INFORMATION AND INEFFICIENCY: ARE TRADE SECRETS MAKING MARKETS INEFFICIENT?

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Abstract:

This article-in-progress takes up a provocative question: Does contemporary trade secrecy law distort markets? Its tentative hypothesis is that trade secrecy doctrine may require reform if the benefits of intellectual property (IP) more broadly are to be protected.

The article explores dysfunctions of contemporary trade secrecy through engagement with dominant, law-and-economics-based justifications for IP. The title puns on Harold Demsetz's influential 1969 essay, *Information and Efficiency: Another Viewpoint*. Demsetz and other economists propounded IP—rights in information—not only for its incentives to innovate but also because IP permits markets to generate and transmit valuable *information about the value of information*, thus encouraging information producers to focus on the kinds of information that people need and want most. In a market economy with IP, we learn what kinds of information have the most social value from watching the market price IP-protected goods and services that embody that information—software, self-driving cars, medical devices, etc. The price signal reveals something about the fundamental value of the embodied information and so informs R&D-intensive companies and investors where to focus future information production. Demsetz contrasted this elegant efficiency with the (supposed) inefficiency of centralized government planning, which can guess wrong as to what kinds of information will prove most valuable.

On the Demsetzian account, trade secrecy's current form should perhaps alarm us. Today's trade secrecy—expanded in scope beyond its mid-20th-century boundaries—may injure efficient markets in at least two ways. First, trade secrecy throttles flows of information on technological goods' and services' properties: their utility, versatility, reliability, safety, discriminatory effects, and so on. Without understanding these properties, we cannot understand technology's value. This

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article will document how secrecy of the properties of technological goods and services can thwart efforts by even the most sophisticated "stakeholders" of capitalism—investors, competitors, and so on—to make the myriad rational, arms-length decisions that are the hallmark of a healthy market economy. Robust research and negotiation are increasingly difficult, distorting transactions and prices. Second, trade secrecy can obscure even prices themselves—per Demsetz and other economists, the single most sacred, most revealing scrap of information about the value of information and future information production. Secrecy of properties and secrecy of price together render increasingly difficult—increasingly *inefficient*—the efforts of would-be competitors and investors to know what kinds of information the dysfunctional "market" wants more of.

The article concludes with some prescriptions for doctrinal reform. These prescriptions include recommendations to restrict trade secrecy claims in the prices and properties of goods and services and in the prices of patents and other intellectual property rights. Such restrictions would return trade secrecy to its traditional mid-20th-century borders.

Table of Contents

Introduction

This very early article-in-progress stems from a question that has been bugging me for years: How exactly does trade secrecy, a doctrine that on its face protects and *hinders* flows of scientific and technical information, manage to *promote* the progress of science?[1]

In thoughtful analyses of trade secrecy theory and doctrine—some more skeptical of trade secrecy, some more supportive—a number of scholars have grappled with this question.[2] Mark Lemley, for example, has argued persuasively that trade secrecy law helps to discourage inventive companies from being even more secretive than they currently are, and so effectively promotes disclosure of useful technical information.[3] However, to my knowledge, past analyses have thought through trade secrecy's role in shaping flows of information primarily from the perspective of the trade secret holder and other entities similarly situated—typically companies that come up with valuable secret knowledge after undertaking research and development or some other labor of information production. In other words, in past scholarship, the question of whether trade secrecy "works" is asked and answered primarily from the perspectives of information producers, the entities we incentivize to innovate and produce more information.

That's well and good—these companies' perspectives matters enormously! But I have, in recent writing, come to think more about other relevant "stakeholders" in intellectual property law who are not themselves information producers, including end users and investors.[4] Does intellectual property law work for *them*?[5]

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[1] Perhaps I should say "science and the useful arts," to borrow language from the U.S. Constitution.

[2] Bone, Lemley, Fromer, Landes & Posner, Sandeen, Levine, many more TK….

[3] Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61 Stanford Law Review 311 (2008).

[4] *See* Christopher J. Morten*, The Second Patent Bargain,* 111 IOWA L. REV. (forthcoming). I credit Jessica Litman's and Clarisa Long's work on readers' copyright and patents' signaling value for awakening me to the ways in which intellectual property law can be and sometimes is already oriented around goals other than simple maximization of innovation and creativity across society. *See* Jessica D. Litman, *The Public Domain*, 39 Emory L. J. 965 (1990); Jessica D. Litman, *Readers' Copyright*, 58(2) J. Copyright Society 325 (2011) (emphasizing how copyright law serves readers); Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625 (2002) (emphasizing how patent law serves investors). I thank Gautam Hans for pointing me to Litman's writing on this topic.

