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Antitrust and Intellectual Property Rights: Toward a New Schumpeterian Approach

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Abstract

The protection of intellectual property rights is worsening, but populist antitrust enforcement is expanding. Both tendencies inhibit the process of innovation. An alternative approach to antitrust and intellectual property is both conceivable and essential. Rising resistance to intellectual property rights (IPRs) is gathering speed. Because intellectual property rights grant intellectual monopolies, officials must protect them with more force. Adopting a comprehensive, policy-optimizing innovation would bring social advantages and avert the 'tragedy of the uncommons.'

This article opens by conceptualizing innovation as a result of both corporate scale and the remarkable lever that property rights constitute. Intellectual property reformers are concerned with the property lever, whereas antitrust populists are concerned with corporate scale. The article then illustrates that both approaches inhibit innovation by employing an unsuitable conception of competition. Not only is an alternate approach to the IP-antitrust interface required, but it is also feasible.

This essay articulates a policy adjustment that would foster innovation by integrating the IP-antitrust interface more effectively. We advocate that government agencies adopt a "New Schumpeterian Approach" that would reintroduce the property norm governing innovation and eliminate mistaken antitrust concerns in patent negotiations to maximize innovation incentives. The "New Schumpeterian Approach" would avert the tragedy of the commons at the IP-antitrust interface.

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I. Introduction

Tensions between antitrust and intellectual property rights (IPRs) are discernible.[1] Antitrust challenges monopoly, while IPRs grant monopoly. Antitrust remains skeptical about the use of market power, and IPRs encourage the use of market power. Antitrust aims to maximize competition, whereas IPRs aim to maximize innovation. Antitrust rejects the unlimited rights to exclude competitors, whereas IPRs grant rights to exclude competitors. Antitrust seeks to "deconcentrate" market structures via an anti-bigness bias, while IPRs enable the concentration of assets via a size-neutral approach. Antitrust breaks into existing property rights and IPRs create ex-nihilo property rights. Antitrust supports static competition and IPRs advance dynamic competition. Antitrust redistributes current innovations, and IPRs foster subsequent innovations. Antitrust favors "competitive" capitalism, while IPRs favor "monopolistic" capitalism.[2]

Antitrust focuses on access to proprietary assets. By contrast, IPRs focus on exclusion from proprietary assets. Hence, while antitrust creates entitlements to break into platforms and markets, IPRs exclude entitlements from platforms and markets. The opposition between antitrust and IPR protection epitomizes the incentive versus access paradox: greater mandatory access to innovation for competition discourages the creation of inventions in the first place, which paradoxically provides the basis for the dynamic process of competition to unfold.[3] In sum, antitrust undoes what IPRs create. Similarly, IPRs cherish what antitrust despises.

The relevant agencies—the Department of Justice (DOJ) and the Federal Trade Commission (FTC)—codified the complex relationship between antitrust and IPRs in 1995, when they jointly issued the Antitrust Guidelines for the Licensing of Intellectual Property.[4] The complex relationship between antitrust enforcement and intellectual property rights (IPRs) faces a long paradox. On the one hand, commentators commonly recognize the "tension" and "problem" leading to an "unstable and problematic" relation, or a "fundamental conflict" and contradiction between the two areas of law and enforcement.[5] On the other hand, enforcers have been keen to portray a naïve and rosy picture

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1 For an account of such tension, see Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1820 (1984).

2 Joseph Schumpeter made the dichotomy between "competitive capitalism" and "monopolistic capitalism" when he wrote that "monopolistic capitalism" where big businesses operate, is superior to "competitive capitalism," which works under "completely unrealistic conditions" of perfect competition. *See* JOSEPH SCHUMPETER, CAPITALISM SOCIALISM, AND DEMOCRACY (Taylor & Francis ed., 2003) (1942), 189.

3 Oskar Liivak, The (Relatively) Easy Case for Patents on Inventions, Draft for IPSC 10 (August 2012), https://web.stanford.edu/dept/law/ipsc/Paper%20PDF/Liivak,%20Oskar%20-%20Paper.pdf.

4 *Antitrust Guidelines for the Licensing of Intellectual Property*, DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION (April 6, 1995), https://www.justice.gov/atr/archived-1995-antitrust-guidelines-licensing-intellectual-property; *Antitrust Guidelines for the Licensing of Intellectual Property*, DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION (January 12, 2017), https://www.justice.gov/atr/IPguidelines/download. *See also* Azam H. Aziz, Note, *Defining Technology and Innovation Markets: The DOJ's Antitrust Guidelines for the Licensing of Intellectual Property*, 24 HOFSTRA. L. REV., 475, 475–514 (1995); Richard Gilbert, Carl Shapiro, Louis Kaplow, Robert Gertner, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties*, 28 BROOKING PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 283–349 (1997).

5 Willard K. Tom, Joshua Newberg, *Antitrust and Intellectual Property: From Separate Spheres to Unified Field*, 66 ANTITRUST L. J. 167 (1998) ("For most of the period from then until the mid-1970s, there was a perceived tension

of such a relationship, arguing that antitrust and IPRs harmoniously pursue the same objectives of competition and innovation and report tensions between the two areas of law.[6] However, the tension is authentic: reports of a harmonious relationship between antitrust and IPRs are greatly exaggerated.[7] If innovation is taken seriously, the robust protection of constitutionally protected intellectual property rights should precede antitrust concerns.

In many ways, the opposition between IPRs and antitrust predates the passage of the 1980 Sherman Antitrust Law. For instance, in 1809, Stearns and Barrett owned patents on silk textile machines. The two parties settled their patent disputes by partitioning the geographic market: Barrett obtained the exclusive right to sell his machines in Massachusetts and Rhode Island, whereas Stearns obtained rights for the rest of the United States. The Massachusetts Supreme Court held that this agreement was reasonable and enforceable.[8] However, today's antitrust standard views such a collusive agreement as unenforceable. It may even constitute a criminal felony. Rather than incentivizing the amicable resolution of patent disputes, antitrust treats all agreements between competitors as collusions and cartels at the expense of the diffusion of innovation.

Moreover, the views of each respective area of law further complicate the antitrust-IPR paradox. Indeed, experts view IPRSs in general and patent laws as "broken," "useless," and "inefficient."[9] However, experts also believe that antitrust failed by either "lax enforcement" (failing to break up

between the two bodies of law."); Sheila F. Anthony, *Antitrust and Intellectual Property Law: From Adversaries to Partners*, 28(1) AIPLA Q.J. 1 (2000); Daniel J. Gifford, *The Antitrust/Intellectual Property Interface: An Emerging Solution to an Intractable Problem*, 31(2) HOFSTRA LAW REVIEW 363 (2002) (noting that "the relationship of the antitrust laws to patents, copyright and other intellectual property laws has perplexed antitrust scholars and practitioners since the beginning of the twentieth century."); Herbert Hovenkamp, *The Intellectual Property-Antitrust Interface*, 3 ISSUES ON COMPETITION LAW AND POLICY 1979 (ABA Section of Antitrust Law 2008) ("the relation between intellectual property (IP) and antitrust policy has always been unstable and problematic."); Dennis W. Carlton, Robert H. Gertner, *Intellectual Property, Antitrust, and Strategic Behavior*, 3 INNOVATION POLICY AND THE ECONOMY 29 (2003).

6 *See*, for instance, *Antitrust Guidelines for the Licensing of Intellectual Property*, U.S. DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION (January 12, 2017), https://www.justice.gov/atr/IPguidelines/download ("the intellectual property laws and the antitrust laws share the common purpose of promoting innovation and enhancing consumer welfare."); *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition*, U.S. DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION (2007) ("modern understanding of these two disciplines is that intellectual property and antitrust laws work in tandem to bring new and better technologies, products, and services to consumers at lower prices.").

7 This opposition rather than tension is obvious when antitrust is seen as a deconcentrationist tool while patent laws (and IPRs more generally) are seen as a concentrationist tool. *See* David M. Hart, *Antitrust and technological innovation in the US: ideas, institutions, decisions, and impacts, 1890-2000*, 30 RESEARCH POLICY 923–36 (2001) ("The patent law, which invests inventors with monopoly rights, is, one might say, the most concentrationist policy of all. It is not surprising that history is littered with clashes between patent holders and antitrust enforcers inclined to deconcentrationist views.").

8 Stearns v. Barrett, 22. F. Cas. 1175 (C.C.D. Mass. 1816) (No 13.337).

9 *See*, for instance, DAN L. BURK, MARK A. LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT (Chicago University Press, 2009); JAMES BESSEN, MICHAEL J MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK (2009); MICHELE BOLDRIN AND DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY (2008); ADAM B. JAFFE, JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT (Princeton University Press, 2007).

companies and deconcentrate the economy effectively) or by "over-enforcement" (ignoring innovation concerns, harming consumers, and deterring entrepreneurial efforts that contribute to the dynamic process of competition).

For some, both areas of law have failed by over-protecting inefficient competitors (antitrust laws) or IPR holders (IP laws).[10] For others, both areas of law failed by under-protecting competition (the claim of lax antitrust enforcement) and under-protecting innovation (the claim of weakened IPRs protection). Proposals to eliminate antitrust laws ironically mimic calls to repeal patent restrictions. As a result, both sectors of the law are in crisis. As we will see later, such a crisis results from a misunderstanding or lack of thought on the idea of the "monopoly."

The notion that "excessive" patent litigation supports the repeal of IPRs is a long-standing criticism held by those advocating the abolition of IPRs. Indeed, "virtually all the sources of market friction that critics seize upon today as pretexts for patent reform ("patent thickets," "patent trolls," "patent holdup," "excessive litigation," and so on) were raised as matters of concern in the nineteenth century"—a period of abundant economic growth in the United States and countries such as Great Britain transplanted the U.S. patent system because of its role model.[11]

It is essential to go beyond claimed violations of broken antitrust laws and IPRs. Both areas of law have failed for distinct and contradictory reasons. Thus, to develop specific policy suggestions, it is necessary to take a step back and analyze this connection from a more conceptual perspective.

Courts provided broad IPR protection while severely restricting the (mis)use of antitrust laws to control patent licensing in the late 19th and early 20th centuries. During this timeframe, Ohio Senator John Sherman proposed and passed the Sherman Antitrust Act of 1890, amid exponential industrial progress and affluence. We now observe the erosion of IPR protection and strong antitrust enforcement. In an ongoing campaign to undercut patent laws and IPRs, officials weaponize antitrust against large-scale businesses and modify patent policy methods. Antitrust attacks on patents can be viewed as a conflict between large and small enterprises.[12] However, this picture is only partial: large

10 Herbert Hovenkamp, *Antitrust and Innovation: Where Are We and Where We Should Be Going*, 3 ANTITRUST L. J. 749 (2011)

> Antitrust policy often has reflected exaggerated fears of competitive harm and responded by developing overly protective rules that shielded inefficient businesses from competition at the expense of consumers. By the same token, intellectual property laws often undermined rather than promoted innovation by granting intellectual property holders rights far beyond what is necessary to create appropriate incentives to innovate.

11 *See* STEPHEN H. HERBER, NAOMI R. LAMOUREUX, THE BATTLE OVER PATENTS. HISTORY AND POLITICS OF INNOVATION vii (Oxford University Press, 2021) (considering that "the reason why those complaints resurface again and again is because the firms in any production chain are engaged in a battle over the produce surplus generated by their combined efforts to meet a consumer demand.").

12 JONATHAN M. BARNETT, INNOVATORS, FIRMS, AND MARKETS. THE ORGANIZATIONAL LOGIC OF INTELLECTUAL PROPERTY 177 (Oxford University Press, 2020) who concludes that:

> "under a weak-IP regime, innovator firms are compelled to adopt an integrated business model in order to extract a positive return on their R&D investment. By contrast, under a strong-IP regime, innovators may

companies have many patents and fight against patent infringements.[13] In this regard, the opposition between large and small businesses may be overstated.[14] We offer an alternative explanation: the new damaging relationship between aggressive antitrust enforcement and patent weakening exposes a disdain for what lies at the core of capitalism, namely, for the process of innovation.

On the one hand, this renewed assault is an assault on both human and financial capital; that is, IPRs reward human capital and large businesses result from the accumulation of financial capital. New regulatory populism seeks to redistribute (human and financial) capital, irrespective of innovation costs and deterrence.

On the other hand, aggressive antitrust enforcement and the weakening of patent laws (and generally of IPRs protection) correspond to the dual attack on what we call "the instruments of innovation." These instruments are i) the scale – corporate scale turns theoretical inventions into commercialized innovations through distributional capabilities, and ii) the lever – (intellectual) property rights constitute an institutional lever enabling inventors and companies to leverage their inventiveness through investments and risk-taking endeavors. Today's simultaneous assault on corporate bigness and intellectual property rights is no surprise. It is a philosophical battle against the instruments of innovation in the name of the redistributive idea of competition at the expense of innovation dynamics.

In this article, I reconceptualize the relationship between antitrust and IPRs' protection about innovation and builds on this reconceptualization to suggest a new approach. As a preliminary remark, it is apparent that neither antitrust laws nor IPRs have failed if one takes innovation seriously: antitrust enforcement has not been "lax" to deter innovation, and IPR protection has not been overly "broad" as it hinders innovation. Instead, innovation is seldom the goal of either area of law when it should be their sole objective.

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choose to adopt any preferred level of structural integration when selection from the full range of technologically feasible business models."

See also Jonathan M. Barnett, *The Great Patent Grab*, *in* THE BATTLE OVER PATENTS. HISTORY AND POLITICS OF INNOVATION 208, 208–277 (Stephen H. Herber, Naomi R. Lamoureux eds., 2021).

13 *See* Figure 1 on how large businesses represent the companies filing the most for patents. Also, large companies engage in numerous patent lawsuits against small companies allegedly infringing their patents and other IPRs. *See* Ivan Mehta, *Google is suing Sonos over patent infringement once again*, TECHCRUNCH (August 8, 2022), https://techcrunch.com/2022/08/08/google-is-suing-sonos-over-patent-infringement-once-again/; Nick Wingfield, *Amazon, Barnes & Nobles.com Settle Long-Lasting Technology Patent Suit*, THE WALL STREET JOURNAL (March 7, 2002), https://www.wsj.com/articles/SB1015466420659042800; Ian Sherr, *Microsoft sues manufacturing giant Foxconn over patents*, CNET (March 12, 2019), https://www.cnet.com/tech/mobile/microsoft-sues-manufacturing-giant-foxconn-over-patents/.

14 *See*, for historical treatment of this claim, John C. Stedman, *The U.S. Patent System and Its Current Problems*, 42 TEXAS L. REV. 450, 496 (1954) (arguing that while "[t]here are frequent assertions that small business needs the patent system and gets more protection from it than big business, and defenders of the patent system rarely have difficulty rounding up 'small businesses' witnesses to testify whenever the patent sys is under attack," these assertions may merely be "anecdotal rather than general, or based upon emotion rather than fact.").

Prioritizing competition over innovation, contemporary punditry and radical enforcers have recently revived calls and actions to undermine IPRs in the name of the dystopian idea of perfect competition.[15] Such directions are unwise, and agencies should strive to perceive the preservation of innovation incentives as a prerequisite for effective competition.[16]

Judge Rich once acknowledged that the patent-as-monopoly could suffer from the word monopoly's negative "emotional" connotation.[17] He regretted that "patent monopoly," although accurate, is an expression that conveys unfortunate disdain. Instead, it is necessary to advocate for patent-as-intellectual monopoly. For, "the question of whether a patent privilege is a monopoly is not a mere question of words."[18] Patent-as-intellectual monopolies provide a better conceptualization. Once the word "monopoly" is redefined, it will provide a solid basis for the implications of a renewed approach to the antitrust-IPR interface.[19] Indeed, the IPR-as-intellectual monopoly will provide a sound basis for antitrust and consequences for policy.

The incentives to innovation (i.e., the adequate protection of IPRs) must prevail: Rather than harmony, we argue that antitrust laws must "yield" whenever IPRs arise against antitrust concerns. Antitrust is "much too crude an instrument," idealizing "atomistic competition" irrespective of innovation considerations.[20]

I first articulate that, against the current trend to weaken IPRs, the case for "intellectual monopoly" is stronger than ever, and patent laws have never been as relevant as they are today. It then conceptualizes the respective functions of antitrust and IPRs in fostering innovation. Both antitrust and IPRs should nurture and preserve the instruments of innovation (i.e., lever and scale). Finally, because IPRs considerations should prevail over antitrust concerns, we advocate for a "New Schumpeterian Approach" to the interaction between antitrust and IPRs, especially as they apply to standard essential patents (SEPs). Specifically, the preeminence of innovation over competition concerns improves the legal treatment of SEPs.

