

TO *BILSKI*, AND BEYOND: AN EMPIRICAL ANALYSIS OF
JUDICIAL OPACITY ON PATENT LAW AND THE MODERN
ADMINISTRATIVE STATE

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Patentable subject matter is a critical issue in patent litigation, both at the administrative and judicial level. In a 2010 decision, Bilski v. Kappos, the Supreme Court significantly altered the standard for defining what is patentable subject matter by eliminating the physicality requirement and ruling that the Federal Circuit's "machine or transformation test" ("MOT") was no longer the sole litmus test for determining the patent eligibility of a process claim, but rather, was an "investigative clue." Many academics and commentators predicted that the Bilski decision would have an enormous impact on patent applicants, litigants, examiners, and other participants in the patent system. To date, however, there has been no comprehensive empirical study of Bilski's actual impact on patentable subject matter, either at the Patent and Trademark Office ("PTO") or at the courts.

This Note fills this gap by not only being the first to undertake an empirical study of Bilski's actual impact, but also by being the first to empirically study the doctrine of patentable subject matter as it is applied by PTO examiners. We analyzed eight years of PTO deci-

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sions—four years before and after *Bilski* was decided. We found compelling evidence that not only are PTO examiners more likely to issue Section 101 rejections for business method patents post-*Bilski* as compared to pre-*Bilski*, but they are also more likely to continue to rely on the MOT test in making Section 101 patentable subject matter rejections for applications that fall under business methods versus other classes, such as telecommunications. Finally, our results strongly suggest that patent applicants are picking up on these entrenched behavioral norms at the PTO by being more likely to cite to machines or recite transformations when drafting business method applications, as opposed to applications for medical diagnostics. These results present profound policy implications for business method patents, for the doctrine of patentable subject matter, and also for administrative law, more generally.

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I. INTRODUCTION

United States patent law grants those with patents a practical monopoly on their inventions, conferring an exclusive right to make, use, or

sell those inventions for a twenty-year period.¹ Patents are a means to protect creativity and foster competition. Indeed, patent law's origin lays in Article I of the U.S. Constitution: "The Congress shall have the power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries . . ." In drawing the boundaries of patentable subject matter, Congress has enacted several statutes to elucidate this broad objective, including Section 101 of the Patent Act, which states that a patent can be obtained for the invention of a new process, machine, manufacture, or composition of matter.² Courts have interpreted these boundaries by noting the Patent Act's legislative history, which reveals Congress intended for "anything under the sun that is made by man" to be patentable.³ The dynamic nature of modern innovation and technology, however, has left the law of patentable subject matter in flux.

It is an immutable truth that patentable subject matter has evolved into one of patent law's most important, yet notoriously elusive, doctrines. Courts, agencies, scholars, and the United States Congress have grappled with what types of "innovative" processes should be patentable under United States law. Most notably, the courts have oscillated between whether the test for patentable subject matter of processes or methods should contain a physicality requirement, especially as the nation moved out of the Industrial Age and entered the brave new world of the Information Age.⁴

Though the Supreme Court has largely stayed out of the patent world since the 1980s,⁵ in 2010 the Court decided *Bilski v. Kappos*, a case in which the Court was reviewing whether a method for mitigating risk in financial transactions by hedging could qualify as a process under Section 101.⁶ The Court rejected the patentability of this process and also made a very unanticipated move by holding that the machine-or-transformation

1. U.S. CONST. art. I, § 8.

2. 35 U.S.C. § 101 (2012).

3. S. REP. No. 82-1979, at 5 (1952).

4. The Federal Circuit first revealed its penchant for the physicality requirement by coining the Walter-Freeman-Abele test for mathematical algorithm process patents, under which the algorithm was "applied in any manner to physical elements or process steps." *In re Abele*, 684 F.2d 902, 904-05 (C.C.P.A. 1982). In 1998, the Federal Circuit briefly retreated from the physicality requirement by holding that software business method patents were patent eligible so long as the invention produced a "useful, concrete, and tangible result." *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998). In 2008, however, the Federal Circuit reverted back to the physicality requirement similar to the Freeman-Walter-Abele test by rejecting the "useful, concrete, and tangible test" in favor of the machine-or-transformation test, by insisting that a patentable process be limited by a machine or by a transformative or physical process step. *Bilski v. Kappos*, 561 U.S. 593, 660 (2010) ("In sum, it is my view that, in reemphasizing that the 'machine-or-transformation' test is not necessarily the sole test for patentability . . .").

5. The Court of Appeals for the Federal Circuit was established in 1982 to subsume most of the patent review caseload in the U.S. court system. Mark D. Janis, *Patent Law in the Age of the Invisible Supreme Court*, 2001 U. ILL. L. REV. 387, 388 (2001).

6. 561 U.S. at 599-600.

(“MOT”) test, which the Patent and Trademark Office (“PTO”) had been using to analyze the subject matter eligibility of process patents, should not be the sole test but instead should only be an investigative clue in determining the eligibility of a process under Section 101.⁷ But beyond that, the Supreme Court failed to provide any guidance to lower courts or to the PTO as to what types of processes should be patentable under United States law. As a result, much ink has been spilled over the predicted impact of the opinion on applicants, litigants, and other participants in the patent system, and specifically, on how *Bilski* will be applied by lower courts and by the PTO.⁸

In an era where non-physical process patents, particularly business method and medical diagnostic patents, have become so vital to the lifeblood of our competitive economy, resolution of this debate as to whether there should be a physicality requirement for process patents is of paramount importance. Today, six years after the Supreme Court decided *Bilski*, this Note attempts to start a conversation along the empirical dimension of patentable subject matter by analyzing the impact of the decision on PTO examiner behavior. We found compelling evidence that not only are PTO examiners more likely to issue Section 101 rejections for business method patents post-*Bilski* as compared to pre-*Bilski*, but they are also more likely to continue to rely on the MOT test in making Section 101 patentable subject matter rejections for applications that fall under business methods over other patent classes. Finally, our results strongly suggest that patent applicants are picking up on these entrenched behavioral norms at the PTO by being more likely to cite to machines or recite transformations when drafting business method applications as opposed to medical diagnostic applications.

Although our results primarily shed light on patent law and on how the *Bilski* decision seems to have had a corrosive effect on the business method patent and the development of the doctrine of patentable subject matter, they also provide insight into administrative law more generally, and on how agencies react by resorting to entrenched behavioral patterns when the courts provide unclear guidance.

Part II of this Note details the evolution of United States patent law and how courts have delineated the boundaries of patentable subject matter under the command of Section 101. Parts III and IV describe our theory and methodology; specifically, our Note contributes to the exist-

7. *Id.* at 614.

8. Dennis Crouch & Robert P. Merges, *Operating Efficiently Post-Bilski by Ordering Patent Doctrine Decision-Making*, 25 BERKELEY TECH. L.J. 1673, 1678 (2010) (noting that one of *Bilski*'s vices is a “bedeviling lack of guidance over what patent applicants and patentees can expect when § 101 is applied to a specific patent claim.”); Rebecca S. Eisenberg, *Wisdom of the Ages or Dead-Hand Control? Patentable Subject Matter for Diagnostic Methods After in Re Bilski*, 3 CASE W. RES. J. L. TECH. & INTERNET 1, 7 (2012); Eric J. Rogers, *Patenting Medical Diagnostic Methods: The MorT Strikes Back*, 17 J. TECH. L. & POL'Y 111, 114 (2012).

ing literature on *Bilski* by analyzing documents published on the Patent Application Information Retrieval (“PAIR”) system, which is the PTO registry system for information on the prosecution of patent applications. Part V presents our results, and Part VI presents our implications. Part VII concludes.

II. BACKGROUND

A. Statutory Basis for Patent Law

In order to obtain a patent, an invention must satisfy four basic requirements under the Patent Act: the claimed invention must be novel, non-obvious, useful, and must qualify as patentable subject matter.⁹ The courts and the PTO have treated these four requirements as categorically distinct—that is, whether or not a patent application falls on novelty bears no relationship to whether it also falls on patentable subject matter.¹⁰ This Note first focuses on patentable subject matter under Section 101 and the PTO’s application of Section 101 in light of the Supreme Court’s decision in *Bilski v. Kappos*.

In order “[t]o promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries,”¹¹ Congress has devised a patent reward system which grants inventors a limited monopoly in exchange for disclosing the details of his invention’s workings.¹² This disclosure introduces novel designs and technologies into the public domain, vastly increasing the public wealth of information and knowledge. Such a quid-pro-quo system—where innovators receive patents in exchange for disclosure—is thought to have a positive effect on public welfare by spurring innovation because it promotes the widespread availability of advanced technologies, technologies which might have otherwise remained trade secrets due to the enormous cost of innovation. The basic tenet of patent law, at least in certain sectors, is cumulative innovation.¹³

9. 35 U.S.C. §§ 101–03, 112 (2012).

10. It is worth emphasizing that some scholars argue that the PTO has started to allow some bleeding between the requirements for novelty and obviousness into patentable subject matter analyses. See, e.g., John F. Duffy, *Rules and Standards on the Forefront of Patentability*, 51 WM. & MARY L. REV. 609, 622–23 (2009); Kristen Osenga, *Ants, Elephant Guns, and Statutory Subject Matter*, 3 ARIZ. ST. L.J. 1087, 1115 (2007). As such, commentators have argued that the debate over the effects of *Bilski* on the law of patentable subject matter is nugatory, since most claims that will fall under a patentable subject matter analysis will most likely fail under a novelty analysis. This article does not discuss the effects of *Bilski* on the rejection rates in the categories of novelty, obviousness, or usefulness, but it would be the next step on the empirical ladder.

11. U.S. CONST. art. I, § 8.

12. 35 U.S.C. § 112; *In re Vaeck*, 947 F.2d 488, 496 (Fed. Cir. 1991).

