42 CONN. L. REV. 185, 199–202 (2009).

33. *Id*.

34. Gregory A. Caldeira & John R. Wright, *Amici Curiae Before the Supreme Court: Who Participates, When, and How Much?* 52 J. POL. 782, 788–91 (1990) [hereinafter *Amici Curiae Before the Supreme Court*].

35. SUP. CT. R. 37(6).

36. SUP. CT. R. 37(2)(a).

37. *Id*.

38. *Id*.

39. Bilski v. Kappos, 130 S.Ct. 3218 (2010).

California v. Bakke.[40] The increasing number of *amicus* briefs submitted by companies indicates that the court's patent decisions will have broad implications for a variety of companies. The Courts' decisions will also provide a way to ascertain the patent interests of companies. At a very general level, the Court's decision will announce a new aspect of patent law doctrine and either uphold the patent owner's claim of patent infringement, or reject it and rule in favor of the alleged patent infringer. Supreme Court patent cases, therefore, provide a general proxy for identifying those companies who *ex ante* support an outcome in favor of the patent owner versus those who support the defendant accused infringer. This type of support allows one to observe parties who support strong patent rights (plaintiff) versus weak patent rights (defendant). Support in favor of plaintiff is labeled strong patent right advocacy. Support in favor of the defendant is labeled weak patent right advocacy for the purposes of this article.

Central to the debate about the merits of patent reform are what are believed to be divergent interests between industries that rely on patents in seemingly differing manners.[41] Some data suggests that firms in high technology industries generally advocate for a reduction in the strength of patent rights.[42] Firms in chemistry and materials-based industries, however, are generally believed to advocate in the opposite manner for stronger patent rights.[43] Given this tenuous scenario, where various economically important industries have divergent interests, the legislature has failed to enact broad reforms. Scholars have recognized that the courts can mitigate this deadlock using patent policy levers to implement a more fine-tuned approach to patent reform.[44] As the *amicus* data will show, firms have divergent interests with respect to these patent lever adjustments made by the U.S. Supreme Court.

The *amicus* briefs will be used to test the assumption that patent value is largely influenced by a company's industry membership. This article takes issue with this overly simplistic account since it fails to explain why some firms engage in counterintuitive advocacy. One scholar, for example, discusses how large firms in chemistry-based industries favor a weak patent

40. *See* Chien, *supra* note 9, at 4 (stating that more than 65 amicus briefs were filed in the *Bilski* case).

41. *See* FEDERAL TRADE COMMISSION, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 11, 44 (2003), *available at* http://www.ftc.gov/os/2003/10/innovationrpt.pdf (discussing how representatives from the pharmaceutical and biotechnology industries agreed that the patent system was an essential incentive for innovation; representatives from the computer hardware industry and the software and internet industries, however, exhibited uncertainty about the patent system's role for promoting an incentive to innovation.). *See also* Robert E. Thomas, *Vanquishing Copyright Pirates and Patent Trolls: The Divergent Evolution of Copyright and Patent Law*, 43 AM. BUS. L.J. 689, 733–34 (2006) (discussing info-tech's advocacy for patent reform).

42. Thomas, *supra* note 41, at 733–34.

43. *Id. See also* Dan L. Burke & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1589 (2003) (introducing chemistry as one of fields in which patents play a major role in contributing to the innovation).

44. *Id*. at 735–37. *See also* Daniel R. Cahoy, *An Incrementalist Approach to Patent Reform Policy*, 9 N.Y.U. J. LEGIS. & PUB. POL'Y 587, 636 (2006) ("Courts and administrative agencies may be in a much better position to create and revise the law based on institutional flexibility. Maximizing reform on this level may also reduce the potential conflict between industry-specific initiatives and international treaties mandating uniformity across technologies.").

environment to reduce the threat from smaller, upstream technology innovators, such as biotechnology companies.[45] Other counterintuitive situations can also be identified. For example, some smaller high-technology firms file *amicus* briefs that advocate a strong patent regime.[46] The following sections examine the traits that will be used to determine how companies use *amicus* brief advocacy to support either stronger or weaker patent rights. Those specific company traits include the industry that the company filing the brief belongs to, in addition to, the size of the company, and its unique patent capabilities. These traits are all discussed next.

A. Industry Membership

As previously mentioned, survey-based research of *large firms* finds that patents are just one mechanism for appropriating technology-based innovations.[47] These studies show that patents are valued less in some industries relative to other value capture mechanisms such as trade secrets or branding.[48] A relatively recent survey[49] examined firms in various industries and found that companies can be classified by industry depending on whether their technology was complex versus discrete.