15 Aurelien Portuese, *Principles of Dynamic Antitrust: Competing Through Innovation*, INFORMATION TECHNOLOGY & INNOVATION FOUNDATION (ITIF) (June 14, 2021), https://itif.org/publications/2021/06/14/principles-dynamic-antitrust-competing-through-innovation/.
16 *See* Daniel F. Spulber, *Antitrust and Innovation Competition*, 11 JOURNAL OF ANTITRUST ENFORCEMENT 5, 5–50 (2022) (arguing that antitrust should better recognize incentives for invention, innovation, and technology adoption.).
17 Giles S. Rich, *Are Letters Patent Grants of Monopoly?*, 15 W. NEW ENG. L. REV. 239–255 (1993) (noting that "'patent monopoly' presents one of those ideas that has become encysted in a phrase and has, consequently, ceased to provoke analysis.")
18 William C. Robinson, *The Law of Patent for Useful Inventions,* (Boston: Little Brown & Co. 1890).
19 Indeed, this question of whether patents are monopolies "is especially pertinent when considering the relationship between the anti-monopoly laws, which are designed to protect the rights reserved to the public, and patent rights granted to inventors." See Giles S. Rich, "Are Letters Patent Grants of Monopoly? 15 *Western New England Law Review*, 239, 239–255 (1993).
20 Kenneth. E. Boulding, *In Defense of Monopoly*, 59 QUARTERLY JOURNAL OF ECONOMICS 524, 524–42 (1945) (making the Schumpeterian case for monopolies and noting that "the older anti-trust policy would seem like an attempt to solve the problem of domestic quarrels by prohibiting marriage")

II. The Case For Intellectual Monopoly

The case of IPRs and patents particularly rests on three arguments. First, IPRs should be strongly protected *because* (not despite) they grant an intellectual monopoly to the inventor, which is the ability to appropriate entrepreneurial rents through veto power as a tangible property that justifies the protection of IPRs as a source of innovation incentives. Second, the constitutional (and natural) right to intellectual property justifies intellectual monopolies. Third, economic evidence demonstrates that the stronger the protection of IPRs, the greater the innovation and economic growth. This section offers a reconceptualization of IPRs. Reconceptualizing intellectual property-as-intellectual monopoly helps grasp the essential need of the monopolistic attribute of property rights–namely, the owner's veto power and right to exclude under a property rule.

II.1. Intellectual Property As Intellectual Monopoly

The case of intellectual property (because it creates an intellectual monopoly) has gained momentum because of today's innovative, a knowledge-driven economy.[21] Intellectual property, particularly *because* it creates an intellectual monopoly, is stronger than ever.

First, one must state the obvious that intellectual property is still property.[22] Because property is a monopoly of the owner over its creation, intellectual property is an intellectual monopoly. Correspondingly, the property rule should dominate IPRs protection–namely, IPRs owners have to keep enjoying their veto power against trespassers. Using a syllogism, we argue that property is a monopoly power over one's creation. We argue that monopoly power is veto power over the use of proprietary assets, and finally, we conceptualize intellectual property-as-intellectual monopoly.

I.1.1. Property As Monopoly

If property is a monopoly over tangible goods, intellectual property is a monopoly over intangible goods. Such monopoly power should not have the negative connotation that antitrust ascribes to some companies. Frederic Bastiat criticized "the theorist [who] first characterized property so understood as a necessary monopoly, then merely as a monopoly, then as injustice, and finally as theft."[23] Property as theft is an absurd idea[24], but property as a necessary monopoly is an accurate market reality.

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21 *See*, for instance, MICHELE BOLDRIN AND DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY (2008); ADAM B. JAFFE, JOSH LERNER, INNOVATION, AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT (2007). For an account of this assault on property, *see* AARON PERZANOWSKI AND JASON SCHULTZ, THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY (2016).

22 Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108 (1990) ("patents give a right to exclude, just as the law of trespass does with real property.").

23 FREDERIC BASTIAT, ECONOMIC HARMONIES (Ed. George B. de Huszar, 1996) (1850).

24 BASTIAT at 29.

> Taken literally, the famous formula, property is theft, is therefore absurdity raised to the nth degree. It would be no less outlandish to say that theft is property; that what is legal is illegal; that what is, is not, etc. It is probable that the author of this bizarre aphorism merely desired to catch people's attention with a striking paradox . . . .

However, it has both historical backing and contemporary revival, particularly about intellectual property.[25]

Private property in land, as Malthus argued, "bears a monopoly price."[26] Indeed, the property owner derives monopolistic rents from the productive function of the land or tangible goods. Property owners can freely set the price of property use, be it tangible property for leases or intangible property through licensing. These monopolistic rents led socialists and anarchists to call for the abolition of property were seen as theft or plunder.[27]

But one can hardly deny that property is a monopoly; property rights are monopoly power over tangible goods. William Blackstone defined the right of property as "the sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe."[28] This definition reveals that the right to exclude others constitutes prime entitlement derived from the bundle of property rights. This also shows that "the external things of the world" can encompass tangible and intangible goods. However, property rights are a bundle of rights, and the owner's right to exclude them remains perhaps the most telling and distinctive of these rights. Moreover, Merrill describes the right to exclude as a "gatekeeper" right– namely, "the right to determine who can or cannot enter or touch a particular thing."[29] Ironically, this "gatekeeper" alludes to the label designating large companies. Thus, it is essential to use ownership rights for proprietary assets.

The fact that IPRs depend on the state granting them to individuals does not make them less legitimate, just like a land registry, and courts are necessary to secure the grant of property rights, be they intellectual or real, to owners.[30] Property, intellectual or not, remains dependent on the positive actions (i.e., grant and preservation) of the state. To be sure, IPRs can be subject to rent-seeking activities, similar to how a land registry officer can be subjected to inducements. But both IPRs and real property provide legitimate monopolistic power over valuable goods a result of a process that should be as legitimate as possible. Thus, transparency requirements can better preserve the legitimacy of property rights.

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25 For historical backing, *see* PIERRE-JOSEPH PROUDHON, WHAT IS PROPERTY? (Donald R. Kelley & Bonnies G. Smith Eds., 1994) (1840); KARL MARX AND FREDERICK ENGELS, THE COMMUNIST MANIFESTO: A MODERN EDITION (Verso 1998) (1848); Jean-Jacques Rousseau, *Discourse on the Origin and the Foundations of Inequality among Men* (1755), *in* THE DISCOURSES AND OTHER EARLY POLITICAL WRITINGS 161 (Victor Gourevitch Ed., 1997) (1755).

26 THOMAS ROBERT MALTHUS, AN ESSAY ON THE PRINCIPLE OF POPULATION (J Johnson Library of Economics and Liberty, 1798).

27 See references footnotes 25.

28 2 William Blackstone, *Commentaries on the Laws of England in Four Books* *2 (1753).

29 Thomas W. Merrill, *Property and the Right to Exclude II*, 3 BRIGHAM-KANNER PROP. RTS. CONF. J. 1 (2014). *See also* Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEBRASKA L. REV. 730 (1998).

30 For an eloquent and contemporary defense of minarchism, see Richard Epstein's scholarly contributions, including Richard A. Epstein, Liberty Versus Property?: Cracks in the Foundations of Property Law, 42 SAN DIEGO L. REV. 1, 15-19 (2005); Richard Epstein, The Disintegration Of Intellectual Property? A Classical Liberal Response to a Premature Obituary, 62(2) Stanford Law Review, 456-524 (2010) ; Richard Epstein, Why Libertarians Shouldn't Be (Too) Skeptical About Intellectual Property, Progress & Freedom Foundation, Paper 13.4, (2006);

I.1.2. Monopoly As Veto Power

"Monopoly" here means not so much its modern acceptation of "monopolizing" a particular "relevant" market but rather refers to the traditional meaning of monopoly as exclusive control over a specific commodity or idea.[31] Monopoly is an exclusive possession. Thus, patent and copyright holders have a legitimate and effective way to exclude trespassers and free riders, similar to physical property owners having such a right over trespassers.

Hence, because property is a monopoly (understood as the exclusive power to exclude), intellectual property is an intellectual monopoly over a specific idea or work of art. Intellectual monopoly is the rightful and legitimate entitlement of the inventor or author to be the sole user, unless otherwise licensed. Indeed, because "all property owners have a monopoly in their property," patent and copyright holders have (legitimate) intellectual monopolies.[32]

Justice Story once wrote that the patent is "the privilege of an exclusive right."[33] In that regard, no substantial distinction, other than time limits for intellectual property rights (and more rarely for real property rights), can be made between physical property and intellectual property in the veto (monopoly) power of those rights provided to the owners. Ignoring the right to exclude under the property rule for intellectual property would be unfair and misguided as missing the perpetual right to exclude physical property. Therefore, the case against IPRs equates to the case against physical property and its attributes: the power to exclude, the power to be free from trespass, and the power

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31 The etymology of the word "monopoly" sheds lights on this distinction between the traditional (literal) meaning of monopoly and its modern form. "Monopoly" comes from the Greek work monopolion, a combination of monos (single, alone) and polein (to sell). Therefore "monopolion" designates someone who has the exclusive right to sell and trade on a specific commodity—*i.e.*, an owner possessing a commodity or an idea. Conversely, the legal and modern definition of the word "monopoly" refers to the ability for an individual to purchase (or be granted) the entirety of the commodities in a specific market. The word "monopoly" became synonymous with the misdemeanor of "engrossing"—namely, the exclusive possession of a commodity or goods in a market. *See* Edward A. Adler, *Monopolizing at Common Law and under Section Two of the Sherman Act*, 31 HARV. L. REV. 246, 246–70 (1917) (quoting Congressional record before the passing of the Sherman Act with Mr. Hoard saying ". . . the word 'monopoly' is merely technical term which has a clear and legal signification, and it is this: It is the sole engrossing to a man's self by means which prevent other men from engaging in fair competition with him."). In a discussion in the House, Mr. Culberson said, according to Section 2 of the Sherman Act, that "this is a very important and far-reaching provision. I will read to the House what appears to be Webster's definition of a monopoly: 'to engross, to obtain by any means exclusive right of trade to any place or within any country or district, as to monopolize the trade.'" *See id*. at 249. This modern definition of monopoly-as-engrossing comes from the confusion or "mental process" which equated "monopoly" (as patent rights or property rights) to "engrossing." *See* Standard Oil Co. of New Jersey v. United States, 221 U.S. 1 (1910).

32 Giles S. Rich, *Are Letters Patent Grants of Monopoly?*, 15 W. NEW ENG. L. REV. 239, 239–55, 251 (1993)

> That power is the right to exclude others from making, using, or selling the thing patented. That right potentially makes the patentee the sole seller, and that, Aristotle taught us, makes him or her a monopolist. Calling it a "property right" does not change the fact. All property owners have a monopoly in their property.

33 Pennock v. Dialogue, 27 U.S. (2 Pet.) 1, 19 (1829) (Story, J.).

to derive profits from the property.[34] Property rights give owners veto power over transfers; it is a monopoly over possession.[35]

I.1.3. Intellectual Property As Intellectual Monopoly

Intellectual property is an intellectual monopoly, not a market monopoly, in which monopolists are said to enjoy market power. Intellectual property owners enjoy property rights over specific, well-defined ideas or creative work. As a property owner, the intellectual monopoly enables veto power over its assets–thus, the ability to exclude and be free from trespass. Intellectual property rights owners have monopolistic power in the Blackstonian sense: they enjoy a "sole and despotic dominion "over assets. This dominion reverts to the origin of the word "monopoly" ("monopolion"), where complete and exclusive control over owned assets is definitional to the notion of property rights.

Consequently, patents and IPRs are (intellectual) monopolies. It is understood that "the patent privilege is a true monopoly, granted in derogation of the common right."[36] For, the right to exclude is inherent in inventors' ability to appropriate profits from their inventions. In other words, the appropriability of entrepreneurial and creative rents eliminates the absence of a right to exclude. The incentives to create, invent, and innovate disappear. Indeed, in a prosperous society, as Joseph Schumpeter would put it, profit constitutes not only entrepreneurial motives but, most importantly, the enabler that drives the process of creative destruction.[37]

The protection of (intellectual) property rights presupposes allocative losses (in terms of the reduced competition) in favor of dynamic gains (in terms of innovation incentives). Easterbrook wrote, "the trade-off is not monopoly versus the competition or protection in exchange for disclosure. It represents dynamic gains in exchange for allocative losses."[38] Any critique of IPRs based on the possibility of allocative efficiency improvements ignores the dynamic gains from maximizing innovation incentives.[39] Advocating to abolish (or weaken) patents on allocative efficiency (competition) would be similar to supporting the gains that burglars or trespassers can generate

34 Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEBRASKA L. REV. 730 (1998); Guido Calabresi, Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972); Henry E. Smith, *Exclusion Versus Governance: Two Strategies for Delineating Property Rights*, 31 JOURNAL OF LEGAL STUDIES 453 (2002).

35 Guido Calabresi, Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). *See also* Thomas W. Merrill, Henry E. Smith, *The Morality of Property*, 48 WM. & MARY L. REV. 1849, 1862 (summing up that "property rule gives the current holder of the entitlement a veto over transfers; the property rule is designed to be robust enough to force potential takers into respecting the entitlement or acquiring it consensually.").

36 WILLIAM C. ROBINSON, THE LAW OF PATENT FOR USEFUL INVENTIONS 67 (Little Brown & Co. 1890).

37 Schumpeter insisted that entrepreneurial gains were not the sole drivers of the entrepreneurs. Rather, the desire of the individual to build its own "kingdom" and its willingness to prove one's self are considerable drivers.

38 Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108 (1990) (noting that "the lure of extra return induces extra invention. . . . After the creation, though, compensating the inventor reduces the use that can be made of the idea.").

39 *See*, for instance, Sony Corp. of Ma. V. Universal City Studios, Inc. 464 U.S. 417 (1984), where the court acknowledged the tradeoff between allocative losses and dynamic gains from incentivizing creation.

because of their expected use of the property.[40] This would disregard the deterrence effect on property investments, increased insurance costs, and the incentive to own anything in the first place. The dynamic gains of IPRs outweigh any static losses owing to reduced competition over allocating scarce resources. To lament against IPRs as monopolistic barriers to entry is tantamount to lament against land property rights on the basis that citizens cannot freely access every parcel of the country because homeowners create walled gardens: barriers to entry are not unfair; instead, they are fundamental to property rights that themselves underpin the dynamics of capitalist society.

The case of patents and IPRs more generally pares down to the dystopian view of perfect competition and the disdain for the prerequisites for innovation, namely, the need for appropriate rents through contractual restraints generating allocative losses for dynamic gains. For instance, Justice Breyer once dismissed the case for copyright, rejecting the idea that "the author of a book is its complete master, and as such can dispose of it as he chooses."[41] Copyrights (and other IPRs protection) should disappear based on the flawed idea of perfect competition.[42] Notable experts endorse this contestable view.[43]

Protecting IPRs such as copyrights necessitates an intellectual monopoly over a limited period but should not lead to excessive protection. In that regard, it is possible to justify some limitations in time for intellectual monopoly over one's creation. When the original copyright act was passed in 1790, the copyright term in the United States was 28 years (14 years for the original copyright, with a 14-year renewal). The maximum term went to 42 years in 1831, 56 years in 1909, 70 years in 1974, to life plus 70 years in 1976, and to life plus 90 years in 1998.[44]

This excessive protection in time hardly finds justifications when one takes the perspective suggested here of intellectual monopoly by the owner over his creation: a less than lifetime protection suffices. In that regard, Lessig is right when he raises concerns about what he calls the "tragedy of the innovation commons" derived from the "tragedy of the *anti*commons."[45] Excessive IPRs protection can lead to inefficient underutilization of innovative products because of the prohibitively high transaction costs associated with privatized innovations and creations.