13. See Arti K. Rai, *Fostering Cumulative Innovation in the Biopharmaceutical Industry: The Role of Patents and Antitrust*, 16 BERKELEY TECH. L.J. 813, 828–29 (2001) (“In the specific context of

That is, inventors typically develop their own inventions by building off of patents already granted and paying royalties to use those patents. Thus, the unbridled distribution of patents would force prospective innovators to secure licenses from too many patentees, which can ultimately have the effect of stifling rather than promoting innovation.¹⁴

In searching for some limiting principles, Congress constrained what types of purported innovations are patent-eligible through a series of statutory provisions; in order to obtain a patent for one's inventions, the invention must: (1) be patentable subject matter under Section 101; (2) be useful and novel under Section 102; (3) be nonobvious under Section 103; and (4) provide a specification that discloses the details of the inventions, including the best mode of carrying it out and how to make and use it under Section 112.¹⁵ Over time, the Supreme Court carved out a series of exceptions to these Congressional requirements, all in concerted efforts to calibrate a patent regime that is not too conservative and not too liberal. As such, patentable subject matter has grown to be one of the most important doctrines in patent law, giving rise to a rich body of case law.¹⁶

B. *The History of Process Patents: 1982–2016*

Though the Patent Act does not provide any express limitations on patentable material, courts, starting in the 1800s, decided that inventions that satisfied the requirements of Section 101 but merely constituted “laws of nature, physical phenomena, and abstract ideas” would not qualify as patentable subject matter under Section 101.¹⁷ As such, process

the biopharmaceutical industry, the claim that broad, monopoly-conferring rights on nascent innovation can provide a necessary spur to further innovation may well have merit.”).

14. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 141 (1989) (noting that “[f]rom their conception, the federal patent laws have embodied a careful balance between the need to promote innovation and the recognition that imitation and refinement through imitation through imitations are both necessary to invention itself and the very lifeblood of a competitive economy.”) (quoting U.S. CONST. art. I, § 8.); *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998) (“The balance between the interest in motivating innovation and enlightenment by rewarding invention with patent protection on the one hand, and the interest in avoiding monopolies that unnecessarily stifle competition on the other, has been a feature of the federal patent laws since their inception.”).

15. 35 U.S.C. §§ 101–03, 112 (2012).

16. See Richard S. Gruner, *Why We Need a Strong Patent System and When: Filling the Void Left by the Bilski Case*, 28 SANTA CLARA COMPUTER & HIGH TECH. L.J. 499, 501 (2012) (“Because patentable subject matter criteria limit the outer boundaries of the patent system and its effects in this way, these criteria are among our most important patent law standards.”).

17. *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980); *Parker v. Flook*, 437 U.S. 584, 598 (1978). The most famous wave of process eligibility patent decisions began with a trilogy of cases in 1972, when the Supreme Court decided *Gottschalk v. Benson* and rejected a claim for a computer-implemented algorithm for “converting binary-coded decimal (BCD) numerals into pure binary form” because algorithms were categorically ineligible for patent protection.” 409 U.S. 63, 64 (1972). Next, the Supreme Court in *Parker v. Flook* decided that a claim directed to an algorithm is patent eligible only if the application of that principle is incentive. 437 U.S. at 588. Finally, in *Diamond v. Diehr*, the

patents typically undergo a rigorous analysis under the “abstract idea” category.¹⁸

In 1982, the Federal Circuit first devised the Walter-Freeman-Abele test—an early variant of the MOT test—for determining whether a process was patentable or an unpatentable abstract idea under which claims are first analyzed to determine if there is any mathematical algorithm and if so, whether the algorithm is “applied in any manner to physical elements or process steps.”¹⁹

In 1999, a time during which software and business method process claims were burgeoning, the Federal Circuit abandoned the Walter-Freeman-Abele test in favor of the “useful, concrete, and tangible result” test, under which process claims were patentable regardless of the form in which they were implemented, so long as the invention produced a “useful, concrete, and tangible result.”²⁰ Finally, five years later, the Federal Circuit wreaked havoc in 2008 when it revisited the issue of patentable subject matter for process patents in a sua sponte en banc review of *In re Bilski*. On review, the Federal Circuit rejected both the “useful, concrete, and tangible result” test as well as the Walter-Freeman-Abele and implemented the MOT test as the sole litmus test for measuring whether a claimed process was patentable or an unpatentable abstract idea. Under the MOT test, a process qualifies as patentable subject matter if (1) it is implemented by a particular machine or (2) it transforms an article from one state to another.²¹

According to commentators, although this test did provide predictability for patent applicants and clarity—in an administrative sense²²—for patent examiners, it was also criticized by many as normatively and pragmatically inappropriate. Although critics conceded that the MOT

Supreme Court upheld the patent eligibility of a computer program that controlled the physical process. 450 U.S. 175 (1981).

18. Sarah Outlaw, *Will Policy Concerns Invalidate Myriad Genetics' Gene Patents? A Breakdown of Various Judicial Approaches to Analyzing Patentable Subject Matter*, 43 CUMB. L. REV. 529, 554 (2013) (“An obstacle many process patents must overcome is avoiding the realm of unpatentable “abstract ideas.”).

19. *In re Abele*, 684 F.2d 902 (C.C.P.A. 1982), abrogated by *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

20. *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998), abrogated by *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (“Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces ‘a useful, concrete, and tangible result’—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.”); see also *AT&T Corp. v. Excel Commc'ns, Inc.*, 172 F.3d 1352, 1358 (Fed. Cir. 1999), abrogated by *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

21. *Bilski v. Kappos*, 561 U.S. 593, 605 (2010).

22. JEFFREY E. YOUNG, *Patentable Business Methods: Testing the Limits of Bilski-Data Transformation*, ALSTON & BIRD INTELL. PROP. ADVISORY 2, 11 (Feb. 19, 2009), available at http://www.alston.com/files/publication/80919578-6eb3-4313-82fb-c350ff262148/presentation/publication_attachment/f8934a38-90b8-4922-844e-c924760a46d2/bilski%20data%20transformation.pdf.

test was an appropriate tool for assessing patentable subject matter during the industrial era, when most process claims were tied to mechanical inventions or machines,²³ with the transition to the Information Age, they feared that novel methods of conducting business transactions or determining personalized dosages of new pharmaceuticals would be erroneously rejected under the MOT test: although their ingenuity and novelty warrants a patent, they are neither “machines” nor do they “transform” anything.²⁴ As such, the Supreme Court redefined the test for patentable subject matter by responding to those concerns in the *Bilski* decision.²⁵

The Supreme Court’s grant of certiorari in *Bilski v. Kappos* in 2009 ignited several theories in the patent law world that the decision would be groundbreaking. The patent claim at issue in *Bilski* was a method of minimizing losses connected to the price fluctuations in the commodities energy market by hedging risk.²⁶ The reviewing patent examiner rejected the application, explaining that it “[was] not implemented on a specific apparatus and merely manipulate[d] [an] abstract idea”²⁷ On appeal to the Federal Circuit, the court held almost unanimously that since Mr. Bilski’s claimed method did not recite a “particular machine or apparatus,” nor did it “involve transforming an article into a different state or thing,” his claimed method of “hedging risk” was unpatentable.²⁸ In other words, the court opined that since Mr. Bilski’s claimed method failed to satisfy the MOT, it was unpatentable.²⁹

Given the Federal Circuit’s historically documented inability to settle on any one particular test for determining the patent eligibility of process patents, it was not surprising to many when the Supreme Court granted certiorari in *Bilski v. Kappos* in 2009. On appeal, the Supreme Court ultimately rejected the MOT test as the sole test of subject matter eligibility and declined to categorically exclude business method patents from the ambit of patentable subject matter.³⁰ Notably, the Supreme Court further held that the MOT test remained “a useful and important

23. *Bilski*, 561 U.S. at 605.

24. *See, e.g., id.* at 605–06 (pointing out that numerous amicus briefs argue “the machine-or-transformation test would create uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals.”) (citing Brief for Business Software Alliance 24–25; Brief for Biotechnology Industry Organization et al. 14–27; Brief for Boston Patent Law Association 8–15; Brief for Houston Intellectual Property Law Association 17–22; Brief for Dolby Labs., Inc., et al. 9–10).

25. *Id.* at 594.

26. *Id.*

27. *Id.* at 600 (quotations omitted).

28. *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008) aff’d but criticized sub nom. *Bilski v. Kappos*, 561 U.S. 593.

29. Thus was born the official version of the machine or transformation test, which sets forth two basic principles for determining the patent eligibility of a process claim under 35 U.S.C. § 101. In the Federal Circuit’s own words, “[a] claimed process is patent-eligible under 101 if: (1) it is tied to a particular machine or apparatus; or (2) transforms an article into a different state or thing.” *Id.* at 962.

30. *Bilski*, 561 U.S. at 604.

clue, an investigative tool for determining whether some claimed inventions are processes under [Section] 101” but did not set out other rules or factors that should be considered in lieu of or in addition to the MOT test.³¹ What is more, the Supreme Court failed to generate a majority opinion on an issue that had been haunting the patent community for almost a decade: whether or not business method patents should be categorically excluded from the realm of patentable subject matter. Thus, while the Supreme Court presumably set out to provide some guidance in the area of patentable subject matter, it ended up creating more questions than it answered.

C. *In the Wake of Bilski: 2010–2016*

Scholars and commentators have criticized the *Bilski* opinion because it provided no tractable guidelines for determining a patent eligible process under Section 101.³² This resulting ambiguity was moderately clarified by guidance issued by the PTO in July 2010, just one month after the Court’s decision in *Bilski*.³³ In these guidelines, the PTO listed the recitation of a machine or transformation as one of many “Factors Weighing Towards Eligibility,” including whether the claim is being directed towards applying a law of nature and whether the claim is more than a mere statement or a concept.³⁴ Conversely, the guidelines cited the lack of a recitation of a machine or transformation as one of many “Factors Weighing Against Ineligibility” highlighting many others including the claim’s lack of direction to an application of a law of nature, or the claim being a mere statement of a general concept.³⁵ Thus, while the guidelines continue to highlight the continued viability of the MOT test, by no means did they intimate that the MOT test is the sole litmus test for determining the patent eligibility of claims.

