THE CURIOUS CRYPTO QUESTION: DO PATENTS ADVANCE FINTECH INNOVATION? THE PARADOX ARISING FROM FIVE KEY RECENT TRENDS

Katopis, Chris J.

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THE CURIOUS CRYPTO QUESTION: DO PATENTS ADVANCE FINTECH INNOVATION? THE PARADOX ARISING FROM FIVE KEY RECENT TRENDS

By Chris J. Katopis

The Author examines some recent trends in intellectual property (U.S. patents) in the fintech sector, summarizes this empirical data, and discusses the potential implications of these developments.

“As new technologies emerge and the financial services industry puts those technologies to use, Congress must make sure that responsible innovation is encouraged, and that regulators and the law are adapting to the changing landscape to best protect consumers, investors and small businesses.”

The Hon. Maxine Waters (D-CA), chair of the U.S. House of Representatives Committee on Financial Service

1 The author is of Counsel at Franklin, Scott, Conway LLP. He recently served as a Senior Legal Advisor at the U.S. Patent and Trademark Office. He has previously served in other governmental roles, including as law clerk to the Hon. Pauline Newman, U.S. Court of Appeals for the Federal Circuit and as counsel to the U.S. House Judiciary Subcommittee on Courts, the Internet, and Intellectual Property. B.S., 1990, University of Pennsylvania, School of Engineering and Applied Sciences; J.D., 1994, Temple University Law School. The views and opinions expressed within this article should be attributed to the author, rather than to any client, agency, or other entity.

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INTRODUCTION

The revolution in financial services technology ("fintech") is driven by many factors, including technological innovation, government regulation, and stakeholder demand. This fintech revolution promises to be disruptive, innovative, beneficial, and potentially messy. The many voices in the fintech debate range from congressional policymakers to state and federal regulators, from standard-setting organizations and marketplace entities to the end consumers. As the fintech revolution rages on, patents are likely to play an increasingly significant role, if not a material factor. First, this article relies on empirical data to examine some recent legal trends related to patent activity that may explain whether patents materially advance fintech innovation. Second, the article assesses the impact of patent-related activity to determine whether it has a net positive or negative influence. For many industry stakeholders, if the first question is whether fintech is the next big thing, then the next question is whether related patent litigation is the next, next big thing.

This article considers several recent important developments, federal public policy initiatives, and empirical data to analyze patents’ role as a potential driver of fintech innovation. Washington, D.C., is the center of gravity for these matters, given the U.S. Constitution’s governance, the current operative legislative frameworks, and the regulatory agency review. Appropriately, Congresswoman Maxine Waters (D-CA), chair of the House Financial Services Committee, is among the many lawmakers asking the question, “How do we get more innovation from the financial services industry?”

Patents, which are rooted in the U.S. Constitution, are a form of legal protection for inventions, rather than mere concepts or ideas, such as scientific principles or the concept of basic human economic interactions. The U.S. Congress enacted the first Patent Act in 1790. Patents are considered an indicator of innovation, as will be discussed...
in further detail below. Recent empirical evidence shows a dramatic increase in patent-related activity surrounding fintech, including new worldwide fintech patent applications and government grants of these patent rights.⁶ This evidence suggests that patents play some role in fintech innovation and investment, if not an indicator of this activity. Although, the full extent is unclear.

Patents remain a controversial form of legal protection, despite a long history and tradition dating back to the writing of the U.S. Constitution. Legal historians and economists often teach that the modern patent system, rooted in the 18th century, has long played a significant role in advancing various technological fields.⁷ Many in the academic community argue that the essence of the patent system is about balancing incentives and public benefits, such as the disclosure of useful knowledge.⁸ The argument is often presented as follows:

> The historical and philosophical underpinning of intellectual property show that its purpose is to provide a narrowly tailored, private monopoly privilege as an

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⁷ See LAWRENCE M. FRIEDMAN, A HISTORY OF AMERICAN LAW 255–57, 435–38 (2d ed. 1985) (“Monopoly was in bad odor in 1776, except for the special case of the patent, which served as an incentive for technical innovation.”); Abraham Lincoln, Second Lecture on Discoveries and Inventions, in THE COLLECTED WORKS OF ABRAHAM LINCOLN 356, 363 (Roy P. Basler et al. eds. 1953) (explaining that patents are intended to add “the fuel of interest to the fire of genius” by granting inventors exclusive rights in their inventions); Robert P. Merges, *The Hamiltonian Origins of the U.S. Patent System, and Why They Matter Today*, 104 IOWA L. REV. 2559 (2019) (“The patent system was one of the earliest instruments of economic development put in place by the young United States. It represents a distinctly pre-twentieth century policy—one of the strands in the sturdy rope that pulled the early Republic forward into prosperity.”)

incentive to produce various types of works for the public.\textsuperscript{9}

The general proposition of the public-private bargain embodied in the U.S. Constitution is that patents confer a limited private benefit in exchange for sharing the fundamental knowledge of the invention with the public.\textsuperscript{10} Patent advocates further argue that in the absence of patent protection, the innovators would turn to trade secret protection to secure their inventions providing sub-optimal societal benefits, instead of the teaching of valuable technology through public disclosure.\textsuperscript{11} Judge Pauline Newman of the U.S. Court of Appeals for the Federal Circuit defined “technological innovation” broadly as the process of “advancing the useful arts.”\textsuperscript{12} For Judge Newman, patents are a vital tool and part of the constitutionally based right that “carries the obligation to disclose the workings of the invention . . . [that] adds to the store of knowledge without diminishing the patent-supported incentive to innovate.”\textsuperscript{13}

Some observers find it easy to accept the application of such patent principles to Industrial Age inventions such as Edison’s lightbulb or the Wright Brothers’ plane.\textsuperscript{14} In contrast, many modern

\footnotesize
\textsuperscript{10} See, e.g., id. at 332 (“The ‘storehouse theory’ states that the disclosure under the patent system a first inventor contributes ‘a measure of worthwhile knowledge’ so as to ‘enlarge[ ] the public storehouse of knowledge.’”).
\textsuperscript{11} Id. at 338; see also PETER D. ROSENBERG, PATENT LAW FUNDAMENTALS 1–45 (2d ed. 1996) (explaining that under trade secret law, an inventor who keeps his invention secret may enjoy de facto exclusivity and may rely on state enforcement of nondisclosure agreements); Adam D. Moore, Intellectual Property and the Prisoner’s Dilemma: A Game Theory Justification of Copyrights, Patents, and Trade Secrets, 28 FORDHAM INT’L. PROP., MEDIA & ENT. L.J. 831, 849 (2018) (“If innovators would be motivated to create independent of compensation and in spite of being able to recoup investment costs, then copying would not lead to a suppression of content creation and a sub-optimal outcome . . . [i]t should be obvious that such considerations would inevitably lead content creators to deploy their efforts in less risky pursuits.”).
\textsuperscript{12} Paulik v. Rizkalla, 760 F.2d 1270, 1276 (Fed. Cir. 1985).
\textsuperscript{13} Id.
critics argue the incentives of the traditional patent system are simply out of date and incapable of meeting the needs of the fast-paced world of technology, let alone the needs of the Fourth Industrial Revolution. This revolution promises cutting-edge advances such as, artificial intelligence, the Internet of Things (IoT), and the fintech sector. Patent advocates argue that patents can serve as a valuable asset class for all industries when ventures raise capital and secure investment. Innovation is an expensive proposition, especially for poorly capitalized entrepreneurs and start-ups. In the fintech context, financial industry experts estimate that the development of a new financial product can range in cost from $50,000 to $5 million.