[5] I mean, does intellectual property law work for them in ways *besides* simply maximizing overall social welfare. I wish not to reduce users, investors, and so on to passive recipients of whatever

In connection with my efforts to understand better why we have intellectual property and why it works the way it does, I've visited and revisited a wealth of writing from the 20th century. One piece that struck me, and still does, is Harold Demsetz's *Information and Efficiency: Another Viewpoint*,[6] an essay I think I first read as a 2L in patent law many years ago. On rereading the essay in 2025, I am struck by how Demsetz posited at least two distinct utilitarian, law-and-economics-based justifications for intellectual property law—that is, for property-like rights in information. The first justification is the one we all know best: intellectual property rights permit producers of valuable information to internalize some of the value of that information, protecting them from unchecked free-riding and thus incentivizing more information production. This justification we can call IP's "incentive effect." The second one is a bit less famous: Intellectual property rights permit markets to generate and transmit *valuable information about the value of information*, thus encouraging information producers as a whole to focus activity on the kinds of information society needs and wants most. Demsetz argues information production is governed best by "a private property system that reduces the cost of contracting and raises the cost of free-loading while, at the same time, [] provid[ing] incentives *and guidance* for investment in producing information."[7]

Yochai Benkler calls Demsetz's second justification for intellectual property IP's "signaling effect," "whereby consumers signal producers what innovations or information goods are most valuable."[8] To summarize the basic gist of the argument articulated by Demsetz and other economists: In a market economy with intellectual property rights, we not only incentivize information production; we also learn what kinds of information have the most social value from watching the market price IP-protected goods and services that embody that information—software, self-driving cars, solar panels, vaccines, and everything else. Consumers figure out which technologies they value and which they don't; consumers negotiate prices[9] that reflect what they value; prices move accordingly; and so R&D-intensive companies and their investors dynamically and efficiently focus future information production on where society needs it most.

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benefits the holders of intellectual property create for society at large but instead to think of them as distinct interest groups with distinct goals.

[6] Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & Econ 1 (1969).

[7] *Id.* at 14 (emphasis added).

[8] Yochai Benkler, *Intellectual property and the organization of information production*, International Review of Law and Economics, Volume 22, Issue 1, 2002.

[9] Or agree to pay or refuse to pay prices demanded by sellers.

As a bonus, with intellectual property, information producers and their investors can learn even more about what kinds of information production society values most by watching the market price IP rights themselves. Prices paid for patents and copyrights, and licenses to the same, reveal something about the social value of the technologies and information protected by these legal rights. Per Daniel Spulber,[10]

> Prices in the market for inventions guide economic decisions of inventors, innovators, producers, investors, and consumers. Market prices for inventions convey signals about seller cost and buyer willingness to pay. Market prices for inventions thus promote innovation and competition and increase both static and dynamic efficiencies.

This argument builds, obviously and explicitly, on those made by Friedrich Hayek[11] and other economists that posit markets as "information processors" or "information computers" and propound the benefits of not just of intellectual property but propertization, market ordering, and capitalism in general. And Demsetz is just one of a number of economists, many affiliated in various ways with the University of Chicago, who have advocated the signaling effect as a justification for the perpetuation or expansion of intellectual property rights in the United States. I don't mean to give Demsetz outsized credit; other important exponents of IP's signaling effect and its alleged benefits include Kenneth Dam, Edmund Kitch, F. Scott Kieff, and Daniel Spulber.[12] In this article I highlight Demsetz not because his thinking is singular but because it is representative and influential, as I will show below.[13] (And, I admit, because I want the title of this article to pun on the title of his famous article.)

Demsetz and his fellow travelers frequently contrasted the (supposed) elegant efficiency of intellectual property's signaling effect with the (supposed) inefficiency of centralized government planning, under state socialism and other statist systems, which often guess wrong as to what kind information will prove most valuable to

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[10] Daniel Spulber, *Should Contests Replace Patents* (JPTOS) 2015 at 696.

[11] F.A. Hayek, *The Use of Knowledge in Society*, 35 Am. Econ. Rev. 519 (1945); Friedrich A. Hayek, translation by Marcellus S. Snow, *Competition as a Discovery Procedure,5.3 Q.* J. AUSTRIAN ECON. 9 (2002) (presenting a translation from German of Friedrich A. Hayek's *"Der* Wenbewerb als Entdeckungsverfahren," a 1968 lecture sponsored by the Institut fl/r Weltwirtschaft at the University of Kiel).