Nonetheless, the Supreme Court’s refusal to provide any tractable guidance, beyond the flimsy “investigative tool” language, has become a concern for the industry and practitioners, who lament the vague generality of the *Bilski* decision, and the Court’s failure to clearly delineate the

31. *Id.*

32. The amicus briefs submitted to the Court by technology companies like Microsoft and Google asked for a bright-line test to determine what was patentable material, but these pleas were seemingly unheard by the Court. Steve Lohr, *Bilski Ruling: The Patent Wars Untouched*, N.Y. TIMES (June 28, 2010, 7:31 PM), <http://bits.blogs.nytimes.com/2010/06/28/bilski-ruling-the-patent-wars-untouched/?module=Search&mabReward=relbias%3Aw%2C%7B%22%22%3A%22R1%3A15%22%7D> (“The court decision, said Edward Black, president of the Computer and Communications Industry Association, would worsen the uncertainty of companies that are targets of patent lawsuits, often by firms that only hold patents and have no other business (otherwise known as patent trolls).”).

33. Memorandum from Robert W. Bahr, Acting Assoc. Comm’r for Patent Examination Policy, to the Patent Examining Corps. (July 27, 2010), *available at* http://www.uspto.gov/patents/law/exam/bilski_guidance_27jul2010.pdf [hereinafter Bahr Memo].

34. *Id.*

35. *Id.*

scope of patentable subject matter for process patents.³⁶ This ensuing uncertainty over the appropriateness of the MOT test as the sole litmus test for determining the patent eligibility of process claims has implications on two pivotal actors of the patent system that illuminate our Phase I and II analyses: patent examiners and patent applicants.

One study conducted by Dolcera, a technology company that conducts extensive research on patents and intellectual property issues, analyzed the effects of the Federal Circuit's decision in *In re Bilski*.³⁷ Dolcera reviewed three categories of method patents: software, medical technology (including medical devices and diagnostics), and pharmaceutical patents.³⁸ Dolcera tracked the kinds of rejections the PTO made and noted whether the rejection was made under Sections 101, 102, 103, or 112; the study also tracked which rejections mentioned the Federal Circuit's *In re Bilski* decision.³⁹ The results of the study indicated that software patent rejections were on the rise since 2008 when the *In re Bilski* decision was announced.⁴⁰ Additionally, the study found that the *Bilski* decision was affecting the rejection of medical diagnostic patents to a much higher degree than anticipated.⁴¹

Although this study provides a good indication of which patent classes might be most affected by the Federal Circuit's decision, it does not reflect the consequences of the Supreme Court's decision to discard the exclusive use of the MOT test in determining patent eligibility of process patents. Though there has been much anecdotal and normative discussion on the potential effects the *Bilski* decision will have on the patent world, there is strikingly little empirical evidence available on the subject.

This Note finally resolves these many controversies that are lurking in the background of patentable subject matter by being the first to analyze: (1) how the Supreme Court's decision has impacted the incidence of patentable subject matter rejections in business method and medical diagnostic patent claims; and (2) how the Supreme Court's decision has impacted the PTO examiners' proclivities to continue using the MOT test as the sole litmus test for measuring the patentability of patents, and

36. Douglas J. Levy, *Intellectually Indecisive: Patent Attorneys Say "Bilski" Ruling Didn't Give Necessary Guidance*, MICH. LAW. WKLY. (July 12, 2010), available at <http://www.youngbasile.com/pdf/Glassmeyer%20071210.pdf>; Dennis Crouch, *Bilski v. Kappos*, PATENTLYO (June 28, 2010), <http://patentlyo.com/patent/2010/06/bilski-v-kappos-business-methods-out-software-still-patentable.html>; Lohr, *supra* note 32.

37. "*In re Bilski*:" *A Threat to All Business Method Claims?* DOLCERA IP & KNOWLEDGE SERVICES (Mar. 26, 2015), <http://docslide.us/documents/dolcera-ip-knowledge-services-in-re-bilski-a-threat-to-all-method-claims.html>.

38. *Id.*

39. *Id.*

40. *Id.*

41. *Id.*; Press Release, Dolcera, Will Your Patents Survive the Bilski Decision (Jul. 20, 2009), available at <http://www.prlog.org/10286875-will-your-patents-survive-the-bilski-decision.html>.

relatedly, how it has impacted patent applicants' drafting patterns, specifically, whether they will themselves recite machines or recite transformative steps in efforts to appeal to the PTO's entrenched behavioral norms.⁴²

III. THEORY AND HYPOTHESES

The Supreme Court's failure to provide direction in the area of patentable subject matter motivates both Phase I and Phase II of our analyses.

A. *Phase I: Increase in Section 101 Rejections*

With regards to the implications of *Bilski* on patent examiners, many commentators have continued to debate the fate of two types of process claims: business methods and medical diagnostics. With regards to business method patents, commentators argue that on the one hand, the majority's decision to decline to exclude business methods as *per se* unpatentable subject matter⁴³ signals to some that the decision was a victory for prospective business method patentees.⁴⁴ On the other hand, others have argued that the Supreme Court's *Bilski* decision was not a complete victory for business method patents, citing to the cryptic four-justice concurrence,⁴⁵ in which Justices Stevens, Ginsburg, Breyer, and Sotomayor wrote that instead of rejecting Mr. Bilski's claim on the basis that it was an abstract idea, it would have been better to reject Mr. Bilski's claim as unpatentable because "it describes only a general method of engaging in business transactions—and business methods are not patentable."⁴⁶

In addition to business method patents, there is also heated controversy among academics as to whether and to what extent medical diagnostics, as a class, will be affected by the *Bilski* decision. In the pre-*Bilski* world, medical diagnostic patents were analyzed under the transformation prong of the MOT test.⁴⁷ Additionally, in *Prometheus Laboratories, Inc. v. Mayo Collaborative Services*, another patentable subject matter decision, the Federal Circuit ameliorated some concerns about the prospects of medical diagnostic patents by stating that patent claims

42. John V. Biernacki, *Key Strategies in Drafting Business Method Patent Claims*, in THE IMPACT OF *BILSKI* ON BUSINESS METHOD PATENTS 121, 141 (2011) ("[C]ourts will continue to rely on chiefly on the MOT test because they have grown more familiar with this systematic test. A concern could be that the additional arguments might be essentially 'ignored' and the MOT test applied by rote.").

43. *Bilski v. Kappos*, 561 U.S. 593, 605–07 (2010).

44. Mark A. Lemley et al., *Life after Bilski*, 63 STAN L. REV. 1315, 1319 (2011).

45. Rob D. Powell, Note, *Bilski v. Kappos: A Breath of Fresh Air or Resuscitating Uncertainty for Business Process Method Patents in the Information Age?*, 40 CAP. U. L. REV. 741, 760 (2012).

46. *Bilski*, 561 U.S. at 614.

47. *Id.* at 608–09.

which refer to data gathering are transformative, but it did so in a fairly subjective way.⁴⁸ One commentator suggested this subjectivity could have a dire effect on the analysis of diagnostic methods by making it unclear if “any diagnostic method that administers a drug to the human body for treatment [can] satisfy the test for transformation.”⁴⁹ *Bilski’s* effect on medical diagnostic patents thus remains unclear.

With regard to patent applicants, scholars have predicted that in the wake of *Bilski*, the MOT test will continue to dominate the decision-making process in the administrative landscape⁵⁰ because the Supreme Court has failed to provide any guidance in the alternative.

Such premonitions have indeed come to fruition. In the immediate aftermath of the *Bilski* decision, some district courts and the PTO have continued to apply the MOT test, at least as a “key indicator of patentability.”⁵¹ This pattern has suggested to some scholars that the lower courts and PTO examiners will continue to employ the MOT test to many process claims.⁵²

Similarly, in a post-*Bilski* decision, *Prometheus*, the Federal Circuit implied as much, stating that the Supreme Court “did not disavow the machine-or-transformation test” in *Bilski*.⁵³ Thus, in light of the fact that the MOT test seems to be permanently etched into the muscle memory of patent examiners, scholars have speculated that patentees should continue to emphasize the machine or transformative nature of their applications in the wake of *Bilski* in order to maximize their chances of obtain-

48. 628 F.3d 1347, 1356 (Fed. Cir. 2010); Scott Frederick Peachman, *The Patent Eligibility of Diagnostic Methods after Prometheus: A redefined Test for Transformation*, 22 HEALTH MATRIX 589, 609 (2012).

49. Peachman, *supra* note 48, at 609–10 (citing Kevin E. Noonan, *Prometheus Laboratories, Inc. v. Mayo Collaborative Services* (Fed. Cir. 2010), PATENT DOCS (Dec. 20, 2010), <http://www.patentdocs.org/2010/12/prometheus-laboratories-inc-v-mayo-collaborative-services-fed-cir-2010.html>).