40 Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108 (1990) ("intellectual property is no less the fruit of one's labor than is physical property.").
41 Stephen Breyer, *The Unseasy Case for Copyright: A Study of Copyright of Books, Photographs, and Computer Programs*, 84 HARV. L. REV. 281, 284–285 (1970).
42 *Id.* at 313 ("removing copyright protection should induce competition in the production and sale of relatively high-volume titles.").
43 *See*, for instance, LAWRENCE LESSING, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 58 (2001).
44 Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000*, 88 CA. L. REV. 2187–240 (2000).
45 *Id*. at 190. On the tragedy of the anticommons, see Michael A. Heller, *The Tragedy of the Anticommons: Property in Transition*, 111 HARV. L. REV. 621, 621–99 (1998).

Therefore, when Giles Rich writes, "How is it possible for the patent right, which, being fixed by statutes, in one and the same thing in all places and at all times, to be both a monopoly and not a monopoly?"[46], the answer is that patents (generally IPRs) are monopolies, but only if we refine our definition of monopoly not as the ability to siphon off the market but as the owner's ability to exercise veto power over its creation. It is a monopoly in the property right sense of the word but not in the antitrust (market) sense of the word. In that respect, U.S. law rightly recognizes that "patents shall have the attributes of personal property."[47] This property is a monopoly– intellectual property. Therefore, IPRs grant the necessary intellectual monopolies to creators and inventors. The creator's intellectual monopoly rights over creation remain strong. However, reforms ceaselessly attempt to weaken such rights by ignoring that a property rule (not a liability rule) applies to IPRs.

II.2. Intellectual Monopoly As Constitutional (and Natural) Rights

The Framers of the Constitution operated in the context of natural law philosophy. And it is in this context that, as Adam Mossoff notes, "patents indeed were privileges-civil rights securing property rights. Of course, many early American courts and public officials favored the perception of patents as a special, utility-enhancing monopoly."[48] Such groups perceive patents (and, more broadly, IPRs) as monopolistic entitlements similar to entitlement property owners can expect through the adequate protection of property rights. Patent rights have evolved out of natural rights philosophy: The inventor's right to its creation is nothing but a part of legitimate property rights.[49]

The Framers wanted to codify natural rights over physical and intangible property in the Constitution. Thus, the Framers inserted a clause into the Constitution that provided the highest legal authority to protect such intellectual monopolies. Article 1 Section 8 of the U.S constitution gives Congress 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." The "exclusive right" clearly refers to property rights since it is ownership that enables the owner to exclude others from using "writings and discoveries" without the consent of their owners. Such property rights allow owners to exclude and fix a monopoly price for third parties' use of these proprietary assets.

The United States was the first country to constitutionalize IPR protection. The Framers placed intellectual property rights as one of the highest rights protected by the constitution. They did so because IPRs are derived from property rights protection. James Madison, the Constitution's father, understood property as an intellectual property right. He defined property "in its larger and juster

46 Giles. S. Rich, *Are Letters Patent Grants of Monopoly?*, 15 W. NEW ENG. L. REV. 239, 240–41 (1993), rightly considering that monopoly is "an emotional word."
47 35 U.S.C. 261.
48 Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating The Patent "Privilege" In Historical Context*, 92 CORNELL LAW REVIEW 953, 953–1012 (2007).
49 *See* Adam Mossoff, *Rethinking the Development of Patents. An Intellectual History, 1550-1800*, 52 HASTINGS L. J. 1255, 1255–322 (2001) (demonstrating that those natural rights ideals influenced the development of modern patent doctrine).

meaning" as "embrac[ing] everything to which a man may attach a value and have a right; and which leaves to everyone else the like advantage."[50] Madison considered that "a man has property in his opinions and the free communication of them," and his "conscience is the most sacred of all property…being a natural and unalienable right."[51] Madison emphasized that the Constitution protects both copyright and patents for the benefit of inventions.[52] Accordingly, George Washington called upon the First Congress to pass legislation securing IPRs, namely, the Copyright Act of 1790 and the Patent Act of 1790. The constitutional basis of the IPRs is clear. In contrast, antitrust Laws do not reflect constitutional rights because they were adopted a century later, in 1890.

One telling example can easily demonstrate this exceptional and unique protection of IPRs in the Constitution: However, vital freedom of speech is under the U.S. Constitution, and IPRs protection trumps the freedom of speech. Indeed, "the Framers intended the copyright itself to be the engine of free expression. By establishing a marketable right to the use of one's expression, copyright supplies the economic incentive to create and disseminate ideas."[53] As the Supreme Court made clear, the Framers "recognized that some restriction on expression is the inherent and intended effect of every grant of copyright."[54] Therefore, freedom of speech stops whenever copyrights hold.

In this regard, "copyright's limited monopolies are compatible with free speech principles."[55] For instance, there is no freedom to plagiarize protected creative works, since there is no freedom to freeride in copying and selling art pieces without the artist's consent. The Framers understood that free speech and free expression at the expense of copyright protection were tantamount to freeriding. Thus, they discouraged opportunistic behaviors that undermine property rights and prevent the progress of science, arts, and ultimately the emergence of innovations. Intellectual property rights stand out as one of the most heavily protected rights of the constitution. The paradox is that IPRs remain one of the most criticized constitutional rights with regular intellectual assaults on their existence. The last salvo is most directed to standard essential patents and how concerned patent-holders can exercise their legitimate rights.

Consequently, the case for intellectual monopoly through IPRs protection (i.e., copyright, trademark, trade secrets, patents) also springs from the Constitution. The Supreme Court explicitly referred to

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50 Cited in RANDOLPH J. MAY, SETH L. COOPER, THE CONSTITUTIONAL FOUNDATIONS OF INTELLECTUAL PROPERTY. A NATURAL RIGHTS PERSPECTIVE 26 (2015).
51 *Id*.
52 Madison would indeed write

> Monopolies tho' in certain cases useful ought to be granted with caution and guarded with strictness agst abuse. The Constitution of the U.S. has limited them to two cases, the authors of Books, and of useful inventions, in both which they are considered as a compensation for a benefit actually gained to the community as a purchase of property which the own might otherwise withhold from public use. There can be no just objective to a temporary monopoly in these cases . . .

James Madison, *Detached Memoranda* (circa 31 January 1820), *in* RANDOLPH J. MAY & SETH L. COOPER, THE CONSTITUTIONAL FOUNDATIONS OF INTELLECTUAL PROPERTY. A NATURAL RIGHTS PERSPECTIVE 60 (2015).
53 Harper & Row Publishers, Inc., v. Nation Enterprises, 471 U.S. 539, 558 (1985).
54 Golan v. Holder, 565 U.S. 302 (2012).
55 Eldred v. Ashcroft, 537 U.S. 186, 219 (2003)

the need to protect patents because these "monopolies of invention" served the "benefit of society"– in other words, patent allocative losses are much smaller than their dynamic gains. This is subject to the novelty and "nonobviousness" of the ideas to be protected.[56] As Gilbert Montague once wrote:

> This constitutional guarantee to the patentee flatly contradicts the Sherman Act. There is no reconciling the two. They are mutually inconsistent. One must yield to the other. They are mutually inconsistent. One must yield to the other. There can be no question of precedence between the constitutional guaranty, on the one hand, and the Act of Congress of July 2, 1890, known as the Sherman Act. It cannot be assumed that the Sherman Act intended to interfere with rights established by the Constitution and granted by the patent law. The constitutional guarantee must prevail.[57]

Often, opponents of intellectual monopolies and their associated IPRs invoke Thomas Jefferson to substantiate their flawed arguments.[58] The "Jeffersonian" argument against IPRs is misguided for multiple reasons. Considering that "every discovery which multiplies the subsistence of men must be a matter of joy to every friend of humanity," Jefferson praised inventions through IPRs to incentivize innovations.[59] This is because of several reasons. First, a prolific writer, Thomas Jefferson, was keen on enforcing copyright to protect his authorship rights. Second, Thomas Jefferson objected to the patentability of ideas in the public domain but never the patentability of new inventions.[60] As an inventor and technophile, Jefferson understood that patents provide innovation incentives to foster progress in the arts and science. Third, Thomas Jefferson could not oppose patents and other IPRs when he accepted becoming the first patent examiner in the history of the Republic. In his position at the Board of Arts created by the U.S. Patent Act of 1790, Jefferson delivered the first 67 patents, thus demonstrating his eagerness to protect the intellectual monopoly of inventors.[61] Finally, Jefferson endorsed the Constitution, which explicitly provided the basis for the legal protection of IPRs.

Thus, Jefferson is a notable advocate of intellectual monopolies through IPRs. Jefferson's perspective "on the significance of intellectual property was far more complete than that of virtually any other major American figure."[62] As a scientist, he grasped the "critical value of access to information." As

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56 35 U.S.C. § 103(a) (2006).

57 Gilbert Montague, *The Sherman Anti-Trust Act and the Patent Law*, 21(6) YALE L. J., 433, 468–69 (1912) ("The owner of a patent may do all the acts comprehended in the three propositions of law above set forth; and even though such acts be monopolizing, and such as, without the immunity of a patent, would clearly constitute a violation of the Sherman Act, the Constitution and the patent laws shall be his protection.")

58 *See*, more generally, JEFFREY H. MATSUURA, JEFFERSON V. THE PATENT TROLLS. A POPULIST VISION OF INTELLECTUAL PROPERTY RIGHTS (2018). *See* Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating The Patent "Privilege" In Historical Context*, 92(5) CORNELL L. REV. 953, 953–1012 (2007) (challenging the "Jeffersonian story of patent law").

59 JEFFREY H. MATSUURA, JEFFERSON V. THE PATENT TROLLS. A POPULIST VISION OF INTELLECTUAL PROPERTY RIGHTS 65 (2018).

60 Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108 (1990) (discussing how Thomas Jefferson "opposed the grant of patents for ideas already in the public domain but did not suppose that disclosure sand protection are an invariable quid pro quo").

61 JEFFREY H. MATSUURA, JEFFERSON V. THE PATENT TROLLS. A POPULIST VISION OF INTELLECTUAL PROPERTY RIGHTS 93 (2018).

62 *Id*.

an inventor, he acknowledged "the importance of refinements and enhancements to products and processes. As a pioneer patent officer, Jefferson "created the patent review process, at least from an operational perspective."[63] In these ways, Jefferson defended IPRs and personified both an author and inventor.

II.3. The Economic Evidence for Intellectual Monopoly

Historically, creating intellectual monopolies through strong IPRs protection has led to higher economic growth. In contrast, the weak or lack of protection of IPRs inevitably generates a "tragedy of the *un*commons."

II.3.1. Intellectual Monopoly Generates Economic Growth

Not only are IPRs legitimate in providing an intellectual monopoly over intellectual property, but they are also legitimate in deriving from (natural and) constitutional rights. Most importantly, the case for IPRs spawned from economic evidence accumulated over centuries. IPRs promote innovation and, thus, generate growth and prosperity. Strong intellectual protection fosters economic dynamism by incentivizing creation, invention, and innovation.

Economic data is unequivocal. Quantitatively, the greater the expenditure on research & development (R&D), the greater the growth in per capita gross domestic product (GDP).[64] Additionally, the greater the number of patents granted, the more significant the associated GDP increase. Qualitatively, many "good patents" (measured by global patents filed in the United States) positively impact GDP growth.[65] Of course, the number of patents does not equate to the level of innovation because not all inventions are patentable and not all innovations are patented.[66]

Patents need to have a long duration to incentivize innovation through R&D expenditure. However, such patents must also be narrow to avoid deterring competing investments.[67] Interestingly, Acemoglu and Ufuk demonstrated that IPRs should apply to technologically more advanced or less advanced firms without distinction. They challenged the "naïve intuition" that:

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63 *Id*.

64 Iftekhar Hasan, Christopher L. Tucci, *The innovation-economic growth nexus: Global evidence*, 39 RESEARCH POL'Y 1264, 1273 (2010) ("The first measure, as discussed above, can be considered an innovation input measure, while the second measure may be considered an innovation output or innovation efficiency measure. Thus, we see that innovation input and output are associated with GDP growth virtually across the board.").

65 *Id*. at 1273 ("Quality innovation output leads to even higher growth than average innovation output.").

66 Zvi Griliches, *Patent statistics as economic indicators: a survey*, 28(4) JOURNAL OF ECONOMIC LITERATURE 1661, 1661–1707 (1990). *See also* Cassandra Sweet, Dalibor Eterovic, *Do Patent Rights Matter? 40 years of innovation, complexity, and productivity*, 115 WORLD DEVELOPMENT 78, 78–93 (2019) ("Patents are likely not a good proxy of a country's technological progress as they only cover i) frontier technology and/or ii) patentable innovations.").

67 Daron Acemoglu, Ufuk Akcigit, *Intellectual Property Right Policy, Competition and Innovation*, 10(1) JOURNAL OF EUROPEAN ECONOMIC ASSOCIATION 1, 1–42 (2012); Paul Klemperer, *How Broad Should the Scope of Patent Protection Be?*, 21 JOURNAL OF INDUSTRIAL ECONOMICS 113, 113–30 (1990); Richard Gilbert, Carl Shapiro, *Optimal Patent Length and Breadth*, 21 JOURNAL OF INDUSTRIAL ECONOMICS 106, 106–12, (1990).

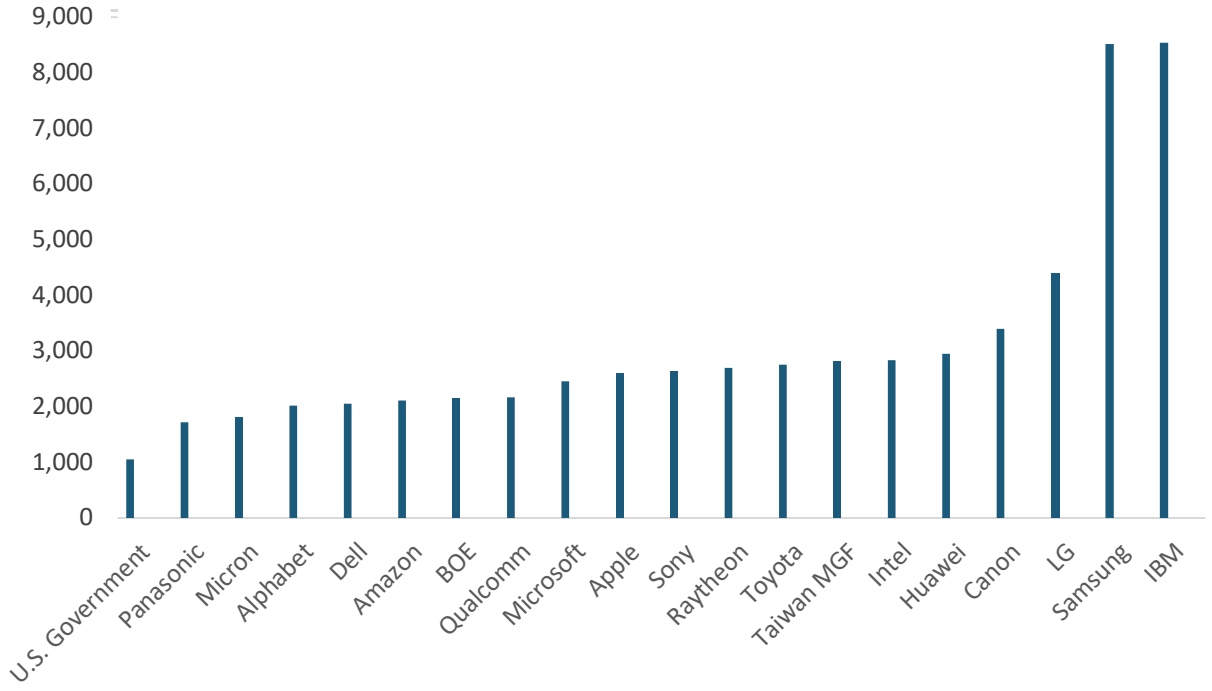
> Providing less protection to technologically more advanced firms is socially beneficial because it would exploit a composition effect (bringing firms that further apart into a neck-and-neck competition to reduce markups and increase R&D which results from tight competition.) This naïve intuition is not correct precisely because of the trickle-down effect [that] implies that providing greater protection to sufficiently advanced technology leaders not only increases their R&D efforts but also raises the R&D efforts of all technology leaders that are less advanced than this level.[68]

This important contribution calls for going beyond the static trade-off between IPR protection and competition (i.e., allocative losses vs. dynamic gains) and advocating for a vigorous defense of IPRs irrespective of firm size and technological advances. Strong (but adequate with time limitations) IPR protection incentivizes innovation, which is the primary driver of economic growth.