The distinction between these two technology categories is that complex technologies comprise a large number of separately patentable elements.[50] Discrete technologies, on the other hand, embody relatively few patentable elements.[51] Examples of complex technology industries are: machinery, computers, electrical equipment, telecommunications, electrical components, instruments, and transportation equipment.[52] Discrete technology industries include: food, textiles, chemicals, drugs, and metals.[53]

It is believed that the categorization of complex versus discrete technology industry helps explain the firm's subjective disposition with respect to the overall patent regime as a tool for realizing competitive advantage. For example, complex technologies typically incorporate and agglomerate many patent rights owned by various firms. The typical cell phone, for example,

45. Gary P. Pisano, *Profiting from Innovation and the Intellectual Property Revolution*, 35 RES. POL'Y 1122, 1128 (2006). *See* Robert P. Merges, *A New Dynamism in the Public Domain*, 71 U. CHI. L. REV. 183, 185–90 (2004) (describing that, in the biotechnology field, private firms are investing significant amount of money to create assets that preempt their intellectual property rights for certain strategic reasons such as to avoid over-fragmentation and encourage innovation and to reduce transaction costs).

46. *See, e.g.*, Brief for Qualcomm, Incorporated and Tessera, Inc as Amici Curiae Supporting Respondents, eBay Inc and Half.Com v. MercExchange, L.L.C., 547 U.S. 388 (2006) (No. 05-130); Brief for General Electric Company et. al. as Amici Curiae Supporting Respondents, eBay Inc and Half.Com v. MercExchange, L.L.C., 547 U.S. 388 (2006) (No. 05-130) (advocating a strong patent regime).

47. *See infra* Section I and note 15.

48. Levin et al., *supra* note 15, at 793–98; Mansfield, *supra* note 15, at 180; Cohen et al. *supra* note 15, at 24–27.

49. Cohen et al., *supra* note 15, at 18–19.

50. *Id*. at 19.

51. *Id*. at 19 n.44 (classifying—in their empirical study—complex technology industries as those with ISIC codes above 2900 and discrete technology industries as those falling below this number).

52. *Id*.

53. *Id*. *See also* Burk & Lemley, *supra* note 43, at 1657 (detailing how innovation in some fields like pharmaceuticals is likely to take the form of discrete new inventions).

embeds hundreds if not thousands of patents, many of them owned by third party companies.[54] In these industries, the value of patents and the patent regime is expected to be low relative to other appropriability mechanisms.[55] The converse is true for discrete technology industries where products embody a few patents owned by a few firms.[56] For example, pharmaceutical companies spend hundreds of millions of dollars in research and development with the hope of isolating a chemical compound that will ultimately justify the investment and will be secured with a few critical patents. The surveys' overall findings are reinforced by extant research which shows that large firms in complex product industries typically use and accumulate patents as a defensive mechanism, mainly to achieve freedom to operate, or as bargaining chips in cross-licensing negotiations with other large firms.[57] It is significant to recognize these findings, however, are limited for large firms with research and development or manufacturing capabilities.

Recent studies, however, provide evidence that smaller, specialized firms in complex technology industries use patents to realize competitive advantage through exclusivity.[58] One study shows that specialized chip design firms use patents to commercialize innovations.[59] Another study shows that early stage firms in the software industry rely on patents for competitive advantage.[60] Because there is support for the claim that the industry category is not as important to determine patent value for any particular company, this generates the first hypothesis:

> Hypothesis 1: The Industry variable will not explain *amicus* brief patent right advocacy before the U.S. Supreme Court.

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54. *See* Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1992 (2007) (discussing how "literally thousands of patents have been identified as essential to the proposed new standards for 3G cellular telephone systems," as well as problems stemming from the patents being held by parties who are not the producers of the product). It is often difficult if not impossible for a large company in a complex technology industry to navigate a patent thicket without infringing on someone else's patents. For example, the company Research in Motion, maker of the ubiquitous *Blackberry* device was famously the target of a patent hold-up lawsuit by a small company that owned some of the critical patents surrounding wireless email technology. *See* Gerard N. Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, 82 NOTRE DAME L. REV. 1809, 1810 (2007) (discussing the Blackberry case as an example of opportunistic licensing).

55. Burke and Lemley, *supra* note 43, at 1584; Lemley & Shapiro, *supra* note 54, at 1991; Levin et al., *supra* note 15, at 785. From a policy perspective, firms operating in complex technology industries are considered to be exposed to the risk of the anti-commons. *See* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 698 (1998) (discussing how individuals and society may underuse innovations because multiple parties own different property rights that deter coordination); Cohen et al., *supra* note 15, at 6 (suggesting that appropriability is low for industries such as electrical equipment).

56. Cohen et al., *supra* note 15, at 21.

57. *See* Peter C. Grindley & David J. Teece, *Managing Intellectual Capital: Licensing and Cross-Licensing in Semiconductors and Electronics*, 39 CAL. MGMT. REV. 8, 8 (1997) (discussing proactive management of intellectual capital).

58. *See* Hall & Ziedonis, *supra* note 16, at 110 (noting that "patents were mainly used to improve these firms' competitive position *vis-à-vis* direct market rivals").