[12] *See infra* Part I.

[13] *Id.*

society. (Think of the ongoing criticism the National Institutes of Health, National Science Foundation, and other government laboratories and grantors face for "wasting" taxpayer money on research that yields no obvious breakthroughs.) Demsetz wrote,[14]

> If, somehow, we knew how much and what types of information it would be desirable to produce, then we could administer production independently of the distribution of any given stock of information. But we do not know these things.

As I'll try to show in Part I, Demsetz's theory of IP's signaling effect had a significant impact on the development of American intellectual property law and policy, especially patent law. For example, in the 1970s and 1980s, the theory of the signaling effect helped turn the U.S. government away from prizes, grants, research in government laboratories, and other non-IP-oriented modes of scientific and technical information production and toward patenting.

During the same decades and in the decades that followed, up through the 2010s, trade secrecy doctrine also underwent substantial change—codification, expansion in scope and strength, "elevation" into federal statute, membership in the category of rights in information deemed "intellectual property," and more. And yet—as I'll try to show in Part II—the arguments driving these changes in trade secrecy doctrine focused not on the signaling effect but on trade secrets' supposed incentive effect.

As far as I can tell, nobody has written a paper examining whether trade secrets serve or disserve IP's supposed signaling effect. This article will attempt to fill that gap.

My hypothesis, based on admittedly incomplete research, is that today's trade secrecy doctrine—expanded in scope substantially beyond the boundaries that existed in the 1960s and 70s,[15] when Demsetz and other leading economists theorized IP—not only fails to produce efficient markets and reliable signals about the value of information production but actively *injures* markets and their informational signals. Today's trade secrecy does so in at least two ways. First, trade secrecy stifles flows of information on informational goods' and services' value. As

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[14] Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & Econ 1, 11 (1969).

[15] *See* Part II.

past work has described and theorized,[16] trade secrecy throttles flows of information on goods' and services' properties—their utility, versatility, reliability, safety, discriminatory effects, and so on—and thereby thwarts robust government regulation, journalistic oversight, consumer claims, and more. This article builds on past work by showing how trade secrecy thwarts not just regulators, journalists, and everyday consumers but even the most sophisticated "stakeholders" of capitalism, as they struggle to make the myriad rational, arms-length decisions that are the hallmark of a healthy market economy. Robust research and negotiation are increasingly difficult; consumer and capital markets are thereby distorted and produce unreliable price signals and other information. Second, claims of trade secrecy can block even the sacred price signal itself[17]—supposedly, per Demsetz and his school, the single most revealing scrap of information about the value of information and future information production. My hypothesis is that trade-secrecy-fueled secrecy of properties and of price render increasingly impossible—increasingly *inefficient*—the efforts of would-be competitors and investors to know what kinds of information production the dysfunctional "market" wants more of.

Before turning to the body of the article, I will offer a few remarks on what this article's goals are, and what this article is and is not.

First, this article is not intended as my own endorsement of the signaling effect as a justification for intellectual property law. In fact, for whatever it's worth, I myself am not sure that patents, copyrights, and other "core" doctrines of intellectual property law generally produce a socially valuable signaling effect that helps to organize information production across American or global society. Nor am I convinced that whatever signaling effect they do produce makes intellectual property a more efficient (let alone just) system for organizing information production than government-run prizes, government grants, research in government laboratories, and other "nanny state" solutions. But these topics have been taken up at some length by wiser minds than mine,[18] and in any event I think they are tangential to the goals of

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[16] *See, e.g.*, Jamillah Bowman Williams, *Diversity as a Trade Secret*, 107 Georgetown L. Rev. 1685 (2019); Rory Van Loo, *Regulatory Monitors: Policing Firms in the Compliance Era*, 119 Columbia L. Rev. 369 (2019); Sonia K. Katyal, *Private Accountability in the Age of Artificial Intelligence*, 66 UCLA L. REV. 54; Charles Tait Graves & Sonia Katyal, *From Trade Secrecy to Seclusion*, 109 Georgetown L.J. 1337 (2021); Christopher J. Morten, *Publicizing Corporate Secrets*, 171 U. Penn. L. Rev. 1319 (2023); Hannah Bloch-Wehba, *The Promise and Perils of Tech Whistleblowing*, 118 Nw. U. L. Rev. 1503 (2024); [add also Levine on voting machines, the environment and more, Mary Lyndon, analysis of trade secrecy's obscuration of environmental harms].