The U.S. Chamber of Commerce publishes an annual "International IP Index," which demonstrates how "effective intellectual property (IP) systems encourage innovators and creators to embrace new ideas, take risks, and drive change. On the other hand, IP systems undermine innovation and creativity."[69] This data is consistent with cross-country evidence that "higher quality patenting precedes growth," proving the causal relationship between incentives to innovation through IPRs and economic growth.[70] International IP indices have historically supported the idea that countries with more robust IPR protection are more innovative (and thus more prosperous) than countries with weaker IPRs protection. In 2021, companies that have filed thousands of U.S. patents were the most innovative, as Figure 1 illustrates. Interestingly, the U.S. government recognizes the value of patents and IPRs protection since it filed 1,056 patents in 2021:

68 Daron Acemoglu, Ufuk Akcigit, *Intellectual Property Right Policy, Competition and Innovation*, 10(1) JOURNAL OF EUROPEAN ECONOMIC ASSOCIATION 1, 39 (2012).
69 *2022 International IP Index: Compete for Tomorrow, Tenth Edition*, U.S. CHAMBER OF COMMERCE GLOBAL INNOVATION POLICY CENTER, https://www.theglobalipcenter.com/wp-content/uploads/2022/02/2022-IP-Index-Final-Report.pdf.
70 Iftekhar Hasan, Christopher L. Tucci, *The innovation-economic growth nexus: Global evidence*, 39 RESEARCH POL'Y 1264, 1274 (2010).

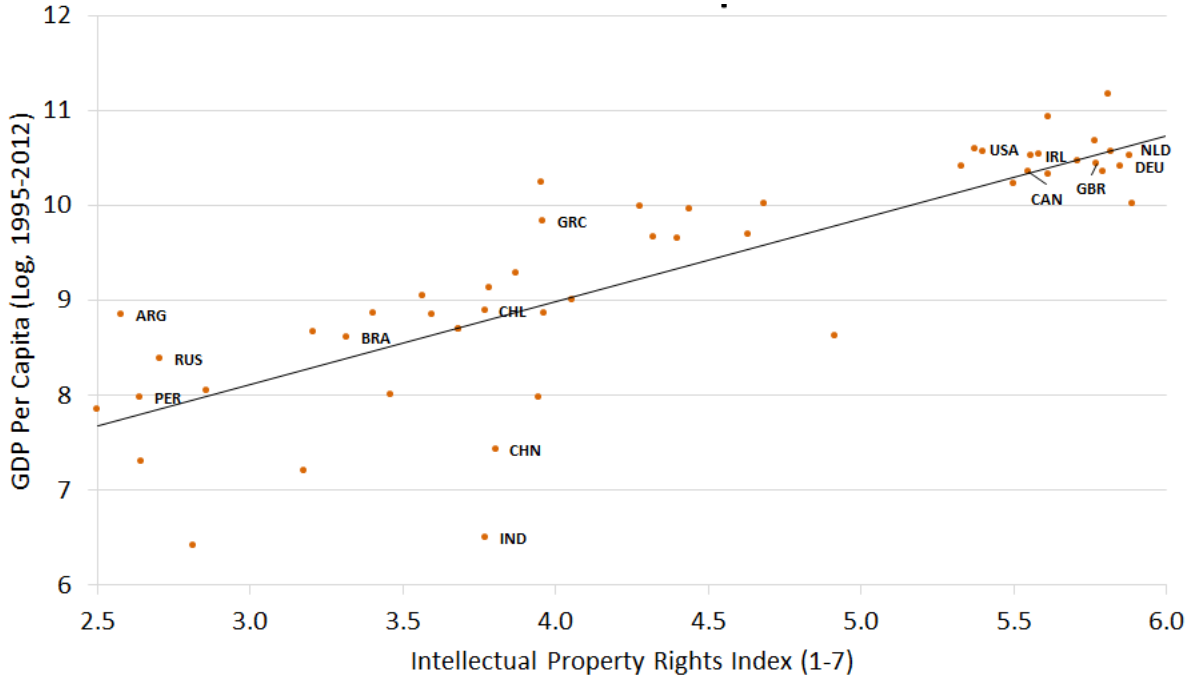
Figure 1: Number of U.S. Patents Filed in 2021[71]



IPR protection historically propelled dynamism in capitalism: Growth comes from intellectual property, which protects and encourages innovation. Nobel laureate Douglas North remarked that the birth of IPR protection (particularly patents) in the 18th century was the inflection point when the dynamics of modern capitalism generated considerable growth, as opposed to previous centuries and millennia.[72] Schumpeterian growth models demonstrate that the solid protection of IPRs induces an earlier take-off for economics to embrace industrial revolutions and periods of economic growth.[73] Therefore, it is not surprising that the stronger the protection of IPRs, the greater the economic growth and development of nations, as Figure 2 illustrates:

71 *2022 Patent 300 List*, HARRITY, https://web.archive.org/web/20220218200501/https://harrityllp.com/patent300/.
72 DOUGLASS C. NORTH, INSTITUTIONS, INSTITUTIONAL CHANGE, AND ECONOMIC PERFORMANCE (1990).
73 Angus C. Chu, Zonglai Kou, Xilin Wang, *Effect of patents on the transition from stagnation to growth*, 33 JOURNAL OF POPULATION ECONOMICS 395, 395–411 (2020).

Figure 2: Correlation Between IPRs Protection and Prosperity[74]



One may legitimately argue that correlation is not causation; IPR protection may very well be economic development's result, not the cause. Although economic growth depends on various institutional factors, IPR protection has historically been the cause rather than economic development (among other sources). Moreover, the "commodification" of useful knowledge helps to spur economic growth. Mokyr reported:

> In the closing decades of the seventeenth century and the first half of the eighteenth, a market for 'commodified' useful knowledge started to emerge and became a hallmark of the Industrial Enlightenment. Professional scientists…made money by lecturing, consulting, and publishing…[T]hese 'entrepreneurs of science'…found that they had a commodity to sell that people with money found attractive…Intellectual property rights in useful knowledge tend on the whole to enhance such markets, because by taking out a patent the inventor place the invention in the public realm and had an incentive to publicize it rather than keep it secret.[75]

In modern economic parlance, IPR protection provided a formidable solution to reap the positive externalities of creativity, inventions, and discoveries to the public; thereby incentivizing knowledge production by multiplying economic effects on society. Dynamism spurred by such incentives fostered

74 Ana Maria Santacreu, Makenzie Peake, *Why Intellectual Property Rights Protection Matters for Economic Growth*, FEDERAL RESERVE BANK OF ST. LOUIS (Sept. 12, 2019), https://www.stlouisfed.org/on-the-economy/2019/september/intellectual-property-rights-protection-economic-growth.

75 Joel Mokyr, *The Intellectual Origins of Modern Economic Growth*, 65(2) THE JOURNAL OF ECONOMIC HISTORY 285, 318 (2005). *See also* Carlo Marco Belfanti, *Guilds, Patents, and the Circulation of Technical Knowledge*, 45 TECHNOLOGY AND CULTURE 569, 569–89 (2004); Joel Mokyr, *Intellectual Property Rights, the Industrial Revolution, and the Beginnings of Modern Economic Growth*, 99(2) AMERICAN ECONOMIC REVIEW 394, 349–55 (2009).

further human capital accumulation, unleashing a vicious circle of capital accumulation that Karl Marx later understood the best, notwithstanding his flawed normative conclusions.

This was empirically demonstrated. Indeed, William Nordhaus seminally shows that only the inventor captures the percentage of the surplus of an invention.[76] In other words, the positive externalities of inventions represent more than 97 percent of the value of the invention; that is, society benefits more than the inventor from his invention. Institutions must incentivize the practices of inventing and creating strong IPR protection. History demonstrates the positive effects of solid IPR protection. The Venice Act of 1474 established the first modern patent regulation, pioneering other patent systems worldwide. However, the English Statutes of Monopolies, passed in 1624, effectively enabled technological revolutions thanks to the strong protection of property rights and a functioning court system.[77] If the Statute of Monopolies prohibited monopolies on the market, Section 6 adequately exempted intellectual monopolies (such as patents), and the encouragement of innovations trumped the few allocative losses generated by IPRs protection with a 14-year intellectual monopoly via patents.

North and Thomas found that by 1700, England "had developed an efficient set of property rights embedded in common law [and] . . . began to protect private property in knowledge with its patent law. The stage was now set for the industrial revolution."[78] As a result, "no other major European country had a formal patent system, as in England, before 1791. This still places the key institutional innovation a good 80 years before the Industrial Revolution."[79] As the pioneer of the patent system, England is home to many innovations that have ultimately sparked Industrial Revolutions.[80] IPR protection contributed to exponential economic growth. From the beginning of IPR protection, society assimilated IPRs into "monopolies": The monopoly power given to property owners was then equated with the intellectual monopoly given to inventors.[81]

76 William Nordhaus, *Schumpeterian Profits in the American Economy: Theory and Measurement*, NBER WORKING PAPERS 10433 (2004), https://www.nber.org/system/files/working_papers/w10433/w10433.pdf .

77 HAROLD IRVIN DUTTON, THE PATENT SYSTEM AND INVENTIVE ACTIVITY DURING THE INDUSTRIAL REVOLUTION, 1750–1852 (1984); Richard J. Sullivan, *England's 'Age of Invention': The Acceleration of Patents and Patentable Invention During the Industrial Revolution*, 26 EXPLORATIONS IN ECONOMIC HISTORY 424, 424–52 (1989) ("In 1762, England enters a period of unprecedented inventive activity, and population growth can account for approximately one-third of the growth of total patents. But two-thirds of the growth of total patents were due to an increase in patents per person.").

78 DOUGLAS NORTH, ROBERT PAUL THOMAS, THE RISE OF THE WESTERN WORLD: A NEW ECONOMIC HISTORY 156 (1973).

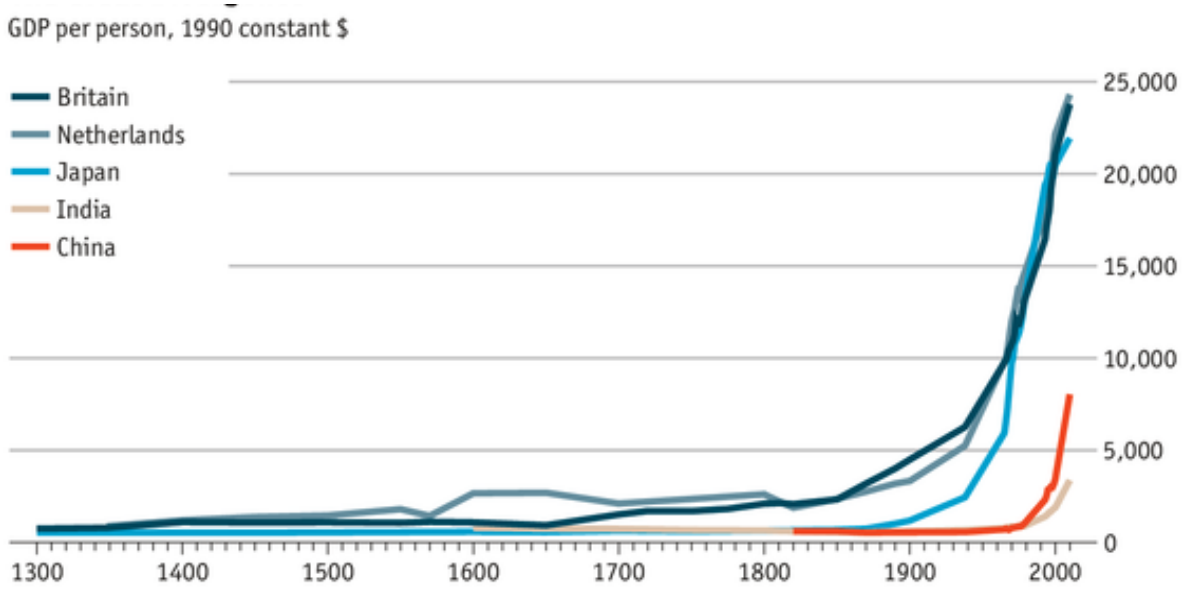
79 Gregory Clark, *The Great Escape: The Industrial Revolution in Theory and in History*, UC DAVIS FACULTY PAPER (2003), http://faculty.econ.ucdavis.edu/faculty/gclark/papers/IR2003.pdf.

80 *Id*. *See also* Geoffrey M. Hodgson, *1688 and all that: property rights, the Glorious Revolution and the rise of British capitalism*, 13(1) JOURNAL OF INSTITUTIONAL ECONOMICS 79, 79–107 (2017)

81 *See* DARON ACEMOGLU, JAMES A. ROBINSON, WHY NATIONS FAIL: THE ORIGIN OF POWER, PROSPERITY, AND POVERTY 393 (2012) (discussing how whom the constitutional settlement of 1689 contributed to the "strengthening the property right of both land and capital owners . . . spurred a process of financial and commercial expansion.").

Spikes in recorded patents often signal increased inventiveness, and thus, economic growth. For instance, in England, a spike occurred in 1754 followed by a second spike in 1791.[82] Each end "cannot be explained by any change in the patent laws" but instead by emerging modern capitalism that encouraged inventors.[83] For creators and scientists "started using the 'formal' system of the invention, and the patent system became an institutionalized mechanism of protecting property rights." In short, technological changes encouraged by IPRs protection propelled a (Schumpeterian) endogenous growth.[84] As IPRs protection enabled industrial revolutions, the significant divergence between the West and the rest of the world expanded with diverging levels of prosperity, as Figure 3 illustrates.

Figure 3: The Great Divergence:[85]



The exponential growth generated by industrial revolutions mostly comes from "intellectual" capital (knowledge, intangible property) as opposed to physical and human capital (tangible property). Indeed, intellectual capital explains 50–70 percent of the growth in income per person, whereas physical and human capital explains 30–50 percent of growth.[86]

82 Richard J. Sullivan, *England's 'Age of Invention': The Acceleration of Patents and Patentable Invention During the Industrial Revolution*, 26 EXPLORATIONS IN ECONOMIC HISTORY 424, 424–52 (1989).
83 Alvaro Santos Pereira, "Essays on the Origins of Modern Economic Growth" (Ph.D. diss., Simon Fraser University, 2003).
84 *Id*. at 11. *See also* Angus C. Chu, Zonglai Kou, Xilin Wang, *Effect of patents on the transition from stagnation to growth*, 33 JOURNAL OF POPULATION ECONOMICS 395, 395–411 (2020) (analyzing the effects of IPRs in a Schumpeterian growth model and demonstrating that IPRs generate earlier economic take-off but restricts competition in the long run).
85 Angus Maddison, *The World Economy – A Millenial Perspective*, OECD DEVELOPMENT CENTRE (Jun. 12, 2001); Angus Maddison, *Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD*, GRONINGEN GROWTH AND DEVELOPMENT CENTRE (GGDC), https://web.archive.org/web/20190310223158/http://www.ggdc.net/MADDISON/oriindex.htm.
86 Gregory Clark, *The Great Escape: The Industrial Revolution in Theory and in History*, UC DAVIS FACULTY PAPER (2003), http://faculty.econ.ucdavis.edu/faculty/gclark/papers/IR2003.pdf.

Mokyr distinguishes between propositional knowledge (science and theoretical research) and useful knowledge (creations, inventions, and applied research).[87] Mokyr demonstrated that the encouragement and massive spread of useful knowledge explain the breakthrough in economic growth that the West has experienced with industrial revolutions. He indicates that the "change in the rate and nature of economic growth in the West must be explained through developments in the intellectual realm concerning this 'useful knowledge."[88] This is the growth of useful knowledge that has generated exponential growth affiliated with industrial revolutions.

The "Industrial Enlightenment," as Mokyr calls it, encouraged and expanded upon the knowledge that sparked economic growth. In other words, encouraging inventions and creations through intellectual property rights played a significant role (alongside universities, learned societies, etc.) in promoting innovation, generating a wealth divergence between the West and the rest of the world during the industrial revolutions.[89] This "Industrial Enlightenment" generated intellectual curiosity and skepticism that, coupled with the institutional enablers of innovations (*i.e.*, protection of property rights), triggered an age of innovations and economic growth. Mokyr concludes, "skepticism, rebelliousness, and disrespect were as much the taproots of innovation as economic incentives."[90] Economic growth spawns from the authority of ideas rather than the idea of authority. Creative ideas and irreverence in the economic and social status quo underpinned economic growth by protecting tangible and intangible property rights. The production of creative knowledge and inventive technologies requires institutional incentives; otherwise, the potential value of economic growth remains unknown.