History teaches us that patent protection on banking and financial services-related inventions has a long pedigree and certainly is a practical reality. The U.S. Patent and Trademark Office (USPTO) is among the sources that cite the long historical precedent of patents for such inventions. The method of “Detecting Counterfeit Notes” (1799) and “A Mode of Preventing Counterfeiting” (1815) are among some of the earliest examples. These financial services-related “tech” patents remain controversial more than a century later for various reasons. Some critics question whether the legal protection normally afforded to technology and the follow-on incentives are applicable in the business world. It is a fundamental public policy and economic question whether such protection is appropriate for the entire category of financial related activity. The debate about affording patent protection to other sectors of the economy has raged for decades. More than a century ago, the U.S. Congress observed:

No one has advanced a just and logical reason why reward for service to the public should be extended to

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17 See generally Michael Risch, America’s First Patents 64 FLORIDA L. REV. 1279 (2012); see Dickinson, infra note 76.
20 Id.
the inventor of a mechanical toy and denied to the
genius whose patience, foresight, and effort have given
a valuable new [discovery] to mankind.\footnote{Hearings on H.R. 11372 Before the House Comm. On Patents, 71st Cong. 3, at 2 (1930).}

In truth, the global financial services industry appears to have a love-hate relationship with patents. Critics of patents in financial
services fields, such as business method patents, argue that there are
numerous reasons not to afford them any such legal protection,
including the shifting legal standards around patentability; the
inevitably poor quality of patent claims; the expense of procuring
patents; the difficulty of enforcement; vexing, specious litigation; and,
a lack of consensus within the traditional banking regulatory regime.

The fintech community is clearly of two minds when it comes
to patents. The digital currency Bitcoin, for example, is considered
open source and unpatentable by design.\footnote{See Patent Pledge FAQ, BLOCKSTREAM’S DEFENSIVE PATENT STRATEGY, https://blockstream.com/about/patent_faq/ (responding affirmatively to a
question whether “Bitcoin is both open-source and unpatentable. The original
ideas as published in the Bitcoin whitepaper were not patented. Inventors have
a year after making their inventions public to file patent applications, and then
the window is closed. Because of this, the basic Bitcoin system is free of
patent restrictions; it is too late for anyone to come forward and apply for new
patents on Bitcoin now. What can still be patented are the incremental
improvements, complementary technologies, or additional applications of the
technologies that are currently being developed.”).} In contrast, we have also
seen both traditional businesses and start-ups engaging in a virtual,
enticing opportunity of blockchain’s potential to revolutionize global
financial (and many other) markets through transaction security has brought
a wave of prospectors to stake their claim on the blockchain patent
landscape.”).} At the time of this
Article’s 2021 publication, the USPTO has granted more than 2,100
patents expressly claiming “blockchain”-related inventions and more
than 100 expressly claiming “bitcoin.”\footnote{Querying Results from Keyword Text Search of “Blockchain” and
news when it was issued a significant patent covering a “cryptocurrency payment network.” The company’s patent abstract teaches that:

The present technology provides a payment service for providing financial transactions between a customer and merchant wherein the customer can pay in any currency and the merchant can be paid in any currency. Furthermore, the present technology supports payment using cryptocurrency, while improving such transactions in a way that takes advantage of benefits of such transactions while overcoming drawbacks such as delays in processing.

As of the date of this article’s publication, Square, Inc. has secured more than 600 U.S. patents across all fields of technology. In 2020, observers noted that many of the key crypto industry players earned patents, including Bank of America, which was the recipient of 36 new blockchain patents. Bank of America earned U.S. Patent No. 10,643,202, entitled “Real-time processing distributed ledger system.” Craig Wright’s nChain Holdings Limited also recently earned four blockchain patents. A recent nChain patent, U.S. Patent No. 10,579,779, is entitled “Method and system for verifying integrity of a digital asset using a distributed hash table and a peer-to-peer distributed ledger.”

26 See generally U.S. Patent No. 10,540,639 (issued Jan. 21, 2020) (Invention assigned to Square, Inc. (“Cryptocurrency payment network”)).
27 Id.
28 Querying Results from Keyword Text Search of “Square, Inc” within the Field of Patent Assignee Name, U.S. PAT. TRADEMARK OFF. PAT. FULL-TEXT AND IMAGE DATABASE, https://patft.uspto.gov/netahtml/PTO/searchbool.html (last visited July 16, 2021) (follow link to access USPTO Patent Database; then input “Square, Inc” in the “Term 1” textbox; then select the “Search” button; then repeat the process with the other quoted keyword).
31 Isaacson, supra note 29.
Bank of America, nChain, and Square are in good company, as a number of leading companies are obtaining patents on fintech innovations, including blockchain. It is notable that Chinese companies like Alibaba Group Holdings currently appear to be leading the patent gold rush. The charts below illustrate some of these recent activities by domestic and overseas entities seeking patents protection in the U.S. and countries around the world.

Chart 1: Top Companies in Blockchain Patents

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34 Id.
The Article now identifies five major recent trends driving events related to patents surrounding fintech and crypto innovation. These trends span the past decade, but the last few years were especially significant for a variety of reasons discussed below.

I. **Trend One: The U.S. Patent Office Continues to Grant a Record Number of Patents Annually**

The U.S. Patent and Trademark Office (USPTO) is a federal agency whose duties primarily involve the examination of patent applications and the issuance of patents. The USPTO has been labeled as a gatekeeper of technological innovation. The agency is considered as one granting private property rights in an invention; nevertheless, it can still be considered a federal regulator. The agency is not an enforcement agency per se, *inter alia*, in that it does not make determinations of patent infringement or award remedies such as monetary damages. The agency is in the business of examining

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39 Additionally, the USPTO has a division, the Patent Trial and Appeal Board (PTAB), that regularly reviews previously granted U.S. patents that are likely
domestic and foreign patent applications and issuing patents. The patent business is booming. The USPTO’s records show that it continues to issue a record number of patents overall and at an accelerating pace.\(^{40}\) Importantly, and for the purposes of this article, the USPTO is issuing a record number of patents at an accelerating pace in the fintech sector, including blockchain and crypto technologies. Frighteningly, any one of these issued patents may prove to be an existential threat to one or more fintech companies. The rising patent tide has truly lifted all boats, but a tsunami may be on the horizon.

Readers should consider the historical trends concerning patent activity. The U.S. patent system was established by Congress in 1790.\(^{41}\) In 1911, merely some 120 years later, the one-millionth U.S. patent was issued to F.H. Houlton for the invention of a vehicle tire.\(^{42}\) A generation ago, the former chief judge of the U.S. Court of Appeals for the Federal Circuit, Howard T. Markey, observed that more than 1,000,000 patents were issued in the some twenty years between 1953 and 1971.\(^{43}\) Recently, in 2018, the ten millionth U.S. patent was granted.\(^{44}\) Today, the USPTO is on track to issue one million patents every three years (e.g., more than 300,000 patents annually).\(^{45}\) In sum, the long arc of history confirms that the rate of patent grants, or

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\(^{42}\) Technically, there were also additional patents previously issued in U.S. history. The Patent Office lost a large number of its files and patent records in an 1836 fire. Thereafter, the patent numbering system reset, and the Patent Office once again started numbering its patents starting anew from number one.


issuance continues to accelerate over time, as illustrated by the following chart.