50. Lemley, *supra* note 44, at 1319.

51. *Id.* (quoting *Ultramercial, LLC v. Hulu, LLC*, No. CV 09-06918 RGK (PLAx), 2010 WL 3360098 (C.D. Cal. Aug. 13, 2010)). See also *Ex parte Venkata*, No. 2009-007302 (B.P.A.I. Oct. 5, 2010); *Ex parte MacKenzie*, No. 2009-007332 (B.P.A.I. Oct. 4, 2010); *Ex parte Heuer*, No. 2009-004590, 2010 WL 3072973 (B.P.A.I. Aug. 4, 2010) (finding that nothing in the specification indicated that they “must be hardware” and that there was therefore no machine, and finding that “[t]he fact that Appellants’ XML-based document is decoded using the claimed ‘namespace’ or the claimed ‘simplified schema’ fails to qualify as a transformation of an article of manufacture consistent with the second prong of the ‘machine-or-transformation’ test.”); *Ex parte Tse-Huong Choo*, No. 2009-006352, 2010 WL 2985362, at *2 (B.P.A.I. July 28, 2010) (rejecting a claim that “can exist solely in software and data structures” and finding that “merely reciting data or instructions on a stored computer readable medium does not make a claim statutory [subject matter] under § 101”). This pattern suggested to some scholars that since the Federal Circuit created the MOT test largely because it aligned with the view and opinion of the Board of Patent Appeals and Interferences, the PTO’s administrative law body, the majority of the court would still employ the MOT test to many process patents, with software method patents perhaps being the exception.

52. *Id.* at 1320–21. The exception for the software method patents stems from the decision in *Research Corp. Tech. v. Microsoft*, in which the Federal Circuit held the software method claims at issue were patentable subject matter because they described “functional and palpable applications” to a computer; the Federal Circuit did not employ the MOT test. 627 F.3d 859, 868 (Fed. Cir. 2010).

53. *Prometheus Labs., Inc.*, 628 F.3d at 1355; Lemley, *supra* note 44, at 1322.

ing a patent on their process claims by conforming to the PTO's behavioral norms.⁵⁴

B. Phase II: Modus Operandi

While Phase I reviews the implications of the “state of confusion” that persisted in the post-*Bilski* period, Phase II focuses on how that confusion manifests itself in patent applications submitted by inventors and patent decisions rendered by PTO examiners. Though the Supreme Court affirmatively stated that the MOT remained an “investigative clue,” there remains a resulting concern that PTO examiners have and will continue to apply the MOT as the sole metric for gauging the patentability of a process claim, simply because it is entrenched in their muscle memory.⁵⁵ We therefore predict that in the post-*Bilski* period, PTO examiners will continue to rely on the MOT test to make their Section 101 patentability decisions. Similarly, there is a well-documented cohort of literature positing that despite the paucity of guidance from the Supreme Court, its classification of the MOT test as an “investigative clue” nonetheless breeds a certain degree of predictability for patent applicants. The argument therefore is that applicants can increase their chances at obtaining a patent for their claims by coupling the steps in their process with machines or by reciting at least one transformative step, appealing to the examiners’ pre-*Bilski modus operandi*.⁵⁶ Thus, we

54. Biernacki, *supra* note 42, at 141 (“[C]ourts will continue to rely on chiefly on the MOT test because they have grown more familiar with this systematic test. A concern could be that the additional arguments might be essentially ‘ignored’ and the MOT test applied by rote.”); Peter Flanagan, *Drafting Process Claims After Bilski: Applying the Diehr-Benson-Flook Principles Beyond the Machine-or-Transformation Test*, LEXOLOGY (Aug. 31, 2010), <http://www.lexology.com/library/detail.aspx?g=f0e87518-835c-4cb4-8834-3d365d4cafae>.

55. Biernacki, *supra* note 42, at 141; Julianne Befeler, *Seeking a Better Prescription for Physicians: Patient Eligibility for Diagnostic Methods in a Post-Bilski and Prometheus Era*, 35 SETON HALL LEGIS. J. 484, 485–86 (“Despite the multitude of case law before the courts last year, patentees are still left with the same uncertainty that existed when this issue developed at the forefront of patent disputes several years ago. Although the Supreme Court’s consideration of *Bilski v. Kappos* determined that the machine-or-transformation test (hereinafter “MOT”) created by the Federal Circuit would no longer represent the exclusive standard for which method patents may be measured, courts remain encumbered by decades-worth of patent eligibility tests and no definitive formula to apply such standards.”). See also Lemley, *supra* note 44, at 1316 (“Relying on the Court’s ‘useful and important clue’ language, the U.S. Patent and Trademark Office (PTO), patent litigants, and district courts have all continued to rely on the machine-or-transformation test in the wake of *Bilski*: no longer as the sole rule, but as a presumptive starting point that threatens to become effectively mandatory.”).

56. Rui Xu, *From Prometheus to Myriad to Classen, What a Messy Subject Matter: A Review on Recent Life Science Method Patent Cases*, 11 NW. J. TECH. & INTELL. PROP. 121, 135–36 (2013) (arguing that applicants can increase their chances at patenting their medical diagnostic claims if they: (1) explicitly recite at least one active, physical, preferably technology-dependent “transformative” step associated with the process; (2) couple the steps in the process with specific requirements/machines/devices; or (3) include at least one end result step that follows an analysis or comparison, e.g., adjusting dosage or treatment protocol); see also Russel Emerson, *Bilski: Hope For Your Business-Method Patents*, <http://www.metrocorpocounsel.com/articles/12964/Bilski-hope-your-business-method-patents> (“In the case of a business method, what the applicant should do is file several sets of claims and make sure that they recite multiple aspects of any related machine or system, such as the

also surmise that patent applicants will similarly tie their process claims to machines and recite transformative steps in both business method and medical diagnostic categories, more so in the post-*Bilski* period than they were in the pre-*Bilski* period.

IV. THE PROPOSED STUDY AND METHODOLOGY

In order to test these predictions, we use application-level data from the PTO's Patent Application Information Retrieval ("PAIR") database to examine the effects of the *Bilski* decision on patentable subject matter, using a difference-in-difference design⁵⁷ to analyze PTO examiner behavior across four categories of process patents: business methods (Class 705), telecommunications (Class 455), medical diagnostics (Class 435), and medical treatments (Class 514);⁵⁸ business method patents and medical diagnostic patents are the treatment groups because these are the patent classes in which commentators speculated *Bilski* would have the largest effects, while telecommunications patents and medical treatment patents are their controls, respectively.⁵⁹ The effect is measured by gauging the behavior of PTO examiners in light of *Bilski* to determine (1) whether post-*Bilski*, examiners are more or less likely to reject patent claims under Section 101 and (2) whether post-*Bilski*, examiners are more likely to rely on the MOT test in making their Section 101 rejec-

computer or other hardware involved, including its circuitry, processors, memory and anything else so that the claimed process is entwined with a machine. This will make it more likely that [their] patent will survive the scrutiny of any new judicially created business-method test.").

57. Difference-in-difference approaches involve utilizing one control group and one treatment group which, in the absence of the treatment, would experience the same average outcomes and would have parallel paths over time. See Alberto Abadie, *Semiparametric Difference-in-Difference Estimates*, 72 REV. ECON. STUD. 1, 1–2 (2005). Using a difference-in-difference approach allows us to rule out the influence of other factors which might be affecting patent rejection rates, particularly Section 101 rejection rates such as the implementation of the second pair of eyes review instituted by the PTO in 2001, the fact that applicants might be changing the way they draft their patent applications in response to the *Bilski* decision, and other differences in granting tendencies across different patent classes. *Patent Quality Improvement: Expansion of the Second-Pair-of-Eyes Review*, U.S. PATENT AND TRADEMARK OFFICE (Sept. 20, 2007, 12:11 AM), <http://www.uspto.gov/web/offices/com/strat21/action/q3p17a.htm> (implementing the second-pair-of-eyes review program whereby business method patents undergo an additional level of scrutiny); Michael D. Frakes & Melissa F. Wasserman, *Does the U.S. Patent & Trademark Office Grant Too Many Bad Patents? Evidence from a Quasi-Experiment*, 67 STAN. L. REV. 613, 639 (2015) (forthcoming).

58. Class 705 contains applications for methods of conducting business, i.e., business method patents. *Class 705*, U.S. PATENT AND TRADEMARK OFFICE (Apr. 12, 2012, 9:10 PM), <http://www.uspto.gov/web/patents/classification/uspc455/defs455.htm>. Class 455 contains methods for means of communicating by a technological means, i.e., telecommunications patents. *Class 455*, U.S. PATENT AND TRADEMARK OFFICE (Aug. 11, 2011, 4:43 PM), <http://www.uspto.gov/web/patents/classification/uspc455/defs455.htm>. Class 435 contains methods for diagnosing diseases, i.e. medical diagnostics. *Class 435*, U.S. PATENT AND TRADEMARK OFFICE (Aug. 11, 2011, 4:43 PM), <http://www.uspto.gov/web/patents/classification/uspc435/defs435.htm>. Class 514 contains methods for treating diseases, i.e., medical treatments. *Class 514*, U.S. PATENT AND TRADEMARK OFFICE (Aug. 11, 2011, 4:43 PM), <http://www.uspto.gov/web/patents/classification/uspc514/defs514.htm>. Thus, our dataset is randomly constructed from these four classifications.

59. See *supra* notes 48–54 and accompanying text.

tions. The determination is based on a content analysis of patent application rejections, either non-final or final rejections.⁶⁰

A. Phase I

In Phase I of our study, we conducted a baseline quantitative assessment of how *Bilski* affected the incidence of (1) aggregate rejections across all patent classes and all sections of the Patent Act (Sections 101, 102, 103, and 112) and (2) Section 101 patentable subject matter rejections across all four patent classes. Phase I is comprised of four steps: reviewing applications, coding for our criteria, tracking the Section 101 rejections, and comparing Section 101 rejections to other types of rejections (Sections 102, 103, 112).