The vast and established economic literature demonstrates that inventors and creators only sometimes capture the entire social value of inventive efforts. Instead, the absence of intellectual monopolies that protect intellectual property rights and the lack of appropriability of innovations lead to the underproduction of innovations. This under-production can be called a tragedy of the *un*commons.

87 Joel Mokyr, *The Intellectual Origins of Modern Economic Growth*, 65(2) THE JOURNAL OF ECONOMIC HISTORY 285, 285–351 (2005).

88 *Id.* at 287

> the short answer as to why the West is so much richer today than it was two centuries ago is that collectively, these societies 'know' more. This does not necessarily mean that each individual on average knows more than his or her great-great grandparent…but that social knowledge, defined as the union of all pieces of individual knowledge has expanded.

89 KENNETH POMERANZ, THE GREAT DIVERGENCE: CHINA, EUROPE, AND THE MAKING OF THE MODERN WORLD ECONOMY (2000); Angus Maddison, *Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD*, GRONINGEN GROWTH AND DEVELOPMENT CENTRE (GGDC), https://web.archive.org/web/20190310223158/http://www.ggdc.net/MADDISON/oriindex.htm.

90 KENNETH POMERANZ at 342.

II.3.2. Avoiding The Tragedy of the Uncommons With Strong IPRs Protection

More protection of intellectual property rights leads to unseen and undelivered innovation.[91] Rising opportunity costs and lack of incentive to create stifle economic growth. It is not the tragedy of the commons since there is no over-utilization but rather under-production (and consequently, under-utilization) of innovations.[92] Garrett Hardin describes freedom in a commons when he says, "ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruins to all."[93] Examples of such tragedies include overgrazed fields, congested public roads and depleted fisheries.

The tragedy of the uncommons differs from that of the anticommons because the lack, not the excess, of property rights leads to lower economic growth. Michael Heller introduced the notion of anticommons as a situation "when there are too many owners holding rights of exclusion," leading to underused resources.[94] Examples include empty Moscow storefronts and poorly defined property rights leading to ownership overlaps. Multiple owners each have the right to exclude others from a scarce resource, and no one has an effective privilege of use.[95] It is not a problem for semicommons because there are neither private property rights nor common ownership over possible inventions and creations.[96] In a semicommons, "a resource is owned and used in common for one major purpose, but, concerning some other major purpose, individual economic units… have property rights to separate pieces of the commons."[97] Examples include an open-field system that combines private property rights with obligations from a common herdsman or private apartments in condominiums.

The tragedy of uncommons is different.[98] The tragedy, generated by a lack of IPRs protection, arises not from over-utilization (as in the tragedy of the commons) or under-utilization (as in the tragedy of

91 For some uses of uncommons with different meanings, *see* Mario Blaser, Marisol de la Cadena, *The Uncommons: An Introduction*, 59(2) ANTHROPOLOGICA 185, 185–93 (2017) (defining as extraction of natural resources from commons); Karsten Jonse, Ahu Tatli, Mustafa F. Ozbilgin, Myrtle P. Bell, *The Tragedy of the Uncommons: Reframing Workforce Diversity*, 66(2) HUMAN RELATIONS 271, 271–94 (2013) (defining as the individuals from less powerful or under-privileged backgrounds in the workplace); Jonathan B. Wiener, *The Tragedy of the Uncommons: On the Politics of Apocalypse*, 7(1) GLOBAL POLICY 67, 67–80 (2016) (defining as the misperception and mismanagement of rare catastrophic risks); Matthew Brown, Brianna Cardiff-Hicks, *The Tragedy of the Uncommons*, 14(2) REVIEW OF LAW & ECONOMICS 1 (2017) (defining as the inefficient use of resources that are both non-substituable and transitory); KATHRYN MILUN, THE POLITICAL UNCOMMONS: THE CROSS-CULTURAL LOGIC OF THE GLOBAL COMMONS (2011).
92 Garret Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1243-48 (1968).
93 *Id.* at 1244.
94 Michael. A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 621–99 (1998).
95 *See also* Michael A. Heller, *The Tragedy of the Anticommons: A Concise Introduction and Lexicon*, 76 THE MODERN LAW REVIEW 6, 6–25 (2013); Michael A. Heller, Rebecca, S. Eisenberg, *Can Patent Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998).
96 Henry, E. Smith, *Semicommon Property Rights and Scattering in the Open Fields*, 29 THE JOURNAL OF LEGAL STUDIES 131, 131–69 (2000).
97 *Id*. at 131.
98 Being nonrivalrous and nonexcludable, innovation is a commons. *See* JASON POTTS, INNOVATION COMMONS. THE ORIGIN OF ECONOMIC GROWTH (2019). But the innovation commons are opposite to the traditional view of commons (*i.e.*, over-exploitation) since, absent property rights and optimal incentive mechanism, innovation commons are under-produced.

the anticommons) but rather in the under-production of tremendously beneficial activities–namely, creations, inventions, discoveries, and research that might lead to commercialized innovation. Uncommons are potential innovations from which society can benefit. However, they remain unseen because of the lack of IPR protection. Frederic Bastiat referred to the unseen as the opportunity cost of regulatory actions.[99] However, the unseen can also be an opportunity gain missed from property inaction. The absence of innovation due to lack of incentives created by weak or lack of IPRs protection generates the tragedy of the unseen, that is, the tragedy of the *un*commons.

The lack of IPRs protection thus generates a tragedy of the *un*commons: it prevents the emergence of innovations that underpin economic growth.100 IPRs protection gave rise to modern capitalism with exponential economic growth. Because of a lack of IPRs protection, the tragedy of the uncommons will unfold with stagnation and stationary capitalism. In conclusion, IPR protection uses an institutional device to internalize potential externalities created by inventions and creations. In turn, this process incentivizes and encourages economic progress.

Weak IPR protection leads to high innovation costs. Barnett demonstrates that the postwar, more fragile protection of IPRs "provides cautionary lessons for commentators who advocate weakening patents to facility entry and promote innovation."[101] An alternative to weakened IPR protection relies on unsustainably high public funding. Such funding is often provided to support R&D laboratories in well-established firms rather than to facilitate market entry and disruption. Without taxpayers' costs, the tragedy of the uncommons unfolds. Similarly, positive externalities created by innovation will never reach the market or consumers. The unseen non-producing goods that benefit society often result in delayed or foregone economic growth.

This is the economic function of property rights, as Harold Demsetz explained. That is, "a primary function of property rights is that of guiding incentivizes to achieve a greater internalization of externalities."[102] By internationalizing potential externalities, strong IPR protection circumvents the tragedy of the uncommons. Weak IPRs protection generates a strong deterrent effect on investment. The World Bank found that firms were reluctant to invest in countries with soft IPR protection.[103] Nevertheless, the number of patents does not necessarily reflect the level of innovation, as many innovations can be unpatentable or inventors refrain from patenting their inventions.104

99 *See What is Seen and What is Not Seen, or Political Economy in One Lesson1 [July 1850] [final edit]*, OLL (Nov. 17, 2015), https://oll.libertyfund.org/page/wswns.

100 The tragedy of the uncommons differs from the approach of the "knowledge commons" according to which creation and intellectual inventions ought to be governed by a community. *See*, on knowledge commons, GOVERNING KNOWLEDGE COMMONS (Brett M. Frischmann, Michael. J. Madison, Katherine J. Strandburg eds., 2014).

101 Jonathan M. Barnett, *The Great Patent Grab*, *in* THE BATTLE OVER PATENTS. HISTORY AND POLITICS OF INNOVATION 208, 208–77, 252 (Stephen H. Herber, Naomi R. Lamoureux eds., 2021).

102 Harold Demsetz, *Toward a theory of property rights*, 57(2) AMERICAN ECONOMIC REVIEW 347, 347–59 (1967).

103 INTELLECTUAL PROPERTY PROTECTION, DIRECT INVESTMENT, AND TECHNOLOGY TRANSFER: GERMANY, JAPAN, AND THE UNITED STATES (Edwin Mansfield ed., World Bank Books, 1995).

104 Tom Nicholas, *Cheaper Patents*, 40 RESEARCH POLICY 325, 325–39 (2011) (considering that "[p]atents are a noisy measure of changes in innovation especially if the propensity to patent changes simultaneously").

Consequently, despite economic data and the legal basis that justifies granting intellectual monopolies through IPRs protection, it remains unfortunately accurate that:

> The debate over the monopoly consequences of private property rights in general and copyrights (and patents) in particular is loaded with hypotheses that are in desperate need of empirical testing by law and economics scholars. Granted, private property rights make monopoly possible, but the view that property rights in general, and copyright in particular, necessarily imply monopoly rights, is as confusing as the more general proposition that Joseph Schumpeter sought to correct, that monopoly is everywhere a drag on the market.[105]

In other words, if property rights are monopoly rights, IPRs create Schumpeterian rents that encourage innovation and economic growth, rather than generating monopolistic rents that drag on markets. Therefore, intellectual monopolies derived from IPR protection are "good" monopolies, as defined by Frank Knight and his dichotomy between "good" and "bad" monopolies.[106] Most importantly, such monopolies incentivize innovation by avoiding the tragedy of the uncommons. These innovations benefit society more than inventors do, fostering the same exponential growth that begs modern capitalism.

In conclusion, there is no such thing as "strong" IPRs protection of intellectual property is approached from the perspective of ownership rights: The IPRs-holder can and should exercise veto power inherent to property rights. "Strong" protection of IPRs, which indicates the right to exclude the potentially criticized, is the appropriate IPRs protection. Absent such an ability to exclude trespassers and opportunistic market actors, the tragedy of the uncommons looms with deterred innovation, reduced economic dynamism, and, ultimately, slower economic growth. Now that IPRs are reconceptualized as legitimate intellectual monopolies providing a right for exclusion, it is necessary to address the current assault on what I call "the instruments of innovation"–namely, the scale and the lever. The final section proposes a new approach to move away from this unfortunate assault, bringing us closer to the tragedy of the uncommons.

III. The Instruments Of Innovation

The intellectual property-as-intellectual monopoly has revealed that veto power, as a right to exclude trespassers, remains fundamental in encouraging investments, innovation, and, thus, economic growth. Innovations arise from two sources that contribute to building dynamic capabilities.[107]

First, innovation can arise through the corporate scale whereby companies gain market power, often erroneously considered to "monopolize" the market. The scale enables a process of innovation

105 RICHARD B. MCKENZIE, DWIGHT R. LEE, IN DEFENSE OF MONOPOLY. HOW MARKET POWER FOSTERS CREATIVE PRODUCTION, 216 (2011).
106 FRANK H. KNIGHT, RISK, UNCERTAINTY, AND PROFIT, 17 (1921).
107 DAVID J. TEECE, DYNAMIC CAPABILITIES & STRATEGIC MANAGEMENT. ORGANIZING FOR INNOVATION AND GROWTH (2011).

through distribution, according to which mass production commercializes and disseminates innovations. Second, innovation can arise through a property right that allows the inventor to transact in the market: the intellectual property right acts as a lever, allowing the inventor to commercialize their inventions. The property lever enables an innovation-through-transaction process. Property creation aids inventors and creators in licensing and distributing their creations to those who value them the most. This section discusses both sources of innovation and their respective implications for antitrust and IPR protection. Because both corporate scale and the property lever constitute "difficult-to-replicate knowledge assets" (distribution knowledge and novel knowledge, respectively), both are dynamic proficiencies that help firms capture value from innovation through enhanced appropriability of their strategies.[108] Schumpeterian (endogenous) growth models implicitly demonstrate how scale and lever complement each other as sources of innovation. For instance, market size and property incentives are factors that determine the "take-off" (or exponential economic growth rates) of an economy:

> Strengthening patent protection leads to an earlier take-off. Incentives for innovation to take place depend on the market value of inventions, which, in turn, depends on the level of patent protection and market size. Therefore, when stronger patent protection increases the market value of patents by reducing price competition and making firms more profitable, it also reduces the market size required for innovation to take place. As a result, the economy starts to experience innovation and growth at an earlier time (i.e., an earlier industrial revolution).[109]

Correspondingly, the smaller the market size, the more important the IPRs protection will be: entrepreneurs rely on leveraging their inventions through legal titles with the prospect of entrepreneurial profits in a small and niche market of patented innovations. As innovation disseminates in the economy, economies of scale enable competitors to outcompete the first mover. Conversely, the greater the market size, the more critical is the corporate scale. Entrepreneurs rely on leveraging their innovations in large shares of the market; otherwise, competitors remain competitive in the local part of the market.

Scales and levers can be alternatives for innovation generation. We know from Ronald Coase that firms will integrate assets whenever transaction costs are higher than internalization costs, and firms will favor market exchanges whenever transaction costs are lower than internalization costs.[110] The organizational structure of innovation follows this logic, and the two instruments of innovation aptly portray this alternative.[111] Scale and leverage are equally crucial in encouraging innovation. While the

108 *Ibid*, 194 (competitive advantage of firms stems from the "ownership and/or employment of difficult-to-replicate knowledge assets, and the manner in which they are deployed…. New challenges require new organizational forms and the development and the astute exercise of dynamic capabilities.")
109 Angus C. Chu, Zonglai Kou, Xilin Wang, *Effect of patents on the transition from stagnation to growth*, 33 JOURNAL OF POPULATION ECONOMICS 395, 395–411 (2020).
110 Ronald H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386, 386–405 (1937).
111 On the organizational consequences of IPRs, *see* Jonathan M. Barnett, *Innovators, Firms, and Markets. The Organizational Logic of Intellectual Property*, (New York: NY, Oxford University Press, 2021) (demonstrating that IPRs favors smaller firms).

corporate scale enables the commercialization of inventions through distributional capacities (innovation), the property lever enables inventors to recoup their investments and price their inventions in the market economy, thereby turning inventions into potential innovations.

III.1. The Corporate Scale: Restraints for Innovation

The scale of corporations enables firms to commercialize inventions, as the transformation of inventions into innovations refers to the distribution of inventions in the market to reach end users. Suppose an invention could retain dead letters (unexploited patents, undistributed books, etc.). In that case, innovation would be the dynamic process of commercializing creativity to outcompete competitors who, trapped in the technological status quo, are unaware of the competitive advantage the innovator is building. Large-scale corporations commercialize inventions into marketable innovations that are capable of disrupting competitors. This is the true essence of competition through innovation, as Schumpeter famously explained:

> [i]t is not sufficient to argue that because perfect competition is impossible under modern industrial conditions—or because it always has been impossible—the large-scale establishment or unit of control must be accepted as a necessary evil inseparable from the economic progress which it is prevented from sabotaging by the forces inherent in its productive apparatus. What we have got to accept is that it has come to be the most powerful engine of that progress…[112]

The corporate scale enables the commercialization of inventions and lowers the cost of innovations through subsequent reproduction and imitation. This constitutes the main engine of market competition, contrary to the perfect competition model. The scale of corporations enables inventions to be distributed to allot a first-mover advantage to the company. Business historian Alfred Chandler further explained this when he said "[a]ll the new enterprises reinforced their first-mover advantages by spending much of the income resulting from the cost advantages of scale on massive national advertising campaigns."[113] In this way, the scale helped first movers advertise their products and solidify their market positions through widespread distribution.

The scale requires distributional capabilities to disseminate innovations and trigger antitrust scrutiny. However, a paradox exists: corporate scale is essential to compete through innovation. Corporate scale is always the target of recurring antitrust populism.[114] This paradox of innovating through scale hacks back from the early days of populist antitrust enforcement and is resurging in today's economy. To further the metaphor of scale, the size of a company commercializing innovation and its scale and scope economies will be a magnet for consumers. Therefore, a large company will outcompete its

112 JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 106 (Taylor & Francis, 2003) (1943).
113 ALFRED D. CHANDLER JR. SCALE AND SCOPE: THE DYNAMIC OF INDUSTRIAL CAPITALISM, 63–65 (1990).
114 Aurelien Portuese, *Biden Antitrust: The Paradox of the New Antitrust Populism*, 29 GEO. MASON L. REV. (2022); Aurelien Portuese, *Populism and the Economics of Antitrust*, *in* THE PALGRAVE HANDBOOK OF POPULISM 227–43 (Michael Oswald ed., 2021).

competitors from a consumer standpoint. While innovation laggards levitate and are uprooted from their traditional consumer base, large-scale enterprise innovation reaps the entire market. For instance, supermarkets wipe out local, less efficient retailers, and the corporate scale enables firms to compete through organizational innovation.