**Chart 3: Milestones in U.S. Patenting**

The table below summarizes this past decade’s patent activity, including the total number of U.S. patents, total patents, blockchain patents, bitcoin patents, and worldwide blockchain applications. While this is based on publicly available data sources, it should not be

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46 *Milestones in U.S. patenting*, U.S. PAT. TRADEMARK OFF., https://www.uspto.gov/patents/milestones (last visited Sept. 28, 2021) (This increased volume and pace is driven by an ever-increasing number of overseas patent applications from overseas.).


48 Table 1 is based on the following sources: (1) the numbers of the “Recent USPTO Patent Grants” patent applications are taken from its USPTO’s Annual Reports; (2) the number of “Granted U.S. Patents with Blockchain Claims” is derived from a keyword search of granted patent claims from the USPTO online database using the terms “blockchain” and “bitcoin” respectively; (3) the number of “Estimated Worldwide Blockchain Patent Applications” is derived from the European Patent Office’s international database. *See, e.g.*, Tim Pohlmann, *Who are the patent leaders in blockchain?*, IAM (June 12, 2019), https://www.iam-media.com/who-are-patent-leaders-blockchain; *see also* Berndsen, *supra* note 34. The author notes that this methodology merely provides a first approximation. These fintech patents may relate to patented technologies from a variety of fields, *e.g.*, cryptology, security, encryption, finance, without expressly using these terms. Many are from USPTO Technology Centers TC 2400 and TC 2800. A “technology center” is an organizational division of the PTO wherein its assigned employees all examine patent applications in a similar field of science and technology. Note to readers, the statistics for the year 2021 are only for January – June 2021, given the date of this article’s publication.
considered complete. In the U.S. and most of the world, patent applications are held in secret and not publicly disclosed for 18 months of pendency.\[49\] Thus, additional patents on a variety of fintech technologies may be pending for near-term agency consideration and final issuance. Nevertheless, the data show an exponential growth in blockchain patent activity. Most notably, it is that Chinese companies are increasing their contribution to the overall growth in global patent activity and are leading in the fintech category with a significant number of fintech patent applications and grants.\[50\]

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\[49\] Generally, in the U.S., the average utility patent application pendency before any final determination as to its grant as a patent may be between 18 and 36 months.

Table 1: Recent USPTO Patent Grants

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<tbody>
<tr>
<td>2010</td>
<td>207,915</td>
<td>233,127</td>
<td>0</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>2011</td>
<td>221,350</td>
<td>244,430</td>
<td>0</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>2012</td>
<td>246,646</td>
<td>270,058</td>
<td>0</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>2013</td>
<td>265,979</td>
<td>290,083</td>
<td>0</td>
<td>0</td>
<td>72</td>
</tr>
<tr>
<td>2014</td>
<td>303,930</td>
<td>329,612</td>
<td>0</td>
<td>2</td>
<td>226</td>
</tr>
<tr>
<td>2015</td>
<td>295,460</td>
<td>322,449</td>
<td>0</td>
<td>2</td>
<td>465</td>
</tr>
<tr>
<td>2016</td>
<td>304,568</td>
<td>334,107</td>
<td>3</td>
<td>7</td>
<td>1478</td>
</tr>
<tr>
<td>2017</td>
<td>315,367</td>
<td>347,642</td>
<td>17</td>
<td>16</td>
<td>3,768</td>
</tr>
<tr>
<td>2018</td>
<td>306,912</td>
<td>339,512</td>
<td>82</td>
<td>24</td>
<td>8,249</td>
</tr>
<tr>
<td>2019</td>
<td>336,846</td>
<td>370,423</td>
<td>319</td>
<td>27</td>
<td>2,354</td>
</tr>
<tr>
<td>2020</td>
<td>360,784</td>
<td>399,055</td>
<td>943</td>
<td>24</td>
<td>N/A*52</td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td>819</td>
<td>26</td>
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</table>

Several factors are driving this accelerated patent pace. Some may be characterized optimistically and others cynically. Patents are perceived as benefitting the inventors and the public in a variety of ways. Patent advocates argue that inventors continue to seek patents because they advance the goals of, *inter alia*, securing capital investment, creating a competitive advantage, and adding to the public storehouse of knowledge. Others argue that such patents are merely akin to trophies and serve no legitimate business purpose. Legal scholars argue that this enormous number of patents is simply irrational because more than 99.9% of patents will never be licensed or litigated. In *Patent Portfolios*, Professors Parchomovsky and Wagner conclude that these previously described trends represent a “patent paradox”:

51 See, e.g., Tim Pohlmann, *Who are the patent leaders in blockchain?*, IAM (June 12, 2019), https://www.iam-media.com/who-are-patent-leaders-blockchain; see also Berndsen, supra note 34.

52 Since nearly all nations hold pending patent applications in secret for at least 18 months, the most recent data is not publicly available as of this article’s publication.


It is abundantly clear that firms act as though patents are important. . . [f]iling patterns and firms’ attitudes toward patents have presented theorists with a puzzle: if patents are valuable, where does their value lie?\footnote{Gideon Parchomovsky & R. Polk Wagner, Patent Portfolios, 154 U. PA. L. REV. 1, 5 (2005).}

In 1973, two commentators made the following cynical observation about the patent system of a generation ago:

Do the officials of the Patent Office really care about the validity of the patents which are issued from their agency, as long as the production goals which they set for the patent examiners concerning the disposal of patent applications are met? The official position of the Patent Office is that they desire the issuance of patents of the highest possible validity. But, in view of their actual conduct concerning production goals, this position must be viewed as at least open to question. As long as the officials of the Patent Office demand greater production of disposal each year . . . it is difficult indeed for anyone with an objective viewpoint to be convinced that they are paying anything more than lip service to the concept of the highest possible patent validity.\footnote{Martin R. Horn & Saul Epstein, The Federal Courts’ View of Patents—A Different View, 55 J. PAT. OFF. SOC’Y. 134, 134 (1973).}

As noted, the USPTO is on pace to issue about one million patents every three years.\footnote{See Patents Through History, supra note 44.} This astonishing output is rooted in the continuous increase in applicants from domestic applicants, the soaring increase in foreign applications, and the overall easing of legal standards around patent eligibility. Further, one must assume that the business community is validating the principle that a patent confers an
economic benefit, either offensively against a party, to raise venture capital, or merely defensively to ward off litigation.