1. Application Selection

The patent applications included in the dataset were all concluded decisions by the PTO. Cases from this dataset were included in the study through random selection⁶¹ if they meet three conditions. First, the application contained at least one process or method claim. Second, the application contained at least one Section 101 patentable subject matter rejection; Section 101 rejections that were based on obviousness-type double patenting or utility were not included in the dataset due to the diminished likelihood that *Bilski* could affect either of those types of rejections.⁶² Third, the application was filed and concluded between the two time periods: 2004–2008 (the pre-*Bilski* period) and 2008–2012 (the post-*Bilski* period). We opted to use 2008 as the divider year because when analyzing and coding the applications, we found that on average, applications did not receive a first office action (in the form of a final or non-final rejection) until three years after the date of filing.⁶³ Table I below displays the number and type of rejections by class analyzed in Phase I.

60. When a PTO examiner issues a non-final rejection, the applicant may reply and request reconsideration or further reexamination. When a PTO examiner issues a final rejection, the applicant may appeal to the Board of Patent Appeals and Interferences. *What are the Differences Between a Non-Final and a Final Office Action?*, PIERSON INTELL. PROP. (Aug. 1, 2013, 11:37 AM), www.piersonpatentlaw.com/what-are-the-differences-between-a-non-final-and-a-final-office-action/.

61. We are grateful to Professor Melissa F. Wasserman for supplying us with our random subset of applications in each of classes 705, 455, 435 and 514 for Phase I and Phase II of this study.

62. Under Section 101, three types of rejections may be made: obviousness double-patenting, lack of utility, or failure to meet the standards of patentable subject matter. 35 U.S.C. § 101 (2012). For our purposes, it is only important to capture Section 101 rejections that contain at least a patentable subject matter analysis. The next step in the empirical ladder, however, might be to see how *Bilski* affected the overall quality of Section rejections, to see if perhaps the PTO is shoehorning patentable subject matter rejections into other categories such as utility, or double patenting.

63. Gideon Mark & T. Leigh Anenson, *Inequitable Conduct and Walker Process Claims After Therasense and the America Invents Act*, 16 U. PA. J. BUS. L. 361, 410 (2014). For instance, an application filed in 2004 would not receive a final office action until 2007, which predates not only the Supreme Court's June 2010 decision in *Bilski*, but equally important, also predates the Federal Circuit's

TABLE 1: NUMBER AND TYPE OF REJECTIONS BY CLASS ANALYZED IN PHASE I

Patent Class	Type of Rejection	Pre-Bilski	Post-Bilski	Total App.
Business Methods (Class 705)	§ 101	8	13	
	§ 102, § 103, § 112	31	10	
	No Rejection	11	27	
Telecommunications (Class 455)	§ 101	1	0	
	§ 102, § 103, § 112	12	8	
	No Rejection	37	42	
Medical Diagnostics (Class 435)	§ 101	0	3	
	§ 102, § 103, § 112	36	11	
	No Rejection	14	36	
Medical Treatment (Class 514)	§ 101	0	1	
	§ 102, § 103, § 112	27	18	
	No Rejection	23	31	
Total Applications		200	200	400 ⁶⁴

2. Coding

We coded the patent applications by categorizing them by patent class and recording pertinent information from rejection documents by

October 2008 decision in *In re Bilski*. If we encountered an application that received a final office action prior to the Supreme Court's decision in 2010, but after the Federal Circuit's decision in 2008, we discarded that application from our sample. Similarly, applications that were filed in 2008 did not receive a final office action until 2011, which post-dates the Supreme Court's decision in *Bilski*. Again, if we encountered an application that was filed before concluded before the Supreme Court's decision in 2010, we discarded it from our sample. Additionally, by limiting the dataset to applications concluded before 2012, we avoided conflating *Bilski's* impact on PTO behavior with *CLS Bank Int'l v. Alice Corp. Pty.*, 685 F.3d 1341 (Fed. Cir. 2012), and *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012), both decisions which the Supreme Court, after *Bilski*, also altered the patentable subject matter landscape.

64. The total number of applications analyzed and coded was greater than four hundred cases. The majority of the randomly selected applications were discarded from the study either because (1) the dates of conclusion did not meet our limiting criteria, or the (2) Section 101 rejections were based on utility, rather than on patentable subject matter.

the PTO, based on predetermined criteria.⁶⁵ In Phase I of this study we tracked: (1) the presence of a Section 101 rejection; (2) whether the Section 101 rejections emanated from double patenting, utility, or patentable subject matter; (3) whether the application was filed and concluded between 2004 and 2008 or between 2008 and 2012; and (4) what the status of the patent application was—either a “patented case” or the patent was “rejected.” For purposes of this study, an application was considered concluded and also rejected if the status indicated the patent was abandoned following either a final or non-final rejection. Because multiple rejections can form the basis of a PTO examiner’s rejection, every patent application that contained either a Section 101, Section 102, Section 103, or Section 112 analysis was entered into the dataset and the kind of rejection was noted for each application.

B. Phase II

Phase II is similarly comprised of three steps: reviewing applications, coding for our criteria, and comparing the language of rejections by the PTO, but also contains the additional step of specifically analyzing the degree of reliance on the MOT test. In this phase of our study our focus shifted from comparing examiner behavior between the pre and post-*Bilski* time period to comparing both examiner and applicant behavior among different patent classes, in the post-*Bilski* time period. Specifically, we aimed to investigate whether in the post-*Bilski* time period, PTO examiners were more likely to apply the MOT test as the sole litmus test for measuring the patent-eligibility of process claims and if so, whether they were more likely to do so in one patent class versus another. In this phase, we also investigated whether in the post-*Bilski* time period, applicants were more likely to couple their steps with machines or recite transformative steps, and, if so, whether they were more likely to do so in certain patent classes versus others.

1. Application Selection

Phase II contained a second set of applications, which were chosen at random with separate criteria from Phase I.⁶⁶ The patent applications in Phase II of the study were included in the Phase II dataset if they met four conditions. First, the application contains at least one process or method claim. Second, there is a Section 101 rejection that corresponds

65. See ROBERT M. LAWLESS & JENNIFER K. ROBBENOLT, et al., *EMPIRICAL METHODS IN LAW* 57 (2010) [hereinafter *EMPIRICAL METHODS IN LAW*].

66. Again, we are grateful to Professor Melissa F. Wasserman for supplying us with our random subset of applications in Phase II.

to the identified method or process claim.⁶⁷ Third, the Section 101 rejection emanates from a patentable subject matter rejection, as opposed to a double patenting or a utility rejection; applications that had a patentable subject matter rejection in conjunction with a double patenting or utility rejection were included in the study. Fourth, the application was filed and concluded between 2004 and 2008 (pre-*Bilski*) or 2008 and 2012 (post-*Bilski*). Table 2 displays the number and type of rejections by class analyzed in Phase II.

TABLE 2: NUMBER OF APPLICATIONS BY CLASS ANALYZED IN PHASE II

Patent Class	Pre- <i>Bilski</i>	Post- <i>Bilski</i>	Total Applications
Business Method (705)	50	50	
Telecommunications (455)	50	27	
Medical Diagnostic (435)	14	22	
Medical Treatment (514)	50	34	
Total Applications	164	133	297 ⁶⁸

2. Coding

In Phase 2 we coded based on: (1) whether there was a Section 101 patentable subject matter rejection in the application; (2) whether the application was filed and concluded between 2004 and 2008 or between 2008 and 2012; (3) what the status of the patent application was—whether the patent was granted by the PTO or abandoned by the patentee (abandonment following a final or non-final rejection was deemed a rejection); (5) whether the rejection (final or non-final) contained an allusion to a machine or the transformative nature of the process as an in-

67. Unlike the dataset in Phase I, the dataset in Phase II only included an application if it contained at least one Section 101 rejection because the goal of Phase II was to analyze Section 101 patentable subject matter rejections to see how the PTO's reliance on the MOT test has changed if at all, in light of *Bilski*.

68. It is worth emphasizing that even though only 297 applications were included in Phase II, we examined and reviewed over 1,500 applications. The majority of the applications retrieved, however, were excluded because the Section 101 rejections emanated from double patenting or utility. In Class 455 (telecommunications), 255 applications filed between 2008 and 2010 contained a Section 101 rejection, but only 27 were process claims rejected on the basis of patentable subject matter. In Class 435 (medical diagnostics), only 14 of the 300 applications that contained at least one Section 101 rejection were process claims that were rejected on the basis of patentable subject matter. In Class 514 (medical treatment), only 270 applications filed between 2001 and 2012 contained at least one Section 101 rejection, only 34 of which were process claims rejected on the basis of patentable subject matter. And finally, in Class 514 (medical treatment), 226 applications were filed and concluded between 2008 and 2012, but only 22 were process claims rejected on the basis of patentable subject matter.

vestigative clue versus whether the rejection stated that the claim's failure to satisfy the MOT test was the sole basis for rejection; and (6) whether the patentee coupled his steps with machines or recited transformations in his application.

Applications that were ultimately granted were included in the dataset as long as a Section 101 patentable subject matter rejection was issued within the desired timeframe at some point during prosecution.⁶⁹

V. RESULTS

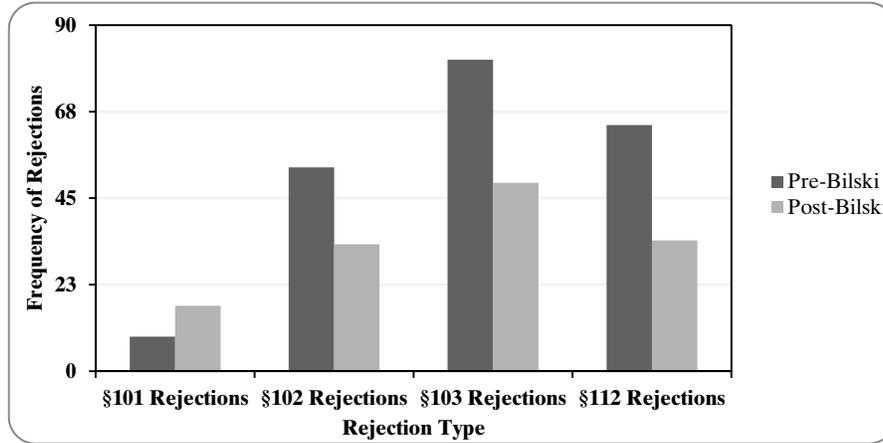
The data was bifurcated between Phases I and II and largely comprised of interaction variables because we wanted to test how timing and patent class together affected patent rejection rates and the increase or decrease of machine or transformative nature language in PTO documents. In Phase I, we ran inferential statistics, including chi-square statistics, t-tests, and frequency tables to empirically test how, if at all, the frequency of Section 101 rejections changed in response to *Bilski*. In Phase II, we ran two sample t-tests to test whether the PTO was applying the MOT test as the sole litmus test for determining the patent eligibility of process claims in certain classes versus others, and whether patent applicants were similarly emphasizing the machine or transformative nature of their own claims, in efforts to appeal to the examiner's entrenched memory.