A naive commentator sees the off-balance scale that results from innovation as epitomizing the source of unfair competition. This view follows that competition is unfair only if fairness is invoked to outlaw disruptive innovation. Among many examples, the scale of chain stores disrupts small retailers not because of unfair competition or predatory pricing but because of innovative cost-saving structures. The absurd notion of fairness, which would stifle innovation and decrease consumer benefits, is the approach to "unfairness" some antitrust populists recommend. Through prohibition of the undefined "unfair methods of competition," antitrust populists intend to see unfairness when corporate scale enables innovation commercialization to a successful extent, which disrupts competitors and incumbents. For antitrust populists, "fairer" competitor too often means softer, milder competitors where regulators limit (if not eradicate) the disruptive nature of large-scale enterprises.

Fortunately, courts seldom recognize that innovation-based competition, which disrupts competitors, is "hypercompetitive": The Ninth Circuit made clear in 2020 that "anti-competitive behavior is illegal under federal antitrust law. Hypercompetitive behavior is not."[115] However, if commercializing innovations depends on a corporation's scale, then the scale is not sufficient. Smaller firms can disrupt large-scale enterprises, whose market power appears more assailable than traditionally thought. For instance, Zoom's video platform disrupted larger incumbents such as Webex and Microsoft, illustrating innovation's pervasiveness beyond the scale. Joseph Schumpeter further explained scale when he wrote: "There cannot be any reasonable doubt that under the conditions of our epoch, such [competitive] superiority is, as a matter of fact, the outstanding feature of the typical large-scale unit of control, though the mere size is neither necessary nor sufficient for it."[116] If the corporate scale is essential for innovation to materialize, other instruments propel such innovation. This property lever also propels innovation.

III.2. The Property Lever: Property for Innovation

IPRs are collaterals for inventors and creators. Entrepreneurs are given the opportunity to convert their human capital (the "creations of the mind") into financial capital (properterized assets), and ultimately into tradable capital, thanks to the collateralizable assets resulting from the intellectual monopolies that IPRs grant to creators and inventors (patents, copyrights, trademarks, and trade secrets) (sale, licensing).

IPRs' property lever function of IPRs enables the commercialization of inventions into innovations. The protected idea allows entrepreneurs to attract capitalists (i.e., venture capital) who facilitate the

115 FTC v. Qualcomm Inc., 969 F.3d 974 (9th Cir. 2020) (No. 19-16122).
116 JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 101 (2003) (1943).

commercialization of inventions. If corporate scale enables innovation through large-scale distribution and vertical restraints, intellectual property rights allow innovations through market-based exchanges and horizontal transactions.

The greater the market potential, the more valuable and expensive the property levers. The value of intellectual monopoly conferred by the property lever is proportional to consumer demand's expected size and value. The greater the leveraging potential, the more valuable the property lever. For instance, the value of a patent on a revolutionary pill invented by a small pharmaceutical company is proportional to its potential patient base. Conversely, the smaller the market for inventions, the lower the value of IPRs as leveraging collateral. To further the metaphor, the ease with which the property lever will propel the inventions of the resistance arm into the market through a wide range of possibilities, such as licensing, standard essential patents, acquisition of IPRs and human capital by mergers ("acquihire"), and the ease with which the company will become a public company, will increase with the length of the effort arm (the expected entrepreneurial profits). Archimedes once said, "Give me a lever long enough and a fulcrum on which to place it, and I shall move the world." To make an impact, innovators need an intellectual property fulcrum. IPRs are necessary fulcrums that leverage inventions for innovations.

However, proponents of intellectual property reform aim to weaken the property lever in the name of ideal competition, which has no place in economic and legal research. For the sake of fair and open competition, they want to limit (if not eliminate) intellectual monopolies by casting doubt on the concept of property. Patent settlements are increasingly governed by antitrust laws, while patent holders have limited access to injunctive remedies, ignoring the role of property rule in preserving intellectual monopolies. However, free competition is not competitive since free entry is no entry. The appropriability of (intellectual) property rights promotes innovation and competition rather than inhibiting it.

III.3. Regulatory Implications of The Taxonomy of The Instruments of Innovation

The property lever inherent in IPRs protection resorts to market-based exchange. The patent holder provides value to the company, while the IPRs provide a lever so the entrepreneur can speed up the distribution of inventions into large-scale enterprises. The entrepreneur can also license IPRs to third-party implementers. In this way, the entrepreneur can implement inventions via a distributional network.

In Calabresi and Melamed's seminal taxonomy of legal rules, property rules regulate IPR levels.[117] From a remedial perspective, since an intellectual monopoly provides owner freedom from trespass, the property rule (*i.e.*, exclusion) applies instead of the liability rule (i.e., damages). Recent efforts to

117 Guido Calabresi, Douglas A. Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV., 1089, 1089–128 (1972) (proposing a unified framework of entitlements between property rules, liability rules, and inalienability rules).

reform patent litigation to secure freedom from trespass with injunctive relief have neglected the nature of IPRs (*i.e.*, intellectual monopolies).[118] Moreover, these efforts represent a detrimental shift from property rules to liability rules in protecting intellectual property rights.

On the other hand, the corporate scale resorts to internal exchanges within a firm. Innovations occur outside market exchanges and therefore are not priced unless they exit the firm by licensing corporate patents, selling copyrighted goods, and franchising a trademark.[119] As a resolution mechanism, the liability rule regulates intra-firm exchanges: employee-employee relationships inevitably lead to damages, rather than a right to exclude. Corporate scale rests on the premise of scale and scope economies that fuel the innovation process and transform inventions into commercialized innovations. Consequently, corporate scale as a vehicle for innovation inevitably relies on scaled distributional capabilities. These capabilities are beyond human capital and require considerable financial capital, available only to a few large-scale enterprises. Bigness provides a corporate scale with the necessary dimensions to commercialize innovations. Table 1 captures the legal and economic implications of the proposed taxonomy of the innovation process.[120]

Table 1: Law and Economics of The Instruments of Innovation

	Property Lever	**Corporate Scale**
Exchanges	Market-Based	Intra-Firm-Based
Organizational Effect	Integration-Neutral	Integrated
Corporate Size	Size-Irrelevant	Size-Dependent
Third-Party Effect	Externalities	Internalized
Leveraging	Through Contracting (Sale, Licensing)	Through Distribution (Scale and Scope Economies)
Legal Rule	Property Rule	Liability Rule
Optimal Damages	Injunctions	Damages

118 *See*, for instance, regarding the weakening of rights for SEP-holders, DOJ, USPTO & Nat'l Inst. of Standards & Tech., Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments (Dec. 6, 2021), https://www.regulations.gov/docket/ATR-2021-0001.

119 *See* Ronald H. Coase, *The Nature of the Firm*, 4(16) ECONOMICA 386, 386–405 (1937), who seminally sketched out the alternative between resorting to the price mechanism or firm integration depending on the relative transaction costs and integration costs. He laid out the alternative in the following way:

> a firm will tend to be larger: (a) the less the costs of organising and the slower these costs rise with an increase in the transactions organized; (b) the less likely the entrepreneur is to make mistakes and the smaller the increase in mistakes with an increase in the transactions organized; (c) the greater the lowering (or the less the rise) in the supply price of factors of production to firms of larger size.

120 *See also* Jonathan M. Barnett, *Intellectual Property As a Law of Organization*, 84 S. CAL. L. REV. 785, 785–58 (2011) (distinguishing between 'organizational options'—namely, contract or integrate).

Leveraging	Through Contracting Over Property (Sale, Licensing)	Through Contracting Over Distribution (Scale and Scope Economies)
Prevalent Form of Capital	Human Capital	Financial Capital
Regulatory Response	**Attacked by IP Reformers and Implementers**	**Attacked by Antitrust Populists**

The taxonomy of the instruments of innovation–namely, scale and lever– reveals that IP reforms and antitrust populism seek to undermine the foundations of innovation in the dystopian effort to achieve perfect competition. Companies can hardly appropriate returns from innovation due to corporate smallness or a lack of entrepreneurial rents, given the weakening of IPRs. Efforts to disparage the property lever through decreased IPRs protection are futile and damaging as efforts to disparage corporate scale through aggressive and misguided antitrust enforcement. Property and corporate scales represent either side of the same coin–the coin of innovation. Instead, "antitrust policy should support IP protections because IP provides incentives for innovation competition."[121] Indeed, officials need to recognize these two instruments of innovation. Antitrust enforcers ought to better understand the distributional prerequisites of innovation: leveraging strategies through scale enables the commercialization process of innovations. Likewise, patent reformers ought to better understand the property prerequisites of innovation: leveraging strategies through appropriable innovations incentivizes the process of creative destruction. In other words, leveraging strategies take place through a distributional scale or through properterized assets that allow for contracting out; leveraging strategies are essential to foster innovation.

Interestingly, these two instruments of innovation–scale and lever–are not mutually exclusive. For instance, the corporate scale enables patented inventions to leverage their potential, whereas the property lever requires a distributional scale to reap the potential benefits of inventions. Both the scales and levers require legal restrictions. The effects of scale unfold subject to contractual restrictions, whereas the effects of lever unfold are subject to (intellectual) property rights protection. The liability rule predominantly regulates corporate scale by awarding damages in the case of contractual breach. The property rule predominantly holds the property lever (and ought to do so) with a specific performance–namely, freedom from trespass–in the case of IP infringements.

While the corporate scale may lead to monopolization and inevitable market concentration, property leverage grants an intellectual monopoly and concentrates a specific invention in the hands of its owner. Exclusions and restrictions are inherent in this dual process of innovation, which is a prerequisite for the dynamic process of competition. Consequently, the antitrust effort to impose a duty on large companies to help competitors, who enjoy legal entitlements to operate opportunistically and access propertized assets of large companies, appears futile and disingenuous to the process of

121 David F. Spulber, *Antitrust and Innovation Competition*, 11 JOURNAL OF ANTITRUST ENFORCEMENT 5, 37 (2023).

innovation. To paraphrase Schumpeter, innovation without contractual restraints is not innovation.[122] However, courts increasingly enforce IP laws and antitrust laws to circumscribe if they do not negate the effects of the two instruments of innovation– property lever and corporate scale, respectively.

III.3.1. Patent Hostility

The hostility of patent enforcement as property rights. Hospitality implies that exclusionary power is boisterously resurfaced. Such hostility occurs at the expense of encouraging innovation by leveraging property patents. This opposition to patents is based not only on the abolition of intellectual property rights, but also on the argument that patent enforcement may have anticompetitive effects, using antitrust laws as a weapon to further this opposition to the harm of society.

Courts developed hostility toward patents in the late New Deal and post-war periods.[123] For instance, the rate at which the validity of a patent was upheld in courts declined from 57 percent in the 20s to 36 percent in the 30s, to merely 15 percent during the 40s. Supreme Court Justice Jackson remarked in *Jungersen v. Ostby & Barton Co.* that "the only patent that is valid is one which this Court has not been able to get his hands on."[124] The patent validation rate increased to 18 percent by 1973.[125] Indeed, "for at least five decades, patents in the federal courts have faced a considerable chance of invalidation; we may expect that the condition to continue for many decades in the future," wrote Lawrence Baum in 1973.[126]

In 1973, patents were not perceived as what they truly are–namely, intellectual monopolies over properterized assets enabling innovation–but as mere obstacles to commerce and devices designed for monopolists, supposedly enjoying market power. Both the attitudes of judges and the influence of the Supreme Court have contributed to this patent hostility over five decades.[127] However, the trend changed: Patent validation rates increased in courts. Moreover, the FTC explicitly defended the presumption of patent validity on a clear and persuasive argument: Those who challenge a patent must show that the U.S. Invention and Trademark Office (USPTO) made a mistake when it issued the

122 Joseph Schumpeter once famously wrote "perfect competition implies free entry into every industry . . . . But perfectly free entry into a new field may make it impossible to enter it at all . . . . [W]hat we call economic progress is incompatible with [free entry]." JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 104–05 (HarperCollins, 3rd ed.2008) (1942).
123 Jonathan M. Barnett, *The Great Patent Grab*, *in* THE BATTLE OVER PATENTS. HISTORY AND POLITICS OF INNOVATION 208–277, 210 (Stephen H. Herber, Naomi R. Lamoureux eds., 2021).
124 Jungerson v. Ostby & Barton Co, 335 U.S. 560 (1949).
125 Lawrence Baum, *The Federal Courts and Patent Validity: An Analysis of the Record*, 56 J. PAT. OFF. SOC'Y 758, 758–87 (1974).
126 *Id*. at. 784.
127 Abe Fortas, *The Patent System in Distress*, 53 J. PAT. OFF. SOC'Y 810 (1971); Mark D. Davis, *Patent Abolitionism*, 17 BERKELEY TECH. L.J., 899, 899–952 (2002). The Court of Customs and Patent Appeals (CCPA) heard appeals from the USPTO and the International Trade Commission. The 1982 reform merged the CCPA with the appellate division of the Court of Claims to create the Federal Circuit. Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified in scattered sections of 28 U.S.C.).

disputed patent. Otherwise, the validity and legitimacy of the USPTO rulings are assumed. Contrary to Lawrence Baum's forecasts, a pro-patent period was brought about by four general causes:

1. Following President Carter and the U.S. Senate's desire to strengthen patent enforcement, Congress passed the Federal Courts Improvement Act in 1982 and created the Court of Appeals for the Federal Circuit (CAFC), aimed to "recover[ing] the value of the patent system as an incentive to industry."[128] The CAFC upheld the validity of patents, following the belief that patents are "born valid" unless proven otherwise.[129]

2. The DOJ's Antitrust Division changed its policy toward patents in the direction of Assistant Attorney General William Baxter. Baxter broke with the Antitrust Division's longstanding animosity of patents, which since the 1930s was based on the notion that monopolies inevitably hurt competition. Baxter enacted a policy change based on a "comparability" test announced years earlier, which is intended to secure patent protection after better understanding the dynamic advantages of patents for fostering innovation and competition. The aim is to ensure "a stream of benefits to the patentee…roughly comparability to the ultimate value of the invention."[130]

3. Large corporations have encouraged stronger IPRs protection and enforcement against infringers domestically and abroad.131 Cases such as Polaroid Corp. v. Eastman Kodak, which in 19991 led to a damage award to Polaroid of almost $900 million, largely contributed to reinforcing IPRs protection and incentivized companies to develop strong patent portfolios as part of their competitive strategies.[132]

4. The political belief that Asian economies were "free-riding on U.S. patented technologies led to domestic concerns that U.S. industrial competitiveness could only be enhanced by strengthening the U.S. patent system.[133]

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128 Quoted in L. Gordon Crovitz, *Jimmy Carter's Costly Patent Mistake*, WALL STREET JOURNAL, December 15, 2013, https://www.wsj.com/articles/SB10001424052702303293604579252662325112076. Appeals in patent litigation were heard by the court of appeals for the regional circuit. *See* 28 U.S.C. § 1294 (1976) (repealed 1982).

129 Lannom Mfg. Co., Inc. v. U.S. Intern. Trade Comm'n, 799 F.2d 1572, 1578–79 (Fed. Cir. 1986) (recognizing that "a patent is 'born valid' when it is granted by the Patent and Trademark Office"). This judicial stance is in line with 35 U.S.C. 282 which states that "a patent shall be presumed valid." *See also* KSR Intern. Co. v. Teleflex Inc., 550 U.S. 398, 412 (2007) ("By direction of 35 U.S.C. § 282, an issued patent is presumed valid.").

130 William Baxter, *Legal Restrictions on Exploitation of the Patent Monopoly: Economic Analysis*, 76 YALE L. J. 267, 313 (1966). *See also* Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1820 (1984).

131 *See* Ove Granstrand, *Innovation and Intellectual Property Rights*, *in* THE OXFORD HANDBOOK OF INNOVATION 274 (Jan Fagerberg, David C. Mowery, Richard R. Nelson, eds., 2005) (noting that the "US industry also pressed for a 'trade-based approach' to improve IP protection by including IP matters in US trade negotiations and in the GATT framework of international trade negotiations, resulting in a number of 'trade related aspects of IPRs' (TRIPS) subjected to negotiations").