59. *See id*. at 120 (concluding from interviewees' statements that "patent rights are required to secure venture capital and other financing for entry as a specialized semiconductor design firm," and that these so called fab-less chip designers specialize in licensing their unique designs to companies who can manufacture them).

60. Graham et al., *supra* note 16, at 1288.

B. Company Size

Company size may be an important factor to help explain whether a company favors stronger or weaker patent rights. The Carnegie Mellon survey, for example, found similar use of patent governance mechanisms, (e.g. out-licensing) by companies in complex *and* discrete industries.[61] As mentioned by that study's authors, this suggests cross-firm differences within industries that reflect variance or heterogeneity within any one industry.[62] One source of heterogeneity within a given industry is firm size.[63] This suggests that smaller firms that participate in complex technology industries may view individual patent rights as an important appropriability mechanism, in contrast to larger incumbents in the same complex technology industry. This finding has been supported by other studies[64] and may occur for the following reasons.

Small firms often have a niche technology specialization that encompasses only a few patented elements relative to larger firms. They may, therefore, participate in a complex technology industry as a modular, i.e. sub-system innovator.[65] Small firms may also be forced to trade patent rights in the market for ideas because of their under-resourced position where they lack downstream complementary assets during a pre-paradigmatic technology cycle.[66] We, therefore, decided to test the existence of patent right advocacy heterogeneity among firms of different sizes using the *amicus* brief sample:

> Hypothesis 2: Large firm size will be associated with a decrease in stronger patent right advocacy before the U.S. Supreme Court.

C. Idiosyncratic Patent Capabilities

Some companies use legal strategies and resources in ways that offer them unique comparative advantage relative to other companies.[67] Another source of variability in the way companies advocate in favor of a particular patent outcome may be due to different knowledge-sensing and transforming capabilities.[68] Some firms, e.g. Texas Instruments and National Semiconductorare, recognized as having better out-licensing capabilities than

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61. Cohen et al., *supra* note 15, at 18–20.

62. *Id*. at 21.

63. *Id*. at 12.

64. *See, e.g.*, Graham et al., *supra* note 16, at 1255, 1259–61 (2009) (discussing how patents effect entrepreneurs); Timothy S. Simcoe et al., *Competing Standards? Entrepreneurship, Intellectual Property, and Platform Technologies*, 18 J. ECON. & MGMT. STRATEGY 775, 782 (2009) (discussing the probability of lawsuits between small and large firms).

65. Gary P. Pisano & David J. Teece, *How to Capture Value from Innovation: Shaping Intellectual Property and Industry Architecture*, 50 CAL. MGMT. REV. 278, 278–96 (2007).

66. William J. Abernathy & James M. Utterback, *Patterns of Industrial Innovation*,7 TECH. REV., June–July 1978, at 41, 44–46; Joshua Gans, D.H. Hsu & Scott S. Stern, *When Does Start-up Innovation Spur the Gale of Creative Destruction?*, 33 RAND J. ECON. 571, 572 (2002).

67. *See* David Orozco, *Rational Design Rights Ignorance*, 46 AM. BUS. L.J. 573, 603–04 (2009) (discussing how Apple strategically integrates design patents, trademarks and trade dress to secure the three-dimensional and ornamental shape of its *iPod* media player).

68. *See* David J. Teece et al., *Dynamic Capabilities and Strategic Management*, 18 STRAT. MGMT. J. 509, 520–21 (1997) (discussing the value of "the ability to sense the need to reconfigure the firm's asset structure, and to accomplish the necessary internal and external transformation").

others.[69] Exploiting an offensive intellectual property business model can, therefore, impact the level of advocacy if a firm is uniquely predisposed to benefit from monetizing patent rights *vis-à-vis* its competitors in the same or similar industry.[70] An idiosyncratic ability to exploit intellectual property is defined in this article as an offensive patent capability.

Alternately, other firms may be more adept at manufacturing, modifying and improving technologies, and commercializing them rapidly.[71] These commercialization-focused firms may have weak patent monitoring or in-licensing capabilities and, therefore, suffer eventual consequences such as patent litigation or permanent injunction threats due to an inability to monitor the relevant patent rights terrain.[72] In some cases, the transaction costs involved with finding every available patent to avoid infringement may be inordinately high, especially in cases involving complex technologies or patent hold-ups.[73]

By practicing an unlicensed third-party technology these firms, however, can establish important strategic advantages such as an installed user base, reputation effects as pioneers, a first-mover advantage, and related experience.[74] The ability to gain these advantages at the expense of patent litigation risk is defined here as a defensive patent capability. The above mentioned evidence related to firm-specific patent capabilities generates the following two additional hypotheses:

> Hypothesis 3: An offensive patent capability will be positively associated with stronger patent right advocacy before the U.S. Supreme Court.
>
> Hypothesis 4: A defensive patent capability will be negatively associated with stronger patent right advocacy before the U.S. Supreme Court.