A. Phase I

We begin by presenting the Phase I analyses, which test how patent rejection rates—particularly how Section 101 rejection rates—have responded to *Bilski*. As depicted in Figure 1, Section 101 rejections increased in response to *Bilski*, while Section 102, 103, and 112 rejections all decreased.

69. "Patent prosecution" refers to a "back and forth" process wherein applicants advocate for the broadest and strongest claims, and examiners provide reasons for rejecting unsupported or unpatentable claims. *Univ. of Mass. v. Kappos*, 903 F.Supp.2d 77, 86 (D.D.C. 2012). The process of patent prosecution often involves changes in both the applicant and examiner's positions. *Id.*

FIGURE 1: REJECTIONS BY TYPE ACROSS TIME PERIOD



To determine whether this post-*Bilski* increase in Section 101 rejections was statistically significant, we estimated a series of multivariate logistic regressions (logit regressions), as displayed in Table 3.

TABLE 3: FACTORS AFFECTING SECTION 101 REJECTIONS: BUSINESS METHODS, TELECOMMUNICATIONS, AND TIME PERIOD

Variable	Section 101	
	Model I	Model II
Time Period (Post- <i>Bilski</i> =1)	0.77* (0.45)	15.86** (1359.59)
Business Methods	2.59*** (0.56)	
Business Methods* pre- <i>Bilski</i>		17.38 (1359.59)
Business Methods* post- <i>Bilski</i>		2.13*** (0.60)
Telecommunications	-0.70 (1.13)	
Telecommunications* pre- <i>Bilski</i>		15.14 (1359.59)
Telecommunications* post- <i>Bilski</i>		-15.86 (1922.74)
Constant	-4.34 (0.59)	-19.04 (1359.59)
Adjusted R ²	0.2194	0.2481
Observations	400	400

*p-value<0.10, **p-value<0.05, ***p-value<.01.

In Model 1, we incorporate three independent variables: time period (pre- and post-*Bilski*), class 705 (business methods), and class 455 (telecommunications) and measure their effects on Section 101 rejections.

The purpose of incorporating multiple independent explanatory variables is to tend to the fact that in addition to just time period, an examiner's decision to grant or reject a patent may depend on a host of factors, such as class type. Thus, incorporating several independent variables in the regression allows us to measure the effect of each independent variable on the dependent variable (Section 101 rejections), by controlling for all other independent variables in the equation.

As depicted above in Model I of Table 3, the only two variables that exhibited statistical significance and that took on positive coefficients were time period and business methods. Such is compelling evidence of the following: (1) an examiner is more likely to reject an application under Section 101 post-*Bilski* than he is pre-*Bilski* when controlling for class type; and (2) an examiner is more likely to reject an application under Section 101 when that application is in a business method claim, as opposed to a telecommunications claim, when controlling for time period.

Thus far, Model I has allowed us to determine the explanatory power that time period and class type independently generates over Section 101 rejections. Next, in Model II, in order to move beyond a simple investigation of the independent influence that time period and class type may exert on a patent examiner's proclivity to deny or grant a patent under Section 101, we incorporated interactive variables into our logit regression. This will allow us to determine whether being decided post-*Bilski* has a greater effect on business methods over telecommunications.

As displayed in Model II of Table 3, the interactive "businessmethods*post-*Bilski*" variable is statistically significant and takes a positive value. This suggests that not only is an examiner more likely to reject an application under Section 101 post-*Bilski* than he is pre-*Bilski*, but also that he is even more likely to reject an application under Section 101 post-*Bilski* when that application falls under business methods than when that application falls under telecommunications. In other words, the same increment of post-*Bilski* increases an application's probability of being rejected under Section 101 if it is in Class 705 than if it is in Class 455.

Next, in Model III, we tested the effects of time period in addition to two other independent variables, Class 435 (medical diagnostics) and Class 514 (medical treatments) on our dependent variable, Section 101 rejections. We bifurcated the four independent variables into two groups of two by pairing each treatment group with its respective control (business methods and telecommunications) (medical diagnostics and medical treatments) in order to avoid the problem of multicollinearity.⁷⁰

70. Multicollinearity is an issue that arises when "two or more independent variables are closely correlated." *EMPIRICAL METHODS IN LAW*, *supra* note 65, at 326. "The result of multicollinearity is that the estimates of the parameter values on each of the collinear variables are less reliable. In a

TABLE 4: FACTORS AFFECTING SECTION 101 REJECTIONS:
MEDICAL TREATMENTS, MEDICAL DIAGNOSTICS, AND TIME PERIOD

Variable	Section 101	
	Model III	Model IV
Time Period (Post- <i>Bilski</i> =1)	-0.70 (0.43)	0.41 (0.46)
Medical Diagnostics	-1.39** (0.63)	
Medical Diagnostics* pre- <i>Bilski</i>		-16.34 (1590.90)
Medical Diagnostics* post- <i>Bilski</i>		-0.85 (0.67)
Medical Treatment	-2.52** (1.03)	
Medical Treatment* pre- <i>Bilski</i>		-16.34 (1590.90)
Medical Treatment* post- <i>Bilski</i>		-1.99* (1.05)
Constant	-2.49 (0.51)	-2.31 (0.35)
Adjusted R ²	.0957	0.1150
Observations	400	400
*p-value<0.10, **p-value<0.05, ***p-value<0.01.		

As depicted in Model III of Table 4, the coefficient on time period was not statistically significant, suggesting that, when controlling for medical diagnostic patents and medical treatment patents, an examiner is no more likely to issue a Section 101 rejection for an application post-*Bilski* than he is pre-*Bilski*. In fact, the negative coefficient on the time period variable suggests that, if anything, an examiner is less likely to issue a Section 101 rejection post-*Bilski* than he is pre-*Bilski*, when controlling for medical diagnostic patents and medical treatment patents. Further, the results from the interactive multivariate logistic regression in Model IV strongly suggest that this effect of no effect is more pronounced in the medical treatments class than it is in the medical diagnostics class (as evidenced by the significant and negative coefficient on the interactive “MedicalTreatment*postBilski” variable and by the nonsignificant coefficient on the interactive “MedicalDiagnostics*postBilski” variable. In other words, it appears that post-*Bilski*, an examiner is no

sense, whatever ability the data have to tell us about the relationship between these collinear independent variables and the dependent variable is being spread across both estimates rather than concentrated on just one of them. Technically speaking, the estimated coefficients are not biased, but the standard error of the estimates increases, thereby reducing the likelihood of finding the estimates to be statistically significant.” *Id.*

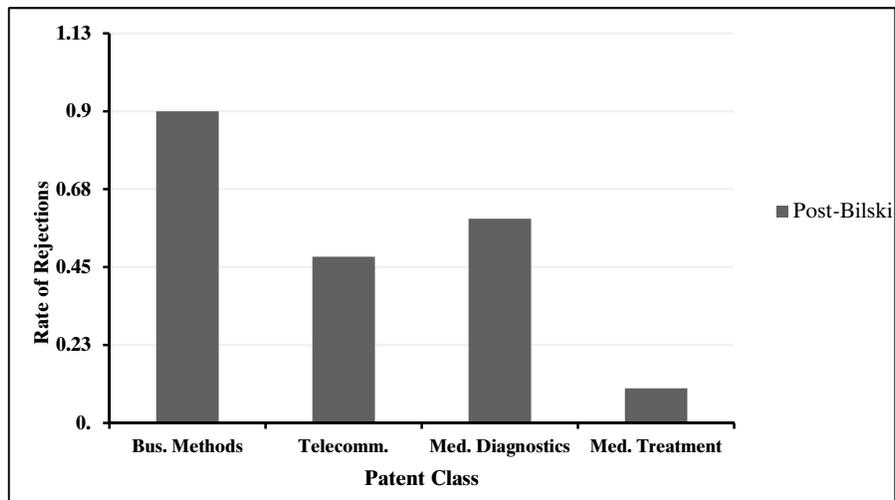
more likely to reject an application that falls under medical diagnostic patents or medical treatment patents than he was pre-*Bilski*. Post-*Bilski*, medical diagnostics and medical treatments are safe.

To recap, the logit regressions estimated in Models I–IV present strong evidence of the following two conclusions: (1) post-*Bilski*, not only is an examiner more likely to reject an application under Section 101, but he is even more likely to reject an application under Section 101 post-*Bilski* when that application falls under business methods instead of telecommunications; and (2) post-*Bilski*, an examiner is no more likely to reject an application that falls under medical diagnostic or medical treatment patents than he was pre-*Bilski*.

B. Phase II

We begin by presenting Figure 2, which depicts the rate of Section 101 rejections that were made solely on the basis of the claims' failure to meet the MOT test in the post-*Bilski* period.