132 *Id.*

133 *Id.*

However, the reversal of patent hostility was short-lived: patent hostility resurfaced boisterously. One seminal case is the *eBay* case from the Supreme Court, which made it more difficult to seek permanent injunctions for infringements of IPRs. This increasingly supplants the property rule in patent disputes, thereby preventing patent holders from enjoying the full extent of IPRs as intellectual monopolies supposedly entitling owners to exclude trespassers.[134] Similarly, Chief Justice Roberts contested the controversial *Actavis* decision, observing that:

> The majority today departs from the settled approach separating patent and antitrust law, weakens the protections afforded to innovators by patents, frustrates the public policy in favor of settling, and likely undermines the very policy it seeks to promote by forcing generics who step into the litigation ring to do so without the prospect of cash settlements.[135]

Despite short-lived efforts to overcome this trend, patent hostility remains *en vogue*.[136] Patent reformers' efforts to impose on patent-holders a duty to invalidate patented ideas, to share patented assets against the patent holder's consent, and to negate the nature of IPRs as intellectual monopolies through the unavailability of injunctive reliefs appear futile and contrary to incentivizing innovation. Innovation without the necessary restraints inherent to the property rule (*i.e.,* freedom from trespass) is not innovation.

II.3.2. Populist Antitrust Against Corporate Scale

Antitrust enforcement may erroneously discard corporate scale and make incursions into IPR protection to undermine the IPR owner's intellectual monopoly. For instance, in the *Hartford-Empire* case, the Supreme Court argued that "so large as the patent owner is using his patent in violation of the antitrust laws, he cannot restrain infringement of it by others."[137] With a questionable perception of what competition is, antitrust laws can be used to give a stamp of approval for patent infringement justified in the name of "patent misuse."[138]

Patent infringers' ability to use the patent misuse doctrine as an affirmative defense whenever they can assert that the patent's use had an "anticompetitive effect" is misleading.[139] As discussed above, the rationale for patents is to restrict competition with allocative losses (i.e., imperfect competition) in the short term to propel dynamic gains (i.e., innovation). Furthermore, the misuse of antitrust in patent

134 eBay Inc v MercExchange, LLC 47 US 388 (2006).
135 Federal Trade Commission v Actavis, Inc 570 US 136 (2013).
136 The so-called "New Madison Approach" was the main effort to overcome this trend. *See* Makan Delrahim, *The 'New Madison' Approach To Antitrust And Intellectual Property Law*, 1 J.L. & INNOVATION 1, 1–15 (2019).
137 Hartford-Empire Co. v United States, 323 U.S. 386, 415, 419 (1945).
138 Morton Salt Co. G.S. Suppiger Co., 314 U.S. 488 (1942), which introduced the patent misuse doctrine. *See also* Dubuit v. Harwell Enters. Inc. 336 F. Supp. 1184, 1187 (W.D.N.C. 1971); Transparent-Wrap Mach, Corp. v. Stokes & Smith Co., 329 U.S. 637, 641 (1947); Zenith Radio Corp. v. Hazeltine Research, Inc., 395, U.S. 100, 140 (1969); Jack Winter, Inc. v. Koratron Co., 375 F. Supp. 1, 71 (N.D. Cal. 1974). *See*, more generally, Robert J. Hoerner, *The Decline (and Fall?) of the Patent Misuse Doctrine in the Federal Circuit*, 69 ANTITRUST L.J. 669, 669–85 (2001) (finding that the misuse doctrine "destroys that [property] right until purge").
139 Braun, Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860 (Fed. Cir. 1997).

claims often overlooks the need to convincingly demonstrate that the patent holder has power in a relevant market for antitrust purposes. Thus, the instrumentalization of antitrust against patent holders reaches the apex. The use of antitrust to undermine IPRs is misguided for two reasons. First, scale and lever suggest leveraging strategies are essential to turn inventions into innovations: antitrust enforcement, which aims to prevent leveraging strategies by either an anti-bigness approach or via anti-IPRs, prevents the advent of innovations by thwarting the transformative process of inventions into innovations. Market power and intellectual monopoly are essential for effectuating this transformative process from inventions to innovations. Second, in terms of optimal policy design, there is no contradiction between scale and lever: the more robust the IPRs protection is, the more companies with fewer technological leads will benefit from such IPRs protection. In other words, smaller, less efficient companies benefit indirectly from IPR protection because of the dynamic interactions between small and more significant companies.

The organizational implications of the property and corporate scales are essential. However, the proposed taxonomy reveals that both instruments possess idiosyncratic features, making them complementary to innovation. Antitrust populists despise bigness as they provide a considerable competitive advantage over competitors when it comes to outcompeting them through the powerful and efficient production of innovations. Patent reformers (joined by antitrust populists) despise the obstacles to "open markets" that (intellectual) property rights represent opportunistic free-riders. Helping the few and harming the many, they organize a march toward the tragedy of the uncommons, where prosperity evaporates because the foundations of dynamic capitalism – the two instruments of the innovation process – tremble.

IV. Toward A "New Schumpeterian Approach"

IPRs do not confer market power; an intellectual monopoly over an idea or a work of art does not mean a dominant market position. Congress acknowledged the lack of market power presumptions from patents, trademarks, and copyrights as early as 1989.[140]

The rationale for decoupling IPRs and market power lies in Joseph Schumpeter's fundamental distinction between invention and innovation. Indeed, IPRs recognize potentially practical novelties, namely creations that can be marketable. IPRs do not generate innovations, which is the commercialization of inventions. Many inventions do not contribute to innovation; hence, they have little effect on the gross domestic product. To lead to market power, inventions must first be translated into innovations through distributional capabilities (i.e., commercialization). Second, these innovations must be so successful that they disrupt the traditional market players by shifting their consumption patterns. In other words, IPRs are neither necessary nor sufficient to exercise market power. IPRs, similar to real property rights, are prerequisites for owners' best use of resources. These prerequisites are promising and do not guarantee optimal resource use.

140 Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108 (1990).

IV.1. The Weakening of IPRs Through Antitrust

Antitrust made several incursions prohibiting practices that traditionally pertained to patent filing and litigation. For instance, filing an infringement suit on a patent that the patentee should have known was unenforceable. It could trigger antitrust liability—in addition, filing an infringement suit when the plaintiff knew that the competitor did not infringe on the patent.[141] As the economy entered a digital revolution built on complex electronic devices and cutting-edge computational technologies, the conflict between SEP holders and implementers (licensees) worsened. The divergence between SEP holders' valuation of a "reasonable" rate in F/RAND negotiations departs from the very low valuation that implementers give to patented technologies.

For instance, in *Re Innovatio IP Ventures, LLC Patent Litigation*, the patent holder's proposed valuation would have resulted in royalties on average of approximately $3.39 per access point, $4.72 per laptop, up to $16.17 per tablet, and up to $36.90 per bar code scanner or other inventory tracking devices.142 In contrast, the implementer's valuation would have resulted in royalties between $0.72 and $.0309 per chip.[143] In *Microsoft Corp. v Motorola Inc.*, the patent holder's proposed valuation would have resulted in royalties of between $6.00 and $8.00 per unit.144 In contrast, the implementer's valuation would have resulted in royalties between $0.03 and $0.065 cents per unit.[145]

In *Ericsson Inc. v. D-Link Sys., Inc.*, the patent holder proposed a $0.50 per unit royalty. In contrast, the implementer argued that a reasonable RAND rate would be "pennies or fractions thereof" per unit.146 In *Apple Inc. v. Motorola Mobility, Inc.*, the patent holder proposed a royalty rate of 2.25 percent per unit. In contrast, the implementer responded that it would be willing to pay a rate of no more than $1 for each Apple device.147 In light of these diverging views, an influential voice shifted the Overton window toward circumscribing and weakening SEP holders' rights with antitrust exemptions from the business conduct of implementers.

In 2015, the world's leading standard-setting organization (SEO)–the Institute of Electrical and Electronics Engineers ("IEEE")–sought guidance from the DOJ's Antitrust Division so that the Division could review the anti or pro-competitive nature of proposed business conduct.[148] Thus, the Division may issue a "no action," "decline to advise," or "probable challenge" probable challenge letter to proposed business conduct, therefore suggesting the division's antitrust approach to

141 *See* Douglas H. Ginsburg, Koren W. Wong-Ervin, Joshua D. Wright, *The Troubling Use of Antitrust to Regulate FRAND Licensing*, 10 COMPETITION POLICY INTERNATIONAL ANTITRUST CHRONICLE 2, 2 (2015).
142 *In re* lnnovatio IP Ventures, LLC Patent Litig., No. 11-C-9308, 2013 WL 5593609, at *12 (N.D. Ill. Oct. 3, 2013).
143 *Id.*
144 Microsoft Corp. v. Motorola, Inc., No. C10-1823, 2013 WL 2111217, at *87, *99 (W.D. Wash. April 25, 2013).
145 *Id.*
146 Ericsson Inc. v. D-Link Sys., Inc., No. 6:10-CV-473, 2013 WL 4046225, at *18 (E.D. Tex. Aug. 6, 2013).
147 Apple Inc. v. Motorola Mobility, Inc., No. 11- CV-178-bbc, 2012 WL 7989412, at *2 (W.D. Wis. Nov. 8, 2012).
148 Letter from Michael A. Lindsey, Counsel to Institute of Electrical and Electronics Engineers, Incorporated, to William J. Baer, Assistant Att'y Gen. USDep't of Just. (Sept. 30, 2014), https://www.justice.gov/sites/default/files/atr/legacy/2015/02/17/311483.pdf.

F/RAND licensing.[149] In particular, the IEEE sought antitrust clearance for policies limiting SEP holders' rights: Licensees could deprive SEP holders of their ability to seek injunctive relief in the case of SEP infringements, and SEP holders would be limited in their ability to negotiate F/RAND rates.

Consequently, the DOJ's Antitrust Division acceded to IEEE's requests to circumscribe and weaken SEP holders' rights.[150] The Division issued a 2015 Business Review Letter ("BRL"), which approved a standard-setting policy that complicated the life of SEP holders who requested injunctive relief against patent infringers. The letter additionally limited the SEP holders' ability to negotiate royalties with licensees. The letter made history: Patent hostility resurfaced in the name of curbing patent holders' allegedly "anti-competitive" behavior. In other words, agencies and courts once again weaponized antitrust to weaken IPRs: The intellectual monopolies that patents granted their inventors were again confused with market monopolies and anticompetitive behaviors.

Property rules were less relevant for protecting IPRs, as injunctions and freedom from trespass were made less available for patent holders, and mere liability rule protection substituted the traditional and adequate property rule for protecting patents. Foreign governments and enforcement agencies viewed the 2015 BRL as a DOJ policy weakening SEP holders' rights in curtailing injunctive remedies and limiting their F/RAND bargaining power.[151]

IV.2. The New Madison Approach to Antitrust-IP

In 2020, the DOJ's Antitrust Division modified its position from the 2015 BRL. By issuing an "extraordinary" supplement to the 2015 BRL, the Division not only qualified the wording of the letter but also modified the spirit of the letter.152 The Division did so adequately: it reversed gear and unashamedly embraced more robust protection of SEP holders to strengthen the property rule in regulating patents. The 2020 Supplement meant that freedom from trespass should be preserved, including in the F/RAND negotiations with SEP holders. The 2020 Supplement signifies that the property rule best ensures IPRs protection for SEP holders. They correctly assessed the risks and costs of patent holdups as more significant than the risks and costs of patent holdups.

Makan Delrahim envisioned a shift in the inevitable trend that contributed to weakening IPRs via the denial of SEP holders the rights to the effects of the property rule, namely, freedom from trespass via injunctive relief as the freedom to contract over its assets. Interestingly, Delrahim chose a leading

149 *Id*. at 12.
150 Letter from Renata B. Hesse, Acting Assistant Attorney General, U.S. DOJ Antitrust Division., to Michael A. Lindsey (Feb. 2, 2015), https://www.justice.gov/atr/page/file/1386871/download.
151 Letter from Makan Delrahim, Assistant Attorney General, United States DOJ Antitrust Division, to Sophia A. Muirhead, Institute of Electrical and Electronics Engineers, Incorporated (Sept. 10, 2020), https://www.justice.gov/atr/page/file/1315291/download
("We take the extraordinary step to supplement the 2015 Letter primarily because we have learned that our 2015 Letter has been cited, frequently and incorrectly, as an endorsement of the IEEE Policy, which was not our purpose or intent.").
152 *Id*.

Framer of the U.S. Constitution to intellectually back his policy shift–James Madison. "I submit that the true father of U.S. patent law was the Founding Father principally responsible for drafting the Constitution, James Madison," Makan Delrahim wrote in his seminal speech advocating for "the 'new Madison' approach to Antitrust and IP law."[153] At a time when weak patent protection was trendy, Delrahim found in Madison the reasons for reinforcing IPRs, especially regarding SEP holders.154 The "new Madison" approach rests on four building blocks.

- The patent hold-up is not "an antitrust problem."
- Antitrust laws are poorly suited to interfering with FRAND negotiations and commitments by SEP holders to SSOs.
- Patent hold-out is a genuine concern: Implementers should not instrumentalize SSOs to "become vehicles for concerted actions" to deplete the expected benefits from patented inventions, discouraging innovations;
- Because patent rights are property rights, the right to exclude ought to remain available to SEP holders unless SSOs and courts have an exceptionally valid reason to restrict such fundamental rights inherent to the property rights of SEP holders.
- "Consistent with the fundamental right to exclude," antitrust laws should treat as "per se legal" unilateral and unconditional refusal to license a patent.[155]

The "new Madison" approach rightfully reinstates IPRs as property rights and recognizes them as giving patent holders intellectual monopolies. Innovation experts acclaimed the "new Madison" approach as it put innovation first rather than competition first: IPRs trumped antitrust laws because dynamic gains dwarfed static losses. The patent holdup is not an antitrust issue under the new Madison approach. This was the correct approach because not only do patent holdups rarely take place, but should they ever materialize; it is undoubtedly a patent litigation matter irrespective of the presence or absence of market power from the patent holder.156 Courts can litigate patent disputes on merits without recourse to antitrust weaponization for the patent objectives.

However, the "new Madison" approach, devised by the DOJ's Antitrust Division, was short-lived. Patent hostility resurfaced in the age of new antitrust populism as Neo-Brandeisians took power. Intellectual and tangible property rights are barriers to competition in the Neo-Brandeisian conception of free and open competition in which the dystopian model of perfectly competitive markets predominates anachronistically. In April 2021, the division quietly "reclassified" the 2020 Supplement

153 Makan Delrahim, *The 'New Madison' Approach To Antitrust And Intellectual Property Law*, 1 J.L. & INNOVATION 1, 1–15 (2019).
154 *Id*. (noting that "in recent months I have found inspiration in this history and Madison's dogged perseverance in favor of strong patent protections—a view that stood at odds with much of the received wisdom and practice of the day.").
155 *Id.* at 5–6.
156 *See* Makan Delrahim, *The Long Run: Maximizing Innovation Incentives Through Advocacy and Enforcement*, Remarks as Prepared for the LeadershIP Conference 6–10 (Apr. 10, 2018), https://www.justice.gov/opa/speech/file/1050956/download; Makan Delrahim, *The 'New Madison' Approach To Antitrust And Intellectual Property Law*, 1 J.L. & INNOVATION 1, 1–15 (2019).

as mere "advocacy" rather than formal guidance. Such reclassification, a rare move for the division, defanged the 2020 Supplement and reinstated the 2015 BRL as the relevant authority in support of weakening and circumscribing SEP holders' rights.[157]

IV.3. Toward a "New Schumpeterian Approach" to Antitrust-IPRs

In Schumpeterian tradition, monopolies are neither good nor bad. Monopolistic competition is a dynamic competition that best propels innovation and growth. Monopolistic "privileges" via IPRs protection underpin the process of creative destruction, which is central to prosperity.[158] A Schumpeterian approach embraces the taxonomy outlined above, as corporate scale and property lever are both instruments of innovation. Indeed, strong protection of IPRs is necessary since corporate scale leads to innovation. Joseph Schumpeter made this clear when he acknowledged that IPRs are essential for innovation and that this is widely accepted. Still, too often, ideas discount the importance of corporate scale in fostering innovation:

> [I]t becomes necessary to resort to such protecting devices as patents or temporary secrecy of processes or, in some cases, long-period contracts secured in advance. But these protecting devices which most economists accept as normal elements of rational management are only special cases of a larger class comprising many others which most economists condemn. However, they do not differ fundamentally from the recognized ones.[159]

In other words, strong protection of IPRs and large-scale enterprises drives innovations because they can create market" monopolies." The Schumpeterian perspective, which emphasizes how businesses can appropriate innovation returns through integration or market exchange, is reflected in the taxonomy above. As a result, the Schumpeterian approach to IP and antitrust has many policy ramifications. Patent holders do not necessarily possess market power. This is also true for SEP-holders; they do not have a market monopoly but merely an intellectual monopoly, like any other IPR owner, to whom the property rule should apply. Accordingly, it is clear that:

> There should not be a presumption of either market power or monopolization by companies with SEPs. The technologies provided by SEP holders make technology standards feasible. Technology standards do not call for heightened antitrust scrutiny of SEP license agreements.[160]

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157 On the BRL being a legal authority for courts, *see* Matsushita Elec. Indus. Co. v. Cinram Int'l, Inc., 299 F. Supp. 2d 370, 379 (D. Del. 2004) (granting summary judgment on antitrust claims in part because court was "strongly persuaded" by the Antitrust Division's BRL which stated the Division's intention not to seek enforcement action against patent pool at issue).