IV. EMPIRICAL METHODOLOGY

A. The Sample of Amicus Briefs and the Coding Protocol

Given that the creation of the CAFC was a watershed event in patent

69. *See* KEVIN G. RIVETTE & DAVID KLINE, REMBRANDTS IN THE ATTIC: UNLOCKING THE HIDDEN VALUE OF PATENTS 125 (Harvard Business School Press 2000) (giving examples of revenue earned from patent licensing).

70. *Id*.

71. *See* JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 50–51 (Princeton Univ. Press 2009) [hereinafter PATENT FAILURE] (discussing Kodak's commercialization of technologies that was eventually found to be infringement).

72. These threats are compounded if transaction costs are high as in the case of a patent hold-up. Lemley & Shapiro, *supra* note 54, at 1994–96.

73. *See generally id.* at 1995 (detailing several ways in which firms may be unable to discover relevant patents).

74. *Cf.* PATENT FAILURE, *supra* note 71, at 50–51 (describing Kodak's development of technologies for its products that was later held to be infringement).

policy,[75] this article will examine *amicus* briefs filed in Supreme Court patent cases since 1982. Twenty three patent-related cases originally considered by the CAFC have been subsequently reviewed by the U.S. Supreme Court. In seven of these Supreme Court cases, firms did not file *amicus* briefs and these cases are therefore excluded from the present analysis, leaving a sample of sixteen cases listed in Table 1.

75. The CAFC was created in 1982 with the stated purpose of harmonizing patent laws. Commentators largely agree that the court has created stronger patent rights overall, in addition to greater legal certainty. *See* ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 9–10 (2004) (discussing the creation of the CAFC and the patent law consequences).

TABLE 1. SUPREME COURT PATENT CASES AFTER 1982

Case Name	Year	Citation	Did Firms File Amicus Briefs?
1. Dennison Manufacturing Co. v. Panduit Corp.	1986	475 U.S. 809	No
2. Christianson et al. v. Colt Ind. Operating Corp.	1988	486 U.S. 800	No
3. Eli Lilly and Company v. Medtronic, Inc.	1990	496 U.S. 661	Yes
4. Cardinal Chem. Co. v. Morton Int., Inc.	1993	508 U.S. 83	Yes
5. Markman & Positek, Inc. v. Westview Instruments, Inc.	1996	517 U.S. 370	Yes
6. Warner-Jenkinson Co. v. Hilton Davis Co.	1997	520 U.S. 17	Yes
7. Wayne K. Pfaf v. Wells Electronics, Inc.,	1998	525 U.S. 55	Yes
8. Q. Todd Dickinson v. Mary E. Zurko et al.	1999	527 U.S. 150	No
9. Florida Prepaid v. College Savings Bank	1999	527 U.S. 627	No
10. Donald E. Nelson v. Adams, USA, Inc.	2000	529 U.S. 460	No
11. J.E.M. Supply, Inc. v. Pioneer Hi-Breed, Inc.	2001	534 U.S. 124	Yes
12. Festo Corp. v. Shoketsu Co., Ltd.	2002	535 U.S. 722	Yes
13. The Holmes Group, Inc v. Vornado, Inc.	2002	535 U.S. 826	No
14. Merck KGaA v. Integra LifeSciences I, Ltd.	2005	545 U.S. 193	Yes
15. Unitherm, Inc. v. Swift-Eckrich, Inc.	2006	546 U.S. 394	No
16. Illinois Works, Inc. v. Ind. Ink, Inc.	2006	547 U.S. 28	Yes
17. Ebay Inc. v. MercExchange, L.L.C.	2006	547 U.S. 388	Yes
18. Labcorp v. Metabolite Laboratories, Inc.	2006	548 U.S. 124	Yes
19. Medimmune, Inc. v. Genentech, Inc.	2007	127 S. Ct. 764	Yes
20. Microsoft Corporation v. AT&T Corp.	2007	127 S. Ct. 1746	Yes
21. KSR International Co. v. Teleflex Inc.	2007	127 S. Ct. 1727	Yes
22. Quanta Computer v. LG Electronics, Ltd.	2008	128 S. Ct. 2109	Yes
23. In Re Bilski	2009	130 S. Ct. 3218	Yes

Caldeira and Wright comprehensively classify parties who file *amicus* briefs.[76] Given the nature of the data, their interest group classification is based on the most common thread among parties, the unit of membership. Institutional groups like corporations, for example, differ from citizen groups and advocacy groups, since they are not comprised of fee-paying members.[77] A method was then followed for selecting patent-owning firms from the total sample of *amicus* briefs. Some organizations would appear to readily fall into the category of a firm, e.g. university offices of technology transfer. These entities are typically not-for-profit, despite the fact that they may obtain patent licensing royalties.[78] Although university technology transfer offices are not-for-profit entities that license patents, they are not included in the sample of companies. The reason why is because the primary mission of their larger institutional setting is non-profit, introducing more noise than insights. Likewise excluded from the total sample of briefs are those firms that did not clearly and unambiguously state which party was favored, i.e. the firm stated somewhere in the brief that they favored a reversal of the CAFC's ruling but then stated in their conclusion that they favored "neither party."