FIGURE 2: REJECTIONS BASED SOLELY ON THE MACHINE OR TRANSFORMATION TEST BY TIME PERIOD AND BY CLASS



As displayed in Figure 2, the two treatment groups, business methods and medical diagnostics, suffered from higher rates of Section 101 rejections due to sole failure to meet the MOT test as compared to their respective controls, telecommunications and medical treatments. To determine whether these differences in Section 101 rejections due to sole failure to meet the MOT test in business methods and telecommunications, and between medical diagnostics and medical treatments, were statistically significant or due to random chance, we ran two two-sample t-tests. We present the results of this two-sample t-test in Tables 5 and 6.

TABLE 5: RESULTS OF T-TESTS ON FAILURE TO SATISFY MOT IN BUSINESS METHOD AND TELECOMMUNICATION PATENT APPLICATIONS

Descriptive Statistics

	Variable							
	Business Methods				Telecommunications			
	Mean	Std. Dev.	Std. Error	n	M	Std. Dev.	Std. Error	n
Failure to Satisfy MOT test	0.15	0.36	0.02	296	0.12	0.21	0.12	296

Paired Samples t-test

	Paired Differences						
	Difference Mean	Std. Error	95% Confidence Interval of the Difference		t	df	Sig.
			Lower	Upper			
Failure to Satisfy MOT test	0.01	0.02	0.06	0.15	4.31	590	0.000***

***significant at the 1% level

As displayed in Table 5, the correspondingly low p-value of .0000 is strong evidence that the difference in the mean number of Section 101 rejections made on the sole basis of the claims' failure to meet the MOT test between business method patents and telecommunications patents is statistically significant, and not due to random chance. This leads us to our first important result from Phase II: among the universe of business method and telecommunications claims that are rejected under Section 101, business methods are significantly more likely to be rejected for sole failure to meet the MOT test than telecommunication claims.

Similarly, as displayed in Table 6, the slightly higher, yet equally low, p-value of .0001 is strong evidence that the difference in the mean number of Section 101 rejections made on the sole basis of the claims' failure to meet the MOT test between business method and telecommunications patents is statistically significant, and not due to random chance. This leads us to our second important result from Phase II:

among the universe of medical diagnostic and medical treatment claims that are rejected under Section 101, medical diagnostics are also significantly more likely to be rejected for sole failure to meet the MOT test than medical treatments.

TABLE 6: RESULTS OF T-TESTS ON FAILURE TO SATISFY MOT IN MEDICAL DIAGNOSTICS AND MEDICAL TREATMENTS

Descriptive Statistics

	Variable							
	Medical Diagnostics				Medical Treatments			
	Mean	Std. Dev.	Std. Error	n	M	Std. Dev.	Std. Error	n
Failure to Satisfy MOT test	0.00	0.00	0.00	295	0.05	0.21	0.12	295

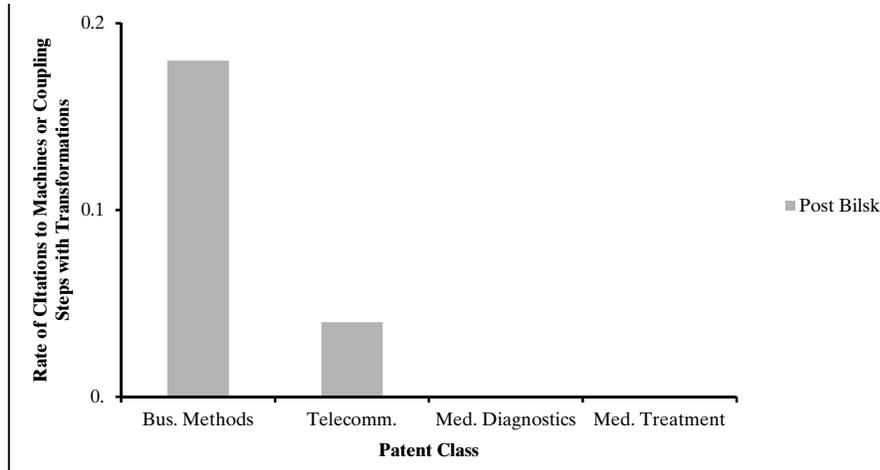
Paired Samples t-test

	Paired Differences						
	Difference Mean	Std. Error	95% Confidence Interval of the Difference		t	df	Sig.
			Lower	Upper			
Failure to Satisfy MOT test	-0.05	0.12	-0.07	-0.02	-3.82	589	0.0001***

***significant at the 1% level

Next, we present Figure 3, which depicts the rate at which applicants are coupling the steps in their processes with machines or are reciting transformative steps, in efforts to appeal to the PTO examiners' entrenched memories.

FIGURE 3: APPLICANTS' CITATIONS TO MACHINES OR TRANSFORMATIONS IN APPLICATIONS BY CLASS



As demonstrated in Figure 3, the rate at which applicants are coupling the steps in their processes with machines or reciting at least one transformative step in both treatment business methods is exceedingly high compared to its control group class, telecommunications.⁷¹ To determine whether these sample means were statistically significant or due to random chance, we ran a two-sample t-test, the results of which are presented in Table 7.

71. The rate at which applicants are coupling the steps in the process with machines or reciting at least one transformative step in both medical diagnostics and medical treatment is zero.

TABLE 7: RESULTS OF T-TESTS ON MACHINE OR TRANSFORMATIVE NATURE LANGUAGE IN PATENT APPLICATIONS IN BUSINESS METHODS AND TELECOMMUNICATIONS

Descriptive Statistics

	Variable							
	Business Methods				Telecommunications			
	Mean	Std. Dev.	Std. Error	n	M	Std. Dev.	Std. Error	n
MOT Language in App.	0.03	0.17	0.01	296	0.00	0.06	0.06	296

Paired Samples t-test

	Paired Differences						
	Difference Mean	Std. Error	95% Confidence Interval of the Difference		t	df	Sig.
			Lower	Upper			
MOT Language in App.	-0.03	0.01	0.01	0.05	2.56	590	0.0107**

***significant at the 5% level

As Table 7 shows, the correspondingly low p-value of .0107 is strong evidence that the difference in the mean number of claims coupling their steps with machines or reciting transformations between business methods (Class 705) and telecommunications (Class 435) is statistically significant, and not due to random chance. In other words, this leads to our third major conclusion in Phase II, which is that post-*Bilski*, applicants are much more likely to cite to machines or recite transformative steps when filing applications for business methods than when they are filing applications for telecommunications.

VI. IMPLICATIONS

Before intimating implications from any empirical study, it is instructive to concede the limitations. The most significant limitation of our methodology is our small sample size. Although the sample size of four hundred applications in Phase I and Phase II is not an insignificant

amount of applications, drawing conclusions on the more granular analyses of trends in Section 101 rejections proved difficult and likely yielded decreased precision when estimating our population parameters than a larger sample size would have, necessarily limiting the robustness of our results and the conclusions that can be drawn from this study.⁷²

A second major limitation of this study is that although we are utilizing a difference-in-difference design by assigning treatment groups to their control groups, we are not using a methodology that enables us to infer causality.⁷³ Rather, to the extent this study analyzes patentability decisions and patent applications pre and post-*Bilski* while simultaneously controlling for class type, there can be a host of other legitimate factors affecting the incidence and quality of Section 101 rejections. Thus, while this Note begins to provide a glimpse at how Section 101 rejections changed in terms of quantity and quality, and, relatedly, how patent examiners and applicants changed their behavior post-*Bilski*, we caution against drawing causal inferences from this study.

The results from our multivariate logistic regression and t-tests can be summarized in the following manner: (1) patent examiners are more likely to reject applications under Section 101 post-*Bilski* than they are pre-*Bilski*, and they are even more likely to reject an application under Section 101 when that application falls under business methods versus when it falls under telecommunications; (2) among the universe of business method and telecommunication claims that are rejected under Section 101, business methods are significantly more likely to be rejected for sole failure to meet the MOT test than telecommunications claims; and (3) post-*Bilski*, applicants are more likely to cite to machines or recite transformative steps when filing applications for business methods than when they are filing applications for telecommunication patents.

These results from both Phase I and Phase II tell us a few stories about how both examiner and applicant behavior differs among the patent groups and across the two time periods. First, post-*Bilski*, it appears that business methods are suffering from significantly high rates of Section 101 rejections. Second, examiners are continuing to employ the MOT test as the sole litmus test for determining the patent-eligibility of process claims, particularly when analyzing business method claims. Indeed, when coding through the applications, the authors noted several examples where the PTO was still using the machine or transformative nature language in both business method patents and medical diagnostic patents, but especially in the business method patent class. For example,

72. Unlike the dataset in Phase I, the dataset in Phase II only included an application if it contained at least one Section 101 rejection because the goal of Phase II was to analyze Section 101 patentable subject matter rejections to see how the PTO's reliance on the MOT test has changed in light of *Bilski*.

73. See note 57 and accompanying text.

in one instance, a final rejection stated: “There is insufficient recitation of a machine or a transformation. Any recitation of an implicit machine (i.e. electronic analysis) is merely nominally, insignificantly, or tangentially related to the performance of the steps.”⁷⁴ Finally, applicants are picking up on these entrenched behavioral norms at the PTO by coupling their business method claims with machines or transformative steps.⁷⁵

These results present implications. Our results primarily call into question the long-term viability of the business method patent, and by extension, the normative desirability of a standards-based approach to patentable subject matter, as opposed to a rules-based approach. Finally, our results also begin to pave the road to understanding how judicial uncertainty might affect administrative law more generally. This Section analyzes each implication in turn.

A. *The Long-Term Viability of the Business Method Patent*

First, as a descriptive matter, our results suggest that business methods face an uncertain future—as evidenced not only by the statistical significance of the surge in post-*Bilski* Section 101 rejection rates, but also by the PTO’s continued reliance on the more restrictive MOT test in making those Section 101 rejections. Now the normative desirability over the PTO parsing out business method patents to apply this more stringent standard to is at best, debatable. If one believes that granting patents to business methods stifles innovations, then this is a good result because the more rigorous application of the exclusive use of the MOT test will result in less patents being granted to business methods. But if one believes that granting patents to business methods promotes innovation in the modern Information Age, then this trend is inimical to public welfare because by using an erroneous test, the PTO is filtering out what would be, according to the Supreme Court in *Bilski*, good patents.