158 *See also* Giles S. Rich, *Are Letters Patent Grants of Monopoly?*, 15 W. NEW ENG. L. REV. 239, 251 (1993)

> A monopoly, in the broad sense of the term, is neither good nor bad. It is simply power which can be put to good or bad uses. The patent laws are one way of putting this power to a good use for the overall advantage of society. Unless the grant of a patent gives some kind of economic power to the patentee that he or she would not otherwise have, the patent system would not work.

159 JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 88 (Taylor & Francis, 2003) (1943).

160 David F. Spulber, *Antitrust and Innovation Competition*, 11 J. ANTITRUST ENFORCEMENT 1, 40 (2022).

Since evidence of market power should neither be presumed nor condemned, the decoupling of antitrust and IPRs should result in patent disputes (including SEP disputes) being resolved exclusively by patent laws, rather than by the excessive use of antitrust laws.[161] In the first *United Shoe* case, Justice McKenna stated that "a patentee is given rights to his device, but he is given no power to force it on the world." To paraphrase McKenna, if patentees are given no power to force their inventions worldwide, implementers will have no power to force patented inventions into their world. The property rule applies: consent and injunctive reliefs are existential to IPRs.

The Schumpeterian approach prioritizes dynamic gains over allocative inefficiency. As Carrier rightly notes, "the consensus among economists since Schumpeter is that the gains achieved from innovative efficiencies dwarf those derived from maximizing allocative efficiency and that innovation is the most important factor in the growth of the economy." Therefore, an innovation-first policy would prioritize the active encouragement of innovation over the redistributive goal for atomistic competition with free entry and an absence of asset appropriability, because the dynamic gains from innovation are much more significant (even though they are currently unseen) than any static gains from increased competition. In other words, innovation should be taken seriously as a matter of law and policy enforcement, strengthening IPR protection trumps, and strengthening antitrust assertiveness. The prevalence of IPRs, considering antitrust concerns, has multiple implications and normative suggestions. The chief among these is how agencies and courts approach the enforceability of patent rights in the context of licensing standard essential patents (SEPs).

There is a need for "a new Schumpeterian approach" toward the interactions between antitrust and IPRs in general, and toward SEP holders' rights in particular. A Schumpeterian approach would fully acknowledge the adequacy of the property rule to regulate F/RAND negotiations because of the fundamental need for SEP holders to retain the appropriate profits from innovations: The intellectual monopolies derived from SEPs necessitate the right to exclude. Consequently, a Schumpeterian approach would fully reinstate SEP holders' rights to be free from trespass and thus access injunctive relief. In technical parlance, it appears that "holdouts" problems (when implementers refuse to negotiate in good faith with the SEP-holder) arise more than "holdups" problems (when a SEP-holder refuses to license in good faith a SEP).[162]

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161 Such unfortunate presumption of market power nevertheless remains powerful in antitrust policy. *See* United States v. Lowe's Inc., 371 U.S. 38, 45 (1962). More recently, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, FEDERAL TRADE COMMISSION 22–23 (March 2011), https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf. However, *see Antitrust Guidelines for the Licensing of Intellectual Property*, DEPARTMENT OF JUSTICE (DOJ) AND FEDERAL TRADE COMMISSION (FTC) 2 (12 January 2017), https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf (stating that the IP Guidelines "do not presume that intellectual property creates market power in the antitrust context").

162 *See*, for instance, Richard E. Epstein and Kayvan B. Naroozi, *Why Incentives for 'Patent Holdout' Threaten to Dismantle FRAND, and Why It Matters*, 32 BERKELEY TECHNOLOGY L.J. 1381 (2017). See the recent cases, Unwired Panel International Ltd v. Huawei Technologies Co. Ltd (UKSC 37, August 26, 2020); Tagivan (MPEG-LA) v. Huawei, 4a O 17.17 (District Court of Dusseldorf, November 9, 2018); Case No. KZR 36/17, Federal Court of Justice

The Schumpeterian approach preserves the benefits of the Madison approach. A Schumpeterian approach reinstates the short-lived "new Madison approach" of Makan Delrahim and elaborates further with a more precise definition of what constitutes good faith in patent negotiations. In this regard, the 2021 Draft Policy Statement on licensing negotiations and remedies for SEPs subject to F/RAND commitments are the wrong approaches at the wrong time.[163] Because it represented the right approach and because policy swings without evidence must be avoided, the 2019 Policy Statement needed clarifications. It was not a repeal, contrary to what President Biden's executive order suggested. The Agencies should provide an alternative statement that builds upon the 2019 policy statement to clarify the definition of a "willing licensee" as part of FRAND negotiations.

When federal agencies once sought to remove the limits of the remedies available in SEP disputes, it was a favorable policy that prioritized innovation over the static competition, encouraging the use of the property rule over the liability rule in SEP disputes and therefore encouraging innovation incentives for innovators.[164] For, "antitrust policy should not be used to regulate patent license negotiations, including patents that are SEPs subject to FRAND commitments."[165] Furthermore, there is no presumption of market power for patents (including SEP).[166] Because rights might be, intellectual property rights ought to be their owners or the ability to exclude trespassers and infringers. Intellectual monopolies do not provide market power but offer the necessary appropriability for innovation and economic progress.[167] Therefore, SEP holders (however contracting negotiations they have entered) can prevent freeriding over their patented inventions. Otherwise, the deterring effect will cause a more significant loss to society than any potential benefit. Compulsory licensing and the denial of veto power via injunctive relief bring the culture closer to the tragedy of the uncommons.

(Bundesgerichtshof, May 5, 2020); Phillips v. Wike, C/09/511922/HA ZA 16-623 (Court of the Hague, July 2, 2019); Core Wireless Licensing Sarl v. LEG Elecs., Inc., No 2:14-CV-912-JRG, 2016 WL 10749825 (E.D. Tex. November 2, 2016).

163 *See* DOJ, USPTO & Nat'l Inst. of Standards & Tech., Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments (Dec. 6, 2021), https://www.regulations.gov/docket/ATR-2021-0001.

164 See DOJ, USPTO & Nat'l Inst. of Standards & Tech., Policy Statement on Remedies for Standards-Essential Patents Subject To Voluntary F/RAND Commitments (Dec. 19, 2019), https://www.justice.gov/atr/page/file/1228016/download. The 2021 Draft Policy Statement reverses course by reverting to the liability rule in solving SEP disputes at the expense of the innovation considerations. *See* DOJ, USPTO & Nat'l Inst. of Standards & Tech., Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments (Dec. 6, 2021), https://www.regulations.gov/docket/ATR-2021-0001.

165 David F. Spulber, *Antitrust and Innovation Competition*, 11 JOURNAL OF ANTITRUST ENFORCEMENT 1, 41 (2022).

166 This is actually in line with the IP Guidelines of 2017 which stated that federal agencies "do not presume that intellectual property creates market power in the antitrust context." *See* Department of Justice (DOJ) and FTC, Antitrust Guidelines for the Licensing of Intellectual Property 2 (Jan. 12, 2017), https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf.

167 *See* Maureen K. Ohlhausen, *What Are We Talking About When We Talk About Antitrust?*, FTC (Sept. 22, 2016), 3, https://www.ftc.gov/system/files/documents/public_statements/985823/concurrence_dinner_speech_092216.pdf ("Simply condemning a high price, a refusal to deal, or the use of a SEP without showing harm to supply- and demand-side limits on market power, however, is not antitrust. It is regulatory action meant to reengineer market outcomes to reflect enforcers' preferences.").

A new Schumpeterian approach recognizes that legal clarity constitutes the optimal incentive for innovation and the distribution of inventions. A Schumpeterian approach would elucidate the principles of good faith in F/RAND negotiations, building on the German principle of good faith. The regulatory framework applicable to F/RAND negotiations with SEP holders is in dire need of increased legal clarity. FTC Chair Edith Ramirez argued in 2014 that:

> Additional clarity on a framework for determining FRAND royalties would benefit industry stakeholders and consumers alike…. Greater clarity on the terms of a FRAND license will likely facilitate private negotiations and limit the need to seek a third-party determination of a FRAND rate.[168]

Despite policy efforts, this remains true today: the lack of clarity stifles innovation by deterring patent holders from engaging with SSOs and providing leniency for patent infringement.[169] The Schumpeterian approach to antitrust and IPRs, especially regarding SEP disputes, builds on the German notion of "good faith." The strong protection of IPRs for patent holders in general and SEP holders, in particular, is necessarily conditional on the bona fide attitude of the SEP holders in the F/RAND negotiations and commitments.[170] Such a bona fide suggests that SEP-holders and implementers must behave in good faith.[171] Whenever SEP holders act in good faith, the injunctive relief of the property rule should remain available.

The recent approach from federal agencies suggests that injunctive relief for SEP-holders becomes unavailable whenever a potential licensee "agrees to be bound by an adjudicated rate determined by a neutral decision-maker; [or] reserves the right to challenge the validity, enforceability, or essentiality of the standards-essential patent in the context of an arbitration or F/RAND determination; or reserves the right to challenge the validity or essentiality of a patent after agreeing to a license."[172] Unfortunately, this suggests the preeminence of the liability rule over the property rule: SEP holders will effectively lose their ability to enforce their rights through injunctive relief. Indeed, a potential licensee must only challenge the "essentiality" of the SEP to be legally free from possible injunctions,

168 Edith Ramirez, Chairwoman, Fed. Trade Comm'n, Standard-Essential Patents and Licensing: An Antitrust Enforcement Perspective, Address at 8th Annual Global Antitrust Enforcement Symposium, Georgetown University Law Center 7 (Sept. 10, 2014), http://www.ftc.gov/system/files/documents/public statements/582451/140915georgetownlaw.pdf.

169 For, failure to comply with a licensing commitment made pursuant to any SSO patent policy would trigger antitrust liability, therefore deterring patent holders to engage with SSOs in the first place and potentially prefer trade secrets and bilateral licensing agreements, *see* Bill Baer, International Antitrust Enforcement: Progress Made; Work To Be Done (Sept. 12, 2014), http://www.justice.gov/atr/public/speeches/308592.pdf.

170 Good faith is closely related to the notion of "best efforts' clause in contracts. *See* Charles J. Goetz and Robert E. Scott, *Principles of Relational Contracts*, 67 VA. L. REV. 1089, 1114–17 (1981).

171 *See*, for instance, DOJ, USPTO & Nat'l Inst. of Standards & Tech., Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments (Dec. 6, 2021), https://www.regulations.gov/docket/ATR-2021-0001 ("Good-faith negotiation that leads to widespread and efficient licensing between SEP holders and those who seek to implement technologies subject to F/RAND commitments helps to promote technology innovation, further consumer choice, and enable industry competitiveness")

172 *Id.* at 9.

despite patent infringements. Federal agencies should place higher standards on a potential license's "good faith"; otherwise, opportunistic holdouts will stifle innovation.

Thus, the question arises: what does "good faith" mean in the context of F/RAND commitments? The German legal tradition can help enrich the Schumpeterian approach by reinforcing the patent rights of patent (and SEP) holders.[173] The "good faith" principle applied to SEP-holders would come close to the *Huawei v. ZTE* case finding. In this decision, the Court of Justice of the European Union considered that the SEP holder does not abuse its market position by seeking an injunction.[174] Injunctive reliefs are available as long as SEP-holders notify alleged infringers of the violation and alleged infringers have agreed to conclude a licensing agreement on FRAND terms. Alleged infringers must respond to the SEP-holder's offer in good faith without delaying tactics. Good faith must allow the property rule to be fully invokable for SEP holders; otherwise, the imbalance of bargaining power between SEP holders and implementers will deter innovation and stifle investments, thus leading to the tragedy of the uncommons.

With the Dutch Supreme Court's decisions on *Philips v Wiko* and *Philips v Hoyng*, the Netherlands reinstated property rule as a remedy to F/RAND negotiations, becoming a SEP-holder-friendly jurisdiction.[175] Following the *Huawei* and *Philips* decisions, Europe appears more committed to protecting innovation by securing innovators' rights to have their patents governed by the property rule rather than a weaker liability rule, where mere damages, not injunctions, are remedies to patent trespasses. Such a patent trespass in bad faith inevitably leads to the tragedy of the uncommons, where innovations and investments do not materialize because of the deterrence effect of the liability rule over the property rule in governing IPRs.

The United States should find inspiration in these decisions and reconsider the costs associated with the current policy approach, which needs to pay more attention to the considerable expenses of holdouts where implementers can behave in bad faith without the credible risks of injunctive relief against patent trespass.

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173 *See*, more specifically, Spyros Makris, Haris Tsilikas, *Standard Essential Patents and Injunctions: The Key Role of Good Faith in Major Jurisdictions*, IEEE COMMUNICATIONS STANDARDS MAGAZINE 124–28 (2021) ("Both sides of licensing negotiations have to act in good faith, either to have access to injunctive relief (SEP holders) or be able to fend off respective court measures (standards implementers)."); Peter Gorg Picht, *The ECJ rules on standard-essential patents: thoughts and issues post-Huawei*, 37 EUROPEAN COMPETITION L. REV. 365, 365–75 (2016) (noting that "Huawei conduct requirements might apply even absent market dominance based on the principle of good faith as laid down in s.242 German Civil Code (GCC)"); Heike Schweitzer, *Standard-essential patents and abusive patent injunctions – the interplay between German courts and the CJEU*, in ABUSE OF DOMINANCE IN EU COMPETITION LAW 68–96 (Pier L. Parcu, Giorgio Monti, Marco Botta, eds., 2017); Torsten Korber, *Abuse of a dominant position by legal actions of owners of standard-essential patents: Huawei Technologies Co. Ltd v. ZTE Corp.,* 53 COMMON MARKET L. REV. 1107, 1107–20 (2016).

174 Case C-170/13 Huawei Technologies Co. Ltd v. ZTE Corp. and ZTE Deutschland GmbH [2015] EU:C:2015:477.

175 *See* Wiko SAS v Royal Phillips NV, February 25, 2022, HR 20/01160; Wiko SAS v Royal Phillips NV, February 25, 2022, HR 19/04503.

V. Conclusion

The corporate scale and property lever are the instruments of innovation. Because innovation is such a beneficial outcome for society, policymakers must endorse an innovation-first policy to avoid the tragedy of the uncommons–namely, the non-emergence of innovation and growth due to poorly protected IPRs and an assault on the corporate scale. Policymakers need to embrace the "New Schumpeterian Approach" to antitrust and IP, which reinstates the role of corporate scale in innovation and the need to protect IPRs as levers for innovation. The new Schumpeterian approach, specifically IPRs and SEPs, would first include the policy approach of innovation. Such an approach would relativize antitrust concerns over innovation concerns since the right to innovate is a constitutionally protected right and a boon that vastly benefits society more than the innovators themselves. When IPRs holders must assert their rights, intellectual property and contract laws, not antitrust, are best suited to solve disputes and to encourage innovation.