Based on current trends, we can conclude that the volume and pace of fintech-related patents that relate to fintech, for example, blockchain and crypto technologies, will only continue, if not increase, over time. More is more. In recent years, the USPTO has granted a record number of patents across all sectors of technology.\(^{58}\) This growth in patent activity may be attributed to influencing factors, including the evolving legal standards governing patentability, the USPTO’s interpretation of these legal standards in its examination, and perhaps even the industry’s increased demand due to its own irrational behavior.\(^ {59}\)

II. TREND TWO: THE U.S. PATENT OFFICE’S RECENT EXAMINATION GUIDANCE WAS A BOON TO FINTECH-RELATED PATENTED INVENTIONS

The legal standards surrounding the scope of patentable subject matter eligibility (SME) — namely, what precisely can be patented in this country—have evolved due to recent Supreme Court interpretations of the statutory framework. The Patent Act (35 U.S.C. § 101 et seq.) provides the fundamental framework for U.S. patent law, including the parameters of patent-eligible subject matter. Section 101 of the Patent Act provides the fundamental, independent categories of patent-eligible subject matter (SME).\(^ {60}\) Legal scholars note that these categories and the provision’s text can be traced back to the founding of the republic and the first Patent Act of 1790.\(^ {61}\) Section 101 of Patent Act simply states:


\(^{60}\) The USPTO maintains a web page summarizing its policy and interpretation of § 101. See Subject matter eligibility, U.S. PAT. TRADEMARK OFF., https://www.uspto.gov/patents/laws/examination-policy/subject-matter-eligibility?MURL=PatentEligibility (last visited July 16, 2021). Readers should be advised that subject matter eligibility is only but one of the factors under the statute. The Patent Act also provides other requirements for a patent, including novelty (§ 102), non-obviousness (§ 103), and more. For this Article’s discussion and purposes, these criteria are less important for the principal analysis.

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.\textsuperscript{62}

Legal observers explain that the operative, overarching theory behind patentable subject matter is that Congress intended the section to be interpreted broadly, tempered by the other statutory requirements of the Act.\textsuperscript{63} Advocates often invoke Congress’s guidance, which alleges that one can patent “anything under the sun that is made by man.”\textsuperscript{64}

In practice, the legacy of these four statutory categories is anything but simple. Every generation seems to grapple with the nature and types of inventions properly constituting patent-eligible subject matter, whether the proposed eligible subject matter was software,\textsuperscript{65} surgical methods,\textsuperscript{66} or genetically modified organisms,\textsuperscript{67} to name just a few. In this article’s context, the legal issues center on whether the statute’s grant of patent subject matter eligibility to a “process” provides the basis for the protection of various methods for finance, economic activity, and commerce relying on technology. Here the past is prologue, and the current legal debate on this question is as complicated as ever.

The legal jurisprudence pertaining to patent-eligible subject matter (Section 101) fills tomes. The legal analysis goes well beyond the plain meaning of the words of the statute. A heavy judicial gloss

\textsuperscript{64} The Committee Reports accompanying the 1952 Patent Act. S. Rep. No 1979, 82d Cong., 2d Sess., 5 (1952); H.R. Rep. No. 1979, 82d Cong., 2d Sess., 6 (1952); S. Rep. 1979, at 5; H. R. Rep. 1923, at 6 (“A person may have ‘invented’ a machine or a manufacture, which may include anything under the sun that is made by man, but it is not necessarily patentable under section 101 unless the conditions of [this] title are fulfilled.”).
has animated the meaning of this section. For the fintech world, three recent U.S. federal court opinions have had a significant impact on the jurisprudence surrounding Section 101.\(^{68}\)

In Section 101 jurisprudence, the federal courts have acknowledged, if not wholly judicially created, a number of judicial exceptions to patentable subject matter, such as a prohibition on the patenting of laws of nature (\textit{e.g.}, \(E=mc^2\)).\(^{69}\) In the landmark 1980’s opinion \textit{Diamond v. Diehr}, the U.S. Supreme Court reaffirmed three categories of subject matter that are unpatentable, namely “laws of nature, natural phenomena, and abstract ideas.”\(^{70}\) In upholding the patentability of a process incorporating a mathematical formula, the Court wrote:

\begin{quote}
[A] new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that \(E = mc^2\); nor could Newton have patented the law of gravity. Such discoveries are “manifestations of . . . nature, free to all men and reserved exclusively to none.”\(^{71}\)
\end{quote}

In making this distinction between the protection of pure and applied scientific and mathematical principles, the Supreme Court ruling validated a fundamental concept still quite applicable to fintech today. Namely, many fintech and intangible process/method inventions are implicated as they inevitably incorporate a mathematical formula as a fundamental element of their invention. A recurring theme for the Supreme Court’s patent jurisprudence is defending the public “storehouse of knowledge” and avoiding the private preemption of that knowledge.\(^{72}\) For the Supreme Court, it is

\(^{68}\) In the current discussion of the Supreme Court §101 process/method jurisprudence, a third case is also frequently mentioned. This third case concerns issues in the life sciences sector. Hence, for the purposes of this Article, it is not relevant for the fintech sector issues. \textit{Mayo Collaborative Servs. v. Prometheus Lab’ys, Inc.}, 566 U.S. 66 (2012) (holding that the process to determine the dosage of naturally occurring drug metabolites is ineligible patentable subject matter pursuant to §101).


\(^{70}\) \textit{Diamond v. Diehr}, 450 U.S. 175, 185 (1981) (upholding the patentability of a process that as a whole incorporates a mathematical formula).


\(^{72}\) While the judicially crafted exceptions are beyond the plain text of the statute, the Court has observed that they are “part of the storehouse of knowledge of all men . . . free to all men and reserved exclusively to none.” \textit{Funk Bros. Seed Co.}, 333 U.S. at 130.
not permissible to confer a patent monopoly based merely on an algorithm or a fundamental form of human economic business activity. Notably, the fundamental technology underlying many fintech ledger technologies is math and data (e.g., the encryption’s computation of hash of a certain bit length). Opponents argue that more is necessary before invoking patent protection. The federal courts have struggled to draw an appropriate line. While some legal questions around patentability have been settled for decades, many of the Supreme Court’s latest Section 101 opinions have proven surprising and disruptive to the regular order.

Many legal observers and industry insiders believed for decades that the courts had relied upon a judicially crafted business method exemption to patent subject matter eligibility. In 1999, the U.S. Court of Appeals for the Federal Circuit expressly rejected that principle. In *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, the court held that patents directed at methods of doing business were indeed patent-eligible subject matter. The Federal Circuit’s reasoning was based on a broad interpretation of the Patent Act’s Section 101 and its application of the judicially crafted test considering a claimed process’s “useful, concrete, and tangible result.” *State Street’s* controversial opinion instantly became notorious and launched a public hue and cry that raged for nearly two decades.

Q. Todd Dickinson, the Assistant Secretary of Commerce and the head of the USPTO during the Clinton administration, was responsible for the agency’s patent examination policy during the intense debate over the *State Street* opinion. He was an ardent supporter of patents on methods and processes covering a broad spectrum of eligibility, including business and commercial activity. Dickinson had testified before congressional hearings and written extensively in the defense of business-related patents, including the following remarks:

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73 In this context, “judicially crafted” means a statutory construction, analytical framework, or judge made law outside the plain text of the Patent Act.