For the 16 Supreme Court patent cases (listed in Table 1) the authors read and manually coded each of the 709 separate *amicus* briefs filed by various patent right stakeholders, including firms, universities, individuals, academics, government groups, advocacy organizations, and peak organizations. Within this sample, a few firms were present as *amicus* brief advocates in more than one case. These firms were counted only once throughout each sub-grouping of strong and weak patent advocates. Amicus briefs filed by the various stakeholders expressing their clear and explicit advocacy positions were obtained from Lexis Nexis.[79] All firms were then coded as either supporting the patent owner (plaintiff) or the patent non-owner accused of infringement (defendant) as stated in their briefs. Through this process a resulting total of 191 separate company briefs were identified.

B. Empirical Measures

The sampled company briefs were then coded according to whether the company belonged to either a complex or discrete technology industry following the logic of Cohen et al.[80] Firms having SIC codes[81] less than 2900 were coded as belonging to a discrete technology industry. Firms with SIC codes greater than 2900 were coded as belonging to a complex technology industry using dummy variables. The SIC codes for ten firms could not be

76. *Amici Curiae Before the Supreme Court*, *supra* note 34, at 783–84.

77. *See Organized Interests*, *supra* note 30, at 1010–11 (discussing various levels of involvement by interest groups).

78. JOEL WEST, OPEN INNOVATION: RESEARCHING A NEW PARADIGM (Henry Chesbrough et al. eds., Oxford University Press 2006).

79. The database of companies, their briefs and advocacy positions is available by emailing either of the authors.

80. *See generally* Cohen et al., *supra* note 15 (delineating industries into "discrete" and "complex" categories based upon the relative simplicity of the industries).

81. SIC Codes are standardized classification codes assigned to companies based on their industry.

verified by this process. The authors coded these firms independently and the inter-coder reliability was satisfactory at seventy percent. The coders then resolved the differences regarding the last three firms. A similar procedure was used to assign dummy variables and categorize each firm as a small or medium-sized enterprise (SME) or a large firm, by verifying whether the firm employed more than 500 employees[82] as reported in various databases such as Hoovers and Gale.

To obtain data on firm offensive or defensive patent capabilities, the authors searched the Lexis Nexis database for patent litigation cases since 1982, searching under company name and the keyword "patent" in the outcome and procedural posture search fields. Several hundred reported decisions at both the trial and appellate court levels were individually and manually searched to avoid repetition and irrelevant cases. Cases where the company was listed as the plaintiff alleging patent infringement were totaled to measure offensive patent predisposition. Cases where the company was listed as the defendant accused of infringement were totaled to measure defensive patent predisposition. Patent cases involving declaratory judgments[83] may be relevant to measure a defensive patent disposition. Declaratory judgments, however, were omitted, since the firms utilizing this defensive litigation tactic were highly correlated with the cases where they were listed as defendants in subsequent patent infringement cases.

C. The Binomial Logit Model

Since the test on the response variable of patent strength advocacy (stronger versus weaker patent right advocacy) is binary, a binomial logit model is an appropriate modeling technique to measure and test the strength and associations of the four independent variables on the response. The logit will generate accurate results because there is balanced variability in the proportion of firms with differing patent right advocacy positions. In fact, the advocacy is largely split down the middle with a mean advocacy value of 0.48 among all firms in the sample.

To test these relationships, we modeled the probability of a firms' advocacy in favor of strong patent rights (STRONG_ADV) as a function of the number of cases where the company was a plaintiff in patent litigation (CASES_P), the number of cases where the company was a defendant in patent litigation (CASES_D), a dummy variable (LARGE_CO) to indicate whether the firm is a small or medium sized enterprise (0) or a large firm (1), and a dummy variable (DISC_IND) to indicate whether the firm is in a complex technology field (0) versus a discrete technology field (1). Specified in this manner, the probability that any company will advocate in favor of strong patent rights in their amicus briefs is:

82. Following the procedure of John R. Allison, et al. *Valuable Patents*. GEO. L.J., 435, 435 (2004).

83. In a declaratory patent suit, an alleged patent infringer requests the court to declare non-infringement, patent invalidity and unenforceability. MARTIN J. ADELMAN ET AL., CASES AND MATERIALS ON PATENT LAW, 1194–95 (1998).

$STRONG\_ADV_i = ß0 + ß1(CASES\_P)_i + ß2(CASES\_D)_i + ß3(DISC\_IND)_i + ß4(LARGE\_CO)_i + \varepsilon$

All results were tested at a 5% significance level. The descriptive statistics and correlations for the independent variables, which are further discussed below, are shown in Table 2.