Though the resolution of this debate is far from clear, what is clear is that if this trend continues, applicants may be hard pressed to successfully obtain patents on their business methods. Additionally, given that most business method patents in the modern Information Age simply are not attached to machines, nor do they transform matter, business methods face an uncertain future under this trend. Indeed, in the immediate wake of the Federal Circuit’s *In re Bilski* decision in which the Court did hold that the MOT test was then the exclusive test for as-

74. U.S. Patent No.12/386,448, at [Non-Final Rejection rejecting Claims 1-5] (filed Apr. 2009).

75. For example, these are claims written by patentees in the post-*Bilski* period in patent applications describing their inventions: “A machine-readable medium, to provide prospective portions of instruction . . . and “A computer-implemented method for using predictive pricing for models”. U.S. Patent No. 11/129,131, at [Claim 23] (filed May 2005); U.S. Patent No. 10/811,077, at [Claim 43] (filed Mar. 2004). Both of these patent applications had machine or transformative nature language cited in rejection documents by the PTO during the patent prosecution phase.

sessing the patent eligibility of process claims, commentators felt that the validity of all business method patents was suddenly in jeopardy.⁷⁶ Thus, since PTO examiners are exclusively applying the MOT test for judging business method claims, for them, it is as if the Supreme Court's decision never took place at all, at least with respect to business method patents. The recent fire that business method patents have come under from scholars and commentators, and even Supreme Court Justices, coupled with the ominous findings from our Phase II analyses, illustrate that examiners are essentially picking on business method claims by rigidly applying the MOT test. This suggests that we are witnessing the beginning of a gradual erosion of the business method patent, which as we know, was not the intent of either the Supreme Court nor Congress.

B. *The Desirability of a Standards-Based Approach*

Our findings also illuminate, by extension, an important aspect of the perennial debate between the Federal Circuit and the Supreme Court on the rules-standards dichotomy. It is a well-known truism in the patent law literature that the Federal Circuit is associated with the development of formalism in patent law. The Federal Circuit has, over time, developed a reputation for issuing bright-line, rigid rules that are easy to apply for the lower courts and PTO examiners. The most fitting example of course is the Federal Circuit's MOT test as articulated in its *In re Bilski* decision (failure to meet the MOT test will render a process or method claim unpatentable).⁷⁷ The Supreme Court, on the other hand, has traditionally been associated with the development of anti-formalism in patent law, over time developing a proclivity for issuing flexible, harder to apply, case-by-case, fact-sensitive standards in the patent realm. Again, the most fitting example is the Supreme Court's denunciation of the rigid application of the MOT test in favor of the more flexible, case-by-case "investigative clue" approach.

In this long-running debate over the Federal Circuit's rules-based approach and the Supreme Court's standards-based approach, scholars have repeatedly made the case for one form over the other.⁷⁸ This Note

76. Mark Connolly, *The Search for America's Most Eligible Patent: The Impact of the Bilski Decision on Obtaining Patents for Processes and Business Methods*, 3 WM. & MARY BUS. L. REV. 575, 580 (2012) ("In what appeared to be an attempt by the CAFC to limit the scope of business method patents, however, it essentially changed the result of the game. Because the holding indicated that the 'machine-or-transformation' method was now the exclusive test, the validity of all business method patents was suddenly in jeopardy.")

77. *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008).

78. See David O'Taylor, *Formalism and Antiformalism in Patent Law*, 46 CONN. L. REV. 415 ("In short, critics routinely suggest that the Federal Circuit improperly enforces rules-based adjudication."); Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U.

does not argue for the normative desirability of one approach over the other. It simply observes that at least in the context of patentable subject matter, the Supreme Court's standards-based approach has resulted in a functional disconnect between the standard's intended and actual effect. In the Supreme Court's decision in *Bilski v. Kappos*, the majority expressly stated that the MOT is not the sole test for patent eligible subject matter, in any class, and that a claimed process need not be anchored to a machine nor transformation in order to be patentable. In other words, the Supreme Court once again touted the bright-line rule (MOT test is the exclusive test), and replaced it with a standard (MOT test is merely an investigative clue). And yet, in Phase II, we have compelling evidence that, at least with respect to business method patents, examiners are using the MOT test as the sole yardstick for patent eligibility. Still, it is hard to fault the examiner for doing so. Given the recent contention and ambiguity surrounding whether business method patents should be subject to the same analytical framework as other process patents, this exceptionalist trend in business methods is not surprising. Thus, it is perhaps expected that examiners would be applying a more stringent analysis to business method applications.

Nevertheless, the Supreme Court in *Bilski* never intended to phase out the business method patent. And yet, our results suggest that by issuing this vague, nebulous standard for the MOT test as only an "investigative clue" without providing any more guidance, the Supreme Court has erred because such a difficult to apply and flexible standard has created a disconnect between what the intended effect of the standard was and what the actual effect of the standard is, suggesting that at least in the context of patentable subject matter, a rules-based approach that is tailored to particular technologies might more effectively preserve judicial fidelity.

L. REV. 1 (1989) (noting that the Federal Circuit's bright-line approach creates a body of law that is easier to apply uniformly and to predict with certainty, but that the Federal Circuit had not done as well clarifying issues that mainly arise in enforcement proceedings, like the law on monetary damages); See Rochelle Cooper Dreyfuss, *In search of Institutional Identity: The Federal Circuit Comes of Age*, 23 BERKELEY TECH. L.J. 787, 789 (2008); Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123 (2005) (advocating that the Federal Circuit abandon its formalistic approach to conform to the Supreme Court's methodology); Timothy R. Holbrook, *The Supreme Court's complicity in Federal Circuit Formalism*, 20 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1 (2003) (arguing that the Federal Circuit's formalistic use of rules comes at the cost of fairness); Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035 (2003) (asserting that the Federal Circuit's formalistic approach has had a negative impact on innovation and has created a need for reform in the patent system).

C. The Modern Administrative State

Although our results primarily shed light on how *Bilski* seems to have had a corrosive effect on the business method patent, and on the long term sustainability of a standards-based approach is to the doctrine of patentable subject matter, they also potentially provide insight into administrative law in terms of how agencies react when the courts provide unclear guidance. In our study, we found that not only are Section 101 rejections on the rise post-*Bilski*, but also that examiners are more likely to reject business method patents for sole failure to meet the MOT test post-*Bilski* than they are any other class of patents.

Despite the fact that the Supreme Court clearly stated that the MOT test is no longer the sole litmus test for determining patent eligibility, our main finding was that although vague PTO guidelines (issued after the Supreme Court's decision in *Bilski*) provided a number of factors for examiners to consider in assessing patentable subject matter in addition to the MOT test,⁷⁹ recalcitrant PTO examiners were more likely to adhere to the MOT test in conducting their patentable subject matter analyses for business method claims. The reasons for such results could be varied; the most intuitive explanation is that patent examiners naturally revert back to their comfort zones—applying by rote a test that is easily administrable—particularly to a class of patents (business methods) on which the Supreme Court itself disagreed. This finding that PTO examiners tend to retreat back to the status quo paradigm in the face of judicial uncertainty undoubtedly carries profound implications for patent law and for the PTO. But in a culture where an overwhelming majority of legal decisions are being made by officials⁸⁰ housed in agencies that make similar licensing decisions, such as the Environmental Protection Agency (air pollution permits), The Federal Communications Commission (broadcast licenses), the Federal Energy Regulatory Commission (hydroelectric facility licenses), and dozens more, both federal and state, who is to say that these agency officials are also not erroneously applying the law in the face of judicial uncertainty? Of course, vast amounts of additional empirical research would need to be conducted to not only confirm, but lend initial credence to this theory. Nevertheless, our results mildly suggest that at least within agencies that perform the similar administrative tasks of granting or denying permits, officials might also be taking the law into their own hands by retreating back to the status quo approach, particularly if that approach is efficient, easy-to-apply, and promoted consistency.

79. *Bilski v. Kappos*, 561 U.S. 593, 605–07 (2010).

80. Steven Goldberg, *The Reluctant Embrace: Law and Science in America*, 75 GEO. L.J. 1341, 1365 (1987) (“[I]t is the agencies, not Congress, that make most of the difficult decisions.”).

VII. CONCLUSION

Despite the burgeoning literature surrounding the *Bilski* decision and its effect on the doctrine of patentable subject matter, there is surprisingly scant empirical evidence devoted to testing these anecdotal theories and observations. Although there is much more work to be done in the Section 101 patentable subject matter arena, this Note scratched the surface by analyzing the effect of the Supreme Court's decision in *Bilski v. Kappos* on Section 101 rejections. In doing so, we found results suggesting that not only has *Bilski* had a corrosive effect on the business method patent in terms of the incidence of Section 101 rejections, but also that post-*Bilski*, patent examiners are more likely to reject a business method claim for failure to meet the MOT test than any other class.

These results suggest that if the intent of the Supreme Court was not to phase out the business method patent, then perhaps a rules-based approach, as opposed to a standards-based approach to patentable subject matter might be more sustainable. Finally, our results also implicate administrative law more generally in that, when deciding contentious socio-political issues in the face of uncertainty, administrative officials might be more likely to recede back to the status quo regime, particularly if that regime espoused an approach that was concrete, efficient, and easy-to-apply. Analyzing how agency officials are reacting to nebulous Supreme Court opinions when making decisions on contentious legal issues can provide valuable insight into agency behavioral norms and on how to fill the gap between the intent of the Supreme Court and legislature and the actual effect of the thousands of legal decisions being made by administrative agencies on a regular basis.