75 *Id.*
The private sector looks for financial returns on its research investment, whereas [the U.S. Government] does not. Of course, the financial returns are very often packaged as, or linked to, intellectual property rights. Thus the increasing role of private funding in R&D has meant an increasing role for the intellectual property system. . . . As companies have come to realize that increasing value rests on knowledge, they have, naturally enough, pushed to convert that value into assets. One way—perhaps the principal way—that conversion occurs is through intellectual property rights. . . . In 1999, in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, the federal courts validated the PTO analysis in those guidelines. The court also rejected the so-called “business method exception,” stating that inventions of this nature may be invalid on other grounds, such as lack of novelty or obviousness, but not because they were improper subject matter.\(^76\)

In the ensuing years, the agency’s examination policy resulted in the grant of thousands of business method patents.\(^77\) Hence, many of these business method patents were asserted against parties and litigated in the federal courts; while others were used as a basis to establish and finance fintech companies.

The U.S. Supreme Court ultimately considered a variety of these subject matter eligibility issues in a trio of cases. In 2010, in *Bilski v. Kappos*, the Supreme Court considered the patentability of a rejected application for a method of hedging economic risk.\(^78\) However, the Court spoke to a much greater question about the scope of patentability. The Court upheld the lower court’s invalidation of the


\(^{78}\) The patent-application-in-suit was rejected at multiple stages of the process. U.S. Patent Application No. 08/833,892. The process patent application was “for a claimed invention that explains how buyers and sellers of commodities in the energy market can protect, or hedge, against the risk of price changes.”
business method patent-application-in-suit. In retrospect, some may regard this litigated method as a very trivial type of a patented process. More significantly, in Bilski, the Court’s 9-0 opinion expressly rejected the long-standing “machine-or-transformation test” as the judiciary’s sole test of a process’s patentability under Section 101. Significantly, the Court also preserved business method patents as a viable category of patent-eligible subject matter. Justice Kennedy’s majority opinion preserved the category of business method patents at large based on its statutory construction of the Patent Act. The Court observed, inter alia, that “Congress took this permissive approach to patent eligibility to ensure that ‘ingenuity should receive a liberal encouragement.”

In the 2014 case Alice Corp. v. CLS Bank International, the U.S. Supreme Court further considered the scope of patent-eligible inventions. Here, the Court essentially narrowed the scope of the patentability of process/method patents, though they were still preserved as a class. The Supreme Court rejected the lower court’s SME analytical framework, rather opting for a two-part patentability analysis. The Alice two-prong analysis for a claimed patented process first considers whether the claim contains an “abstract idea”; and second, whether the said claim has any sufficient additional elements providing an “inventive concept” thus transforming it into the requisite patentable eligible subject matter.

Alice’s jurisprudence and its new, more restrictive patent eligibility standards were a welcome relief for many in the financial services and software industries. In contrast, Alice was poorly received in some quarters, with some legal practitioners arguing that

80 Id at 604.
81 Id. at 607–08.
82 Id.
83 Id. at 601 (quoting 5 Writings of Thomas Jefferson 75–76 (H. Washington ed. 1871)).
85 Id. at 226.
86 Id. at 217.
87 Id. at 218–21, (citing Mayo Collaborative Servs. v. Prometheus Laboratories, Inc., 566 U.S. 66, 71 (2012)).
the resulting two-prong test was confusing and unpredictable. Nevertheless, as a result, the business of business method patents saw a sea change. In practice, it became extraordinarily difficult to obtain patent protection on such claimed method and process type inventions, and the USPTO’s allowance rate percentage for such inventions declined into the single digits.

In response to the Bilski-Alice-Mayo Supreme Court opinions about subject-matter eligibility, the USPTO in 2019 issued new patent examination guidance (“PEG”) to its corps of 8,000-plus patent examiners. The new agency PEG guidance arguably tracked the Alice analytical framework and mandated its patent examiners to apply Alice’s two-part analysis (i.e., prong one considered whether the application claim presented an abstract idea, while prong two considered whether the application recited redeeming “inventive concept” elements). The resulting changes in examination policy were striking because they substantially increased allowance rates for such types of intangible inventions. Certainly, the run-of-the-mill business method patents (i.e., a method for “buying low, selling high” or paying a bill with cryptocurrency without technologically more) were still dubious and through additional scrutiny still screened out as invalid. Upon review of the evidence and results, one can conclude that the PEG guidance resulted in increasing the coarseness of the agency’s examination filter and yielding a corresponding increase in patentability across many fields, including fintech.

In 2020, the USPTO’s Office of the Chief Economist assessed the impact of the agency’s recently revised patent examination guidance (“PEG”). It issued a report that confirmed what many in the tech industry had suspected, if not simply outright feared. The USPTO

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89 Ping-Hsun Chen, Patent-Eligibility Standard for Network Architecture Patents Under the Federal Circuit’s Jurisprudence, 36 SANTA CLARA HIGH TECH. L.J. 1, 6 (2019) (“The Alice standard has been criticized by some commentators because of its confusion and vagueness. For example, one commentator observes that the Federal Circuit has struggled in defining the scope of abstract ideas and questions if the Federal Circuit has turned step two analysis into a novelty test by focusing on whether claim elements are conventional.”).

90 See Adjusting to Alice USPTO patent examination outcomes after Alice Corp. v. CLS Bank International report of the USPTO, U.S. PAT. TRADEMARK OFF. (Apr. 2020), https://www.uspto.gov/sites/default/files/documents/OCE-DH_AdjustingtoAlice.pdf (“This report focuses on two USPTO patent examination outcomes and evaluates how these outcomes changed in response to the Alice decision.”) (hereinafter Adjusting to Alice).

91 See generally Alice Corp., supra note 84.

92 Business methods are reviewed by section 705 of the USPTO examination corps.

93 See Adjusting to Alice, supra note 90.
was able to dramatically increase the allowance rate of intangible inventions through its new examination policies, which debatably correctly tracked the recent Supreme Court patent SME jurisprudence.94

In its findings, the USPTO argued that “[t]he evidence suggests that the 2019 PEG provided clarity and structure to the decision-making process.”95 The report further illustrated the effect of the new examination guidance in reducing the probability of a given patent receiving a Section 101 rejection.96

**Chart 4: USPTO Adjusting to Alice Report**97

In practice, reducing the probability of any given basis for rejection suggests an increase in the allowance of an application. This result is consistent with the overall data reported by the article above. For fintech, the implications of the agency PEG guidance and

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95 Adjusting to Alice, supra note 90, at 7.
96 Note that while the probability of a Section 101 rejection decreased, a given patent could still be finally rejected for another defect (e.g., lacking novelty (Section 102), non-obviousness (Section 103), etc.).
97 Adjusting to Alice, supra note 56, at 5.
procedures must be studied more closely. Given the 2019 PEG guidance, the allowance rate for the run-of-the-mill, pure business method patent category (Class 705) is still quite low. Notably, in contrast, the allowance rate for patents on more complicated elements in fintech and crypto, such as on the security aspects of a system or the database ledger, are alleged to have tripled, rising from 10% to 30% across various technology centers, including 2400 (ledger aspects) and 2800 (databases).\textsuperscript{98} Looking ahead, it is unclear whether this examination guidance will remain in effect in the future.