TABLE 2. DESCRIPTIVE STATISTICS

	M	**SD**	**N**	**STRONG_ADV**	**CASES_P**	**CASES_D**	**DISC_IND**	**LARGE_CO**
STRONG_ADV	0.48	0.499	191	1				
CASES_P	1.39	2.330	191	0.123 (.089)	1			
CASES_D	2.32	4.888	191	-0.231 (0.001)	.279 (0.000)	1		
DISC_IND	0.17	0.379	191	0.110 (.129)	0.186 (0.010)	-0.036 (.620)	1	
LARGE_CO	0.68	0.467	191	-0.546 .000)	0.201 (0.005)	.308 (.000)	.105(.148)	1

D. Results

The model overall improved prediction of patent right advocacy from .48 based on a random allocation to 78.5%. The Nagelkerke R Squared was .481. Offensive patent capability measured by plaintiff litigation cases (CASES_P) is positively and significantly associated with strong patent advocacy, as hypothesized (ß = .377; t-value = 3.43). The defensive patent capability (CASES_D) is negatively and significantly associated with strong patent advocacy (ß = -.207; t-value = -1.95) also in support of the hypothesis. The industry variable measuring the impact of a discrete technology industry classification is positively associated with strong advocacy, suggesting discrete technology firms favor stronger patent rights. The coefficient for the industry variable, however, was not significant (ß = .721; t-value =1.51), supporting the hypothesis that industry plays an insignificant role in the sampled firms' amicus brief advocacy. Finally, the size of the firm is negatively associated with stronger patent right advocacy, indicating that large firms favor weak patent rights (ß = -2.886; t-value = -6.03). The four coefficient results are summarized as follows:

TABLE 3. IMPACT OF THE VARIABLES ON STRONG PATENT ADVOCACY

	Strong Patent Advocacy (STRONG_ADV)
Predictors	Parameter Estimate (t-value)
CASES_P	0.377 (3.43)
CASES_D	-0.207 (-1.95)
DISC_IND	0.721 (1.51)
LARGE_CO	-2.886 (-6.03)

V. DISCUSSION

These results contribute new findings to the patent rights literature. First, the results test the impact that patent capabilities, company size and industry membership have on patent-related *amicus* brief advocacy. The two idiosyncratic company variables that capture the offensive and defensive

capabilities that companies possess suggest that endogenous capabilities related to patents and patent management significantly explain and predict how a firm views patent rights, holding constant important external factors like industry membership and size. This suggests that unique firm-specific capabilities play a role in the firm's overall perception of the patent regime's strategic utility. From a policy perspective this suggests that policy makers, including judges and legislators, may want to examine the firm's internal capabilities as a factor to determine the degree of liability in cases of patent infringement. Also, some commentators suggest that firms have differing abilities to monetize patents.[84] The results obtained here support that view.

Another important finding is that industry membership is not significant for predicting patent advocacy at the U.S. Supreme Court. These findings, therefore, support the mixed results of prior empirical studies[85] that examine patent rights from both the perspective of large firms[86] versus smaller specialized firms.[87] The question of patent advocacy among a wide variety of firms in multiple industries is a function of a more nuanced dynamic than industry membership alone, as indicated by the lower significance value of the industry variable. The industry classification variable, therefore, failed to yield predictive power. A caveat must be added, however, since the coefficient for this variable was near the confidence level.

On the other hand, firm size, as hypothesized, is a significant predictor of patent right advocacy. Theoretically, this may be explained by analogizing the market for *amicus* advocacy as parallel to what scholars refer to as the market for corporate law. In the market for corporate law literature, there is some discussion about how corporate elites vie for control, often successfully, of corporate law in what has been called a "race to the bottom."[88] Large firm size may be a useful proxy to define a company as a member of the corporate elite in cases involving patent regulation. This is also in line with managerial scholarship surrounding the resource-based view of the firm which holds that larger firms with rare resources, such as complimentary assets and incumbent positions, may leverage these rare resources against smaller competitors or technology owners.[89] In this case, one may infer that large firms attempt to

84. *See* Ashish Arora & Marco Ceccagnoli, *Patent Protection, Complementary Assets, and Firms' Incentives for Technology Licensing*, 52 MGMT. SCI. 293, 293–308 (2006) (discussing how licensing is impacted by the ability to commercialize a technology).

85. Chien, *supra* note 9, at 3.

86. *See* Cohen et al., *supra* note 15, at 5 (examining firms with at least $5 million in sales or at least twenty people in their business units); *see also* Levin et al., *supra* note 15, at 790–91 (examining firms with publicly traded securities and consequently excluding small start ups from the sample).

87. *See* Graham et al., *supra* note 16, at 1266 (examining early-stage technology start-up companies); Hall & Ziedonis, *supra* note 16, at 103 (focusing mainly on the semiconductor industry).