Congressional leaders heeded the hue-and-cry from stakeholders and the public about the alleged uncertainty and confusion surrounding the state of patent-eligible subject matter (Section 101). During the 116th session of Congress (2019–2020), the U.S. Senate Judiciary Intellectual Property Subcommittee held three days of hearings that featured more than 45 witnesses.\textsuperscript{99} Lawmakers circulated and discussed proposed draft patent SME Section 101, which was legislation intended to clarify, if not to ease, eligibility. Ultimately, these efforts yielded no legislative action. Today, legal observers are pessimistic that Congress will enact any reforms concerning the eligibility question anytime in the near future.\textsuperscript{100} Accordingly, the federal courts will continue to be the main source of interpretation and guidance concerning these patentability issues.

In sum, the shifting legal standards around the once bedrock principle of patent subject matter eligibility (Section 101) has had a material impact on fintech patents and arguably industry innovation. This history emphasizes the government’s powerful role in securing patent rights on fintech innovation, and hence, likely securing the corresponding underlying investment in this field. The shifting standards have modulated both patent applications and allowances in the field, not unlike the turning of a radio with a dial. In the face of the perceived threat of this increased patent activity, the finance and

\textsuperscript{98} Phone interviews with UPSTO examiners on file with the author.
\textsuperscript{100} Eileen McDermott, USPTO Delivers on Senators’ Request for Patent Eligibility Jurisprudence Study, IPWATCHDOG (July 8, 2021), https://www.ipwatchdog.com/2021/07/08/uspto-delivers-senators-request-patent-eligibility-jurisprudence-study/id=135339/ (“[O]ne of the authors of the March letter, Senator Thom Tillis (R-NC), led the charge in 2019 trying to reach agreement on reforms to Section 101/ patent eligibility law, ultimately declaring it ‘dead on arrival’ without stakeholder consensus.”).
technology industries have advocated lawmakers and regulators pursue a variety of remedial safeguards.

III. TRENDS THREE: THE FEDERAL COURTS STRENGTHENED SAFEGUARDS AGAINST POOR PATENT QUALITY

In response to almost a decade of intensive industry lobbying, the U.S. Congress enacted a sweeping reform of the patent law—the most significant change since the 1952 Patent Act.\textsuperscript{101} In 2011, Congress enacted the America Invents Act (AIA) which added a number of sweeping statutory reforms to the patent system.\textsuperscript{102} One significant reform established a number of procedures within the USPTO for reconsidering poor-quality or weak patents that were previously issued and potentially subject to some type of federal court litigation challenge.\textsuperscript{103} The goal was to establish an administrative alternative to costly, lengthy, and burdensome court litigation.\textsuperscript{104} The AIA established the following procedures within the USPTO’s Patent Trial and Appeal Board, each having different criteria for reconsidering the validity of an issued patent: (1) \textit{inter partes} review ("IPR"), (2) post-grant review opposition ("PGR"), and (3) the Transitional Program for Covered Business Methods (CBM).\textsuperscript{105}

These three PTAB mechanisms continue to prove significant in many ways. The procedures have proven even more popular and effective than predicted, such that their use has far exceeded the anticipated demand. Since the AIA’s enactment, more than 14,000 such administrative cases have been brought to review patent validity.\textsuperscript{106} It has been widely reported that approximately 85\% of patents were invalidated through these cases.\textsuperscript{107} These procedures have also proven very unpopular with certain stakeholders, especially patent


\textsuperscript{104} Id. at 48 (The AIA legislative report explains that new post-grant review proceedings to review patents with “the purpose of the section as providing quick and cost effective alternatives to litigation.”).

\textsuperscript{105} Patent Act of 1952, supra note 103, at § 18 (Note that the AIA also contains several other reforms, such as provisions directed at a category of patents for tax avoidance strategies.).


\textsuperscript{107} Id.
owners seeing who have seen their patents struck down. Accordingly, a number of legal suits have been brought, challenging the AIA’s procedures and legal regime. Many of these anti-AIA legal challenges have failed. The federal courts have provided guidance that, in many ways, has further strengthened the proceedings and its ability to invalidate challenged patent claims.

Two arguably conflicting trends are emerging. First, the USPTO, the gatekeeper agency, is more generous toward those seeking patents. It continues to reevaluate and ease its patentability standards and accelerate the pace of patenting activity. Second, the USPTO’s mechanisms for invalidating poor-quality patent claims across all technology fields have been strengthened through recent federal court rulings. Accordingly, it appears that the government giveth with one hand and taketh away with the other. Observers conclude that despite the continued existence of patents on esoteric, intangible inventions (e.g., underlying blockchain ledger elements), the patent system is evolving toward a different cohort of patents with higher-quality claims.

The following are two recent federal cases of note because they strengthen the existing agency procedures and mechanisms to invalidate patents:

*Thryv, Inc. v. Click-To-Call Technologies, LP*: In 2020, the U.S. Supreme Court held that key Patent Act AIA trial procedures (35 U.S.C. § 314(d)) were precluded from judicial review. It foreclosed judicial review of the USPTO PTAB institution decision pursuant to the agency’s determination of the statutory one-year time bar. While petitioners challenging a patent by filing an *inter partes* review (IPR) petition must do so within the statutory time frame, the resulting USPTO’s institution decision cannot be subsequently challenged in federal court. In turn, this administrative mechanism provides those petitioning the USPTO seeking to invalidate patents additional safeguards toward the institution process. In construing these Patent Act AIA provisions, the Court explained that this furthers the goal of the

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110 *Thryv, Inc. v. Click-To-Call Technologies, LP*, 140 S. Ct. 1367 (2020).
statute, which is “to weed out bad patent claims efficiently,” not “to save bad patent claims” through procedural technicalities.\footnote{Id. at 1374.}

\textit{Security People, Inc. v. Iancu}: In 2020, the U.S. Court of Appeals for the Federal Circuit held that a constitutional challenge to an IPR final written decision is subject to judicial review only by appeal to the Federal Circuit, not by collateral attack in district court under the Administrative Procedures Act (APA).\footnote{Security People, Inc. v. Iancu, 971 F.3d 1355 (Fed. Cir. 2020).}

These two court opinions strengthened the Patent Act’s AIA trials as an important tool to check patent quality and invalidate poor-quality patents across all sectors, including fintech and blockchain. In contrast, some critics argue that while these court rulings may serve as a generalized improvement for the innovation ecosystem against the most egregious patents, the fintech industry may still be plagued by a wide variety of poor-quality patents and specious patent litigation.\footnote{See Eileen McDermott, \textit{Special Interest Group Implores Congress to Extend CBM Program}, IPWATCHDOG (Sept. 3, 2020), https://www.ipwatchdog.com/2020/09/03/special-interest-group-implores-congress-extend-cbm-program/id=124863/ (last visited Aug. 1, 2021).} Other critics argue that such procedures chill innovation as the patent system seems absurd and futile in the end.\footnote{See letter of IEEE-USA to Sens. Tillis and Coons, IEEE-USA (July 14, 2020), https://ieeeusa.org/wp-content/uploads/2020/07/071420.pdf (“Protections for technologies from artificial intelligence to DRM to blockchain or to cybersecurity— which are implemented through software—are put at greater risk because of the CBM Program.”).} It is likely that we will see a robust public policy debate over additional congressional reforms to the Patent Act (such as the reinstatement of the now-expired CBM program), the USPTO’s internal rulemaking pertaining to examination guidelines, and its PTAB procedures. Any such reforms may be years in the making. In the alternative, it is telling that the fintech industry is also looking to a variety of private sector, industry-based legal defensive mechanisms.
IV. TREND FOUR: PRIVATE SECTOR CONTINUED TO ORGANIZE TO FORM LITIGATION DEFENSIVE MECHANISMS

In response to the continuing threat of costly patent litigation, the fintech industry has organized several private sector organizations to ward off specious patent legal challenges. Patent litigation is notoriously expensive to defend. Legal costs often climb into the high six figures, if not into the millions. Observer’s label patent litigation as a “bet the company” event and that it poses an existential threat.