88. *See* Lucian A. Bebchuk et al., *Does the Evidence Favor State Competition in Corporate Law*, 90 CALIF. L. REV. 1775, 1778 (2002) (arguing that state competition results in states providing rules that managers, but not necessarily shareholders, favor); Lucian A. Bebchuk & Allen Ferrell, *Federalism and Corporate Law: The Race to Protect Managers from Takeovers*, 99 COLUM. L. REV. 1168, 1171 (1999) (arguing that state competition leads to pro-management antitakeover laws).

89. *See* Rajshree Agarwal et al., *Reputations for Toughness in Patent Enforcement: Implications for Knowledge Spillovers via Inventor Mobility*, 30 STRATEGIC. MGMT. J. 1349, 1349 (2009) (discussing how a reputation for tough intellectual property enforcement can benefit larger more resource-rich firms who are

shape the legal landscape by filing *amicus* briefs to hinder the smaller firm's ability to appropriate their patented technology. A motive may be to improve the incumbent's bargaining position relative the smaller technology owner. These findings also support the evidence provided by prior studies, which show that patent advocacy reflects the importance of patent strategy, even within complex technology-based industries.[90] It also supports studies which show that firms with a resource-based advantage can use the law as a competitive tool to gain advantage over smaller companies.

The results are also relevant to patent policy, since there has been a recent trend in the courts towards weakening the patent regime through the implementation of targeted and select adjustments in patent appropriability. In the majority of most recent cases involving patent law, the U.S. Supreme Court has ruled in favor of defendants seeking greater flexibility in the patent regime.[91] The variance in the industry-related variable in this study provides some support for the claim that firms *within* an industry have varying patent preferences. From one perspective, since industry was not a predictor of patent advocacy, this may suggest that the Court has achieved a balance in choosing its cases and the legal implications they will have on firms across industries is likewise balanced as evidenced by the variety of industry advocates. Size, however, was a significant proxy for determining patent right preferences. Large firms, who have more access to complimentary assets and have a resource-based advantage, generally prefer to weaken patent rights. The adjustments the Supreme Court has made towards a liability rule, therefore, tend to favor large firms versus small firms *across* industries. This supports recent empirical research demonstrating that entrepreneurial firms in complex industries such as biotechnology and computer hardware rely on patents as crucial elements of competitive advantage.[92] The findings provided here suggest that the Court should, to balance matters, explore the use of patent policy levers that minimize the threat of rent seeking by large firms using patent litigation against smaller firms. One such policy lever is assessing direct competition or substitution in the marketplace as a factor used to grant

more able to absorb the high costs of litigation); David J. Teece, *Profiting From Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y. 285, 285 (1986) (discussing why innovators in a market do not always outperform their competitors). Commentators have also noted that the Supreme Court's jurisprudence has recently favored the interests of large companies in general. *See* Adam Liptak, *Justices Offer Receptive Ear to Business Interests*, N.Y. TIMES A1, Dec. 19, 2010 (citing and discussing Professor Lee Epstein's research).

90. Hall & Ziedonis, *supra* note 16, at 105–108.

91. *See* Bilski v. Kappos, 130 S. Ct. 3218, 3220–21 (2010) (affirming the CAFC and holding in favor of defendant with regards to the non-patentability of a business method claim); KSR Int'l Co. v. Teleflex Inc. et al., 55 U.S. 398, 399–405 (2007) (holding in favor of defendant in a manner that raises the patent obviousness standard); Microsoft Corp. v. AT&T Corp., 550 U.S. 437, 461–62 (2007) (holding in favor of the defendant to allow the importation of a product alleged to infringe a patent abroad); eBay Inc., et al., v. MercExchange, L.L.C., 547 U.S. 388, 388 (2005) (replacing a near automatic permanent injunction test with the traditional factor test); Merck KGaA v. Integra Lifesciences I, Ltd., 545 U.S. 193, 193 (2004) (refusing to broaden exemptions to patent law in the FDA's Safe Harbor law); Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 46 (2010) (discussing how the Supreme Court has in recent years favored more flexible and holistic patent law standards as opposed to the CAFC's formalistic, bright line rules).

92. *See* Graham et al., *supra* note 16, at 1297 (discussing how across the board, entrepreneurial firms rely on patenting to prevent others from copying their "products and services).

an injunction to a smaller firm litigating against a larger firm.[93]

This analysis also raises questions relevant to practitioners. Venture capitalists often view patents in small entrepreneurial firms as a precondition for investment.[94] If patent policy levers are not delicately implemented by the courts during litigation, a weaker patent appropriability environment may increase the risk premiums related to investments in start-up enterprises.[95] Future research may empirically assess whether that has been the case in light of the recent shift in patent policy towards a liability rule regime. Policymakers should also be apprised that a continued shift towards a patent liability regime may weaken the position of small entrepreneurial firms *across* industries and may increase the cost of capital for start-ups. The legislature and the courts may consider these findings in future instances where patent reform is called for.

There are some evident limitations of this study related to the sample selection, which involves only those companies that advocated before the U.S. Supreme Court. The number of Supreme Court *amicus* brief filers is relatively small and is potentially exposed to overrepresentation by outliers, i.e. firms that rely on patents to an extent that does not adequately represent the spectrum of companies in the overall economy. Amicus brief filers self-select by volunteering to file the briefs and the majority of these filers are in complex technology industries, which limits the generalizable conclusions of the data set. Further research needs to assess the validity of *amicus* brief data in specific industry contexts and the process by which firms decide whether to participate as *amici*. Also, it is possible that ideology may be a factor that helped overcome the collective action problem these firms surmounted.[96]

Signaling may also be a relevant factor that explains the type and amount of firms that file *amicus* briefs.[97] For example, some large firms may prefer not to file the briefs to avoid directly signaling their intent. Instead, some large firms may use trade or industry groups as proxies, or advocacy instruments. The top ten industry groups in the sampled *amicus* briefs are included below in Table 4.

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93. *See* eBay v. MercExchange, 547 U.S. at 394–95 (discussing the concept of irreparable harm).

94. Richard S. Gruner, *Corporate Patents: Optimizing Organizational Responses to Innovation Opportunities and Invention Discoveries*, 10 MARQ. INTELL. PROP. L. REV. 1, 11 (2006); Mark A. Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J. SMALL & EMERGING BUS. L. 137, 143 (2000).

95. Letter from various venture capital firms to The Honorable Patrick J. Leahy and The Honorable Arlen Specter (Nov. 6, 2007), *available at* www.patenthawk.com/blog_docs/071106_VC_letter_to_Senators.doc (discussing that venture-backed companies need strong patents and explaining "that defending against infringement is disproportionately burdensome for small venture-backed companies, while the benefit of infringing relative to the cost is disproportionately attractive to large companies").

96. *See generally* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (Harvard University Press1965) (discussing the ideology of group action in an economic context).

97. *See* MATIAS IARYCZOWER ET AL., JUDICIAL LOBBYING: THE POLITICS OF LABOR LAW CONSTITUTIONAL INTERPRETATION. ARGENTINA 1935–1998 (2004); Joseph P. Kalt & Mark A. Zupan, *Capture and Ideology in the Economic Theory of Politics*, 74 AM. ECON. REV. 3, 279, 281 (1984).

TABLE 4. TOP TEN INDUSTRY GROUPS FILING AMICUS BRIEFS

Rank	Industry Group	Briefs Filed
1	Biotechnology Industry Organization (BIO)	8
2	Intellectual Property Owners	7
3	Pharmaceutical Research and Manufacturers Association (Phrma)	6
4	Computer & Communications Industry Association	5
5	Business Software Alliance	5
6	Licensing Executives Society	3
7	Financial Services Roundtable	3
8	Software & Information Industry Association	3
9	American Automobile Manufacturers Association	2
10	Information Technology Industry Council	2

Since the proportion of *amicus* briefs is concentrated amongst firms in complex industries, this begs the question: are individual discrete industry firms outsourcing their *amicus* brief advocacy to industry groups such as Phrma? The opposite may be the case in complex industries, since the ratio of individual complex firms to trade associations is apparently larger. Why this is so remains an open question subject to future research.

An additional acknowledged limitation is that the study uses patent litigation data to measure companies' defensive and offensive patent capabilities. Very few patent disputes ever reach trial and this raises sampling questions. On the other hand, however, it is important to look at litigated cases since non-litigated settlements occur "in the shadow" of litigation.[98]

VI. CONCLUSION

This article aims to shed additional light on the patent advocacy behavior of a diverse set of companies. To do so, the article examines *amicus* briefs, a valuable and often overlooked data source that can be used to observe how firms attempt to shape patent regulation.[99] This research has further tested some classical assumptions regarding advocacy using *amicus* briefs as proxies for firm intent. The principal goal has been to examine important factors that impact a firm's patent advocacy. This private decision-making behavior is

98. Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1968 (2002).

99. Orozco and Conley, *supra* note 9; *see also* Chien, *supra* note 9, at 4–5 (discussing the role of amicus briefs in patent litigation).

impacted by idiosyncratic firm capabilities, industry, and size. The evidence supports the theory that intellectual property governance is shaped by technological factors, strategic interactions, and institutional capabilities.[100]

Further, the effort to identify companies and their patent advocacy aims to inform future policymaking in this important area of regulation. This is an important topic since there has been a shift from a property rule regime to a liability regime in the highest Court's patent jurisprudence. Weakening patent rights and shifting to a liability regime, as indicated by the empirical findings of this research tends to favor firms that are large and possess defensive patent capabilities. Whether this is a suitable patent policy remains to be further tested and assessed by future scholarly research.

100. Andersen and Konzelmann, *supra* note 19, at 16–21.