A variety of novel organizations have emerged to help the fintech industry:

The LOT Network: The License on Transfer (“LOT”) Network is a nonprofit organization formed in 2014 to defend high-tech companies across a number of technology sectors from patent litigation threats. The LOT Network website boasts that they “prevent unwanted litigation while preserving the use of your patents. Join the community of 1600+ global industry leaders who have collaboratively immunized themselves against lawsuits from Patent Assertion Entities (PAEs, also known as ‘patent trolls’).” Its founding members include a several tech companies. Its 1,100-plus membership includes a number of

116 Id. at 25 n.47 (“For the 18 percent of those lawyers that responded, AIPLA reports that the median legal cost for one patent infringement lawsuit was $650,000 when less than $1 million was at risk for damages; $2.5 million when between $1 million and $25 million was at risk for damages; and $5 million when more than $25 million was at risk for damages. These costs include legal fees and exclude damage awards.”).
120 See LOT Network Achieves Significant Membership Milestone – 1,000 Members and Counting, LOTNETWORK (Oct. 28, 2020),
leading innovative companies that secure fintech patents, including IBM, Square, and Visa.\textsuperscript{121}

\textit{Unified Patents:} Unified Patents is a private company that helps member companies defend against patent litigation by offering a suite of services based on either a free or paid membership.\textsuperscript{122} In turn, it offers a range of services, such as analytical data, legal services, and lobbying.\textsuperscript{123}

\textit{COPA:} In 2020, under Jack Dorsey’s leadership, Square, Inc. organized, the Crypto Open Patent Alliance (“COPA”).\textsuperscript{124} The goal is for the member fintech companies to place their crypto patents in a shared library to help ward off aggressive patent assertions in court by so-called non-practicing entities (NPEs) or patent trolls.\textsuperscript{125}

The emergence of such industry defensive organizations is quite telling. While companies invest millions into fintech innovation research and development and in the pursuit of patent protection, they are also seriously concerned about potential patent infringement liability and are making a concerted effort to ward off such problematic litigation. While industry players may keenly desire various aspects of patent reform, these organizations are an acknowledgment that any type of regulatory relief and litigation reform may be difficult to achieve and remains politically challenging and a long way off.

\textsuperscript{123} \textit{Id.}
V. TREND FIVE: THE EMPIRICAL DATA SUGGESTS THAT UNCERTAINTY IN THE VALUE OF FINTECH PATENTS

It is notoriously difficult to value an intellectual property asset, especially for cutting-edge patented technologies, (e.g., since they may not have secured an established market). A variety of methodologies may be employed based on a wide range of factors (e.g., an economic analysis utilizing an expected return on investment, the aggregate value of the future licensing royalty stream, etc.). Patents reflect a proxy on innovation and are, often a result of millions of R&D spending and capital investment. An old adage among patent attorneys is that a patent is only worth as much as the resulting monetary damages arising from a patent infringement lawsuit. In essence, patent litigation is a proxy for economic value. The establishment of the USPTO PTAB AIA post-grant validity trials was a direct response to costly and burdensome patent litigation. In an attempt to valuate fintech patents, the author has reviewed recent USPTO CBM records to assess the frequency of blockchain or crypto patents involved in such post-grant disputes.

This article relies on the hypothesis that one can correlate the economic value of a given innovation, such as those protected by fintech patents covering blockchain and bitcoin, with the amount of patent activity. Many legal observers and economists argue that patents represent investment (e.g., human capital and R&D) secured by the patent right. Notably, many will further correlate a patent’s economic value with its post-grant patent activity, (e.g., disputes and litigation). The hypothesis supposes that rational behavior dictates

128 See, e.g., Parchomovsky & Wagner, supra note 55, at 18 (2005) (“Given that virtually all the corporations that engage in intensive patenting operate in highly competitive industries, and that many of them are Fortune 500 companies, it is highly unlikely that such irrational behavior could persist for so many years without grave economic consequences . . . this is not borne out by reality . . . “in discussing patents as internal metrics of an entity’s performance, innovation, R&D, or individual employee’s productivity.”); see also Frederic M. Scherer, INNOVATION AND GROWTH: SCHUMPETERIAN PERSPECTIVES 3–7 (1984) (describing phases of investment in development of inventions).
that when a patent has economic value, it is often the subject of some type of commerce and inevitably legal activity (e.g., infringement litigation) concerning the disputed infringing commercial activity. Parties use the USPTO’s PTAB forum, in turn, to litigate issues pertaining to a patent controversy. Arguably, Congress established the CBM forum with the express purpose of reducing the frequency and cost of litigation in the financial services industry and patent litigation, including business method patent (BMP) litigation. This universe theoretically includes fintech technologies, including those that have a blockchain or crypto component. Further, one may also consider the creation of the industry sector defensive organizations described above (i.e., the LOT Network and COPA) as evidence that the fintech industry still considers patent litigation as inevitable, expensive, vexing, troublesome, and often specious.

A search of the USPTO PTAB records yielded some surprising results. First, no “blockchain” patents have been the subject of AIA adversarial disputes to date, including the CBM program. Second, the CBM program was used quite modestly compared with other

Moore et. al., ARTICLE: Valuable Patents, 92 GEO L.J. 435, 437 (2004) (“We conclude that the easiest way to discover the characteristics of valuable patents is to study litigated patents.”). Id. at 437; see also John R. Allison & Thomas W. Sager, Valuable Patents Redux: On the Enduring Merit of Using Patent Characteristics to Identify Valuable Patents, 85 TEX. L. REV. 1769 (2007) (a key factor in the patent value (or worth) analysis for Allison et al. is estimating the probability that a patent is litigated.).

130 The U.S. Government Accountability Office (GAO) reviewed the USPTO CBM program and concluded the following: “Stakeholders we interviewed generally agreed that the CBM program has reduced litigation, and many said there is value in maintaining some aspects of the program. Stakeholders generally agreed that the CBM program has contributed to a decrease in litigation involving business methods patents and that the program has had positive effects on innovation and investment.” U.S. Patent and Trademark Office: Assessment of the Covered Business Method Patent Review Program, U.S. GOV’T ACCOUNTABILITY OFF. 34 (Mar. 12, 2018), https://www.gao.gov/assets/gao-18-320.pdf.


132 Querying Results from Keyword Text Search of “Blockchain” and “Bitcoin” within the Decision Search Bar, USPTO PATENT TRIAL AND APPEAL BOARD DECISION DATABASE, https://developer.uspto.gov/ptab-web/#/search/decisions.
PTAB trials (i.e., only about 500 actions during the program’s seven-year existence) and compared with 14,000-plus AIA trials. Again, there were no blockchain-related patents in these disputes. More surprisingly, virtually no blockchain or cryptocurrency patents were subject to this post-grant federal agency review.133 To date, one can conclude that these species of fintech patents have neither developed significant economic market value in themselves nor have they been the subject of significant federal litigation disputes.134

There are numerous alternative possibilities that explain why fintech patents covering blockchain and crypto-related technologies do not arise in these proceedings. There may be possible reasons including: (1) other patent quality safeguards have weeded out poor-quality or otherwise weak patent claims before grant or before they posed a threat;135 (2) the current PTAB procedures only provided limited bases for disputing poor-quality patents; (3) the existence of procedural defects in the PTAB rules and procedures prohibit a defendant’s participation; (4) effective marketplace licensing regimes are in place; (5) private sector litigation defensive organizations are effective; (6) fintech platforms—especially in the cryptocurrency space—are open source; and (7) some patents are simply litigated later in their lifetime (again, many of these patents were only granted in the past five years). Further, any such patent cases may have merely been settled by the parties outside the dispute forums. The settlement terms may have included economic damages and/or the cross-licensing of technologies among parties.

For interested readers, this article includes an appendix summarizing the recent CBM cases during 2020, including the case number, the disputed patent, and the party litigant information. The CBM review process has expired pursuant to the AIA’s statutory sunset provision.136 Legislators were correct in developing a transitional pilot program to address the legitimate patent quality and

133 Id.
134 Additionally, a search of the USPTO PTAB database of ex parte appeal reviews of such patent applications find the agency has merely considered 17 blockchain applications, with the outcome that some examiner rejection was affirmed, as of this Article’s publication. See Board Decisions, supra note 136.
135 Board Decisions, supra note 136 (regarding the ex parte review).
136 It is notable that legal observers concluded that upon a statistical analysis of the CBM program that “the success rate of petitioners steadily declined to the point that none prevailed in CBMR petitions filed after July 2018 for which the PTAB rendered a decision.” Ron D. Katznelson, The CBM program should expire this week as provided by law — Effective alternatives for robust administrative reviews of issued patents remain, US INVENTOR 6 (Sept. 13, 2020) https://usinventor.org/wp-content/uploads/Katznelson-on-CBM-sunset.pdf.
litigation risk concerns of the financial services industry. Policymakers and regulators should certainly continue to monitor fintech patent litigation in the federal courts and PTAB AIA trials, including evaluating empirical data as presented herein. Patent litigation activity pertinent to fintech-related technologies can help assess the economic value of underlying patented technology. Given the accelerating pace of global patent grant activity, we may simply be living in the fintech litigation calm before the storm. The author acknowledges that, while these results are interesting on their face, they are still inconclusive and demand further study.

CONCLUSION

This article’s fundamental question — *Do patents advance fintech innovation?* — may be answered by studying the recent empirical data regarding fintech patents. The promised blessings of intellectual property (IP), including those expressed for the patent protection of fintech, and increasingly, blockchain-based technologies, are premised on its dual potential to promote innovation and to benefit the public. A variety of players – ranging from mature banking institutions, established technology names, speculative investors, disruptive start-ups – are making significant investments of time, capital, and other resources to obtain global IP rights at an increasing pace, as evidenced by the application and grant data for thousands of blockchain-related patents worldwide annually. The empirical evidence to date further illustrates the patent paradox described by many scholars. Data shows that companies are globally investing in fintech patents at an accelerated pace. In contrast, the evidence also suggests that the value of and the expected return on these fintech IP asset investments is presently very unclear. Despite America’s two-century-plus experience with the patent system, patents still present curious questions about their utility, especially their ultimate value for today’s increasingly fintech and crypto-centric world.

While fintech is still in its nascency, its dramatic rise poses important public policy and legal challenges for policymakers, regulators, and industry stakeholders. There is a long-standing and intense debate surrounding the incentives and the societal value of patents in driving innovation in any industry sector while simultaneously enhancing the public good. The true utility of fintech patents may be debated by numerous stakeholders, including policymakers, regulators, the courts, and the market. A vast amount of literature argues that historically patents have long secured valuable rights around innovation and in turn, are a lagging economic indicator.
of incentivized private investment. The wealth of widely available empirical data is a useful tool for policymakers and regulators. The empirical data confirms a significant amount of surging activity among U.S. and global patent trends (e.g., application rates, issuances, and litigation). The practical reality of the premise’s conclusion may seem unclear, but certainly worthy of further scrutiny. Ultimately, the answer to these curious questions about the fintech sector’s ongoing IP asset obsession may be determined by how disruptive, innovative, and socially beneficial these patented technologies ultimately prove to be.
APPENDIX

The following data provides a summary of financial services-related patents disputed in the USPTO Transitional Program for Covered Business Methods (CBM) during the 2020 calendar year. The chart provides the patent-in-dispute, the adverse parties, and other related case information. This sample suggests that litigation concerning blockchain or crypto-related patents did not arise in within this program during the period reviewed.

The USPTO CBM program was designed as a temporary initiative and has been discontinued due to the lapse in statutory authority.

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<th>U.S. Patent Number</th>
<th>Patent Subject matter</th>
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<th>Defendant (Petitioner)</th>
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<td>Unisone Strategic IP</td>
<td>Life Technologies Corp.</td>
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<td>8,534,551</td>
<td>Systems and methods for sharing video with advertisements over a network</td>
<td>Electronic Receipts Delivery systems, LLC</td>
<td>Square, Inc.</td>
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<td>CBM 2020-0020</td>
<td>7,636,687</td>
<td>Method and system for completing a lease for real property in an online computing environment</td>
<td>Karya Property Management, LLC</td>
<td>Resman, LLC</td>
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<td>CBM 2020-0021</td>
<td>8,392,311</td>
<td>Currency trading system, methods, and software</td>
<td>Oanda Corp.</td>
<td>Gain Capital Holdings, Inc.</td>
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<td>CBM 2020-0022</td>
<td>7,146,336</td>
<td>Currency trading system, methods, and software</td>
<td>Oanda Corp.</td>
<td>Gain Capital Holdings, Inc.</td>
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<td>CBM 2020-0023</td>
<td>7,496,534</td>
<td>Methods for trade decision making</td>
<td>Oanda Corp.</td>
<td>Gain Capital Holdings, Inc.</td>
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<td>CBM 2020-0026</td>
<td>9,659,296</td>
<td>Method and system for presenting representations of payment accepting unit events.</td>
<td>Payrange, Inc.</td>
<td>Kiossoft Technologies, LLC, Techtrex, Inc.</td>
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<td>CBM 2020-0027</td>
<td>10,362,341</td>
<td>Systems and methods for sharing video with advertisements over a network.</td>
<td>Videoshare, LLC</td>
<td>Google LLC and Youtube, LLC</td>
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<td>CBM 2020-0028</td>
<td>8,825,887</td>
<td>For performing data processing or other operations used in the practice, administration, or management of a financial product or service.</td>
<td>Sito Mobile R&amp;D IP, LLC and Sito Mobile, Ltd.</td>
<td>Hulu, LLC</td>
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<td>CBM 2020-2029</td>
<td>10,467,585</td>
<td>A method of optimizing computerized inventory orders over a distributed network</td>
<td>Jason K. Smith d/b/a Dust Bowl</td>
<td>TIZ Inc. d/b/a PROVI</td>
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