[17] *See* Part II. Key references here include Feldman & Graves, Bridy. Also examples in Part III.

[18] Hemel & Ouellette, Mirowski, Nik Khah, Dean Baker, Jamie Love, Kapczynski, Spulber, Fisher, many more to cite on patents versus prizes debate, intellectual property theory broadly….

this article. What this article intends to do is to take Demsetzian law and economics seriously on its own terms—to accept Demsetz's premise that intellectual property's supposed signaling effect is both real and important—and then examine whether trade secrets actually succeed on those terms. A goal of this paper is to encourage scholars, policymakers, and others who affiliate with the law and economics movement to think critically about the effects of today's trade secrecy doctrine, and perhaps to join me and others outside the movement in advocating for reform of that doctrine.

Second, this article will sidestep the important and contentious question of whether trade secrets are truly "intellectual property" at all or are instead rights grounded in tort law (or some other foundation).[19] This question has theoretical, doctrinal, and historical dimensions, all of which are fascinating but again tangential to this article. It seems to me that regardless of whether trade secrets are "truly" intellectual property, anyone interested in intellectual property law and its goals—or anyone at least interested in *patent* law and its goals—should be interested in trade secrets to the extent trade secrets may be thwarting those goals.

Third, this article will not critique trade secrecy law from perspectives *outside* intellectual property theory.[20] This is not an article about whether trade secrecy doctrine has come to frustrate other legal doctrines, values, or goals, such as free expression, a just criminal legal system, an effective news media, a healthy environment, an effective regulatory state, or democratically accountable municipal, state, and federal governments. Other scholars and articles have undertaken these vitally important analyses.[21] This article is instead squarely an "endogenous" intellectual property paper; it asks whether trade secrecy law succeeds or fails *as intellectual property*, from the perspectives of the stakeholders centered in dominant theories of American intellectual property law—inventive companies, their competitors, their investors, and their customers. Does trade secrecy do the things we expect intellectual property to do, or does it fail to do those things (and perhaps undermine the benefits of patents in the process)?

The article will proceed in four Parts. Part I will survey Demsetzian theory of intellectual property and its benefits and that theory's impact on the intellectual property doctrine we have today. Part I.A will summarize the theory, as propounded

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[19] *See, e.g.*, Sandeen [Out of Thin Air, etc.]; Lemley; Graves; Bone; Risch; Seaman; Rowe; Murphy; others!…

[20] Though I am deeply sympathetic to them!

[21] *See supra* [note including Bowman Williams, Van Loo, etc.]. *See also* work from Baranetsky, Ram, Wexler, others…. [collect exogenous critiques of trade secrecy].

by leading thinkers of the law and economics movement and the Chicago School, with particular focus on intellectual property's "signaling effect" and that effect's supposed ability to organize, efficiently, information production. Part I.B will present a brief history of the large influence of that theory on U.S. law and policy (despite some critics). Part I.B will document how Demsetzian theory was mobilized and internalized throughout the second half of the 20th century to propel and explain the codification and expansion of intellectual property rights, especially patent rights.

Part II will then turn to trade secrecy specifically. Part II will offer a brief history of trade secrecy doctrine and theory, one that emphasizes the fact that trade secrecy's codification and expansion happened substantially later (in the 1980s through the 2010s) and—critically—on distinct theoretical bases that omit Demsetz's signaling effect. Part II will also summarize how trade secrecy doctrine works today—what kinds of information it protects, and how.

Part III will then get to the heart of the matter and test the article's central animating question: Is trade secrecy law actively hindering the signaling effect created by the rest of intellectual property, and thus presumptively *in*efficient from a law and economics perspective? My tentative hypothesis is… yes. My research here is very much a work in progress, but right now I expect the bulk of Part III will consist of three industry-specific case studies—three industrial sectors in which I fear various capital and consumer markets are being distorted and hindered by claims of trade secrecy. Part III.A will explore self-driving cars as a first case study: the secretive companies who develop and manufacture them; the aggressive claims of trade secrecy that have hindered generation and dissemination on self-driving cars' safety, reliability, and desirability to consumers; and the rather inefficient-seeming boom-and-bust cycle of investment in self-driving cars that has transpired, perhaps as a consequence. Part III.B will explore generative "artificial intelligence" as a second case study: the secretive companies who develop, deploy, and seek to monetize generative AI products and services; the aggressive claims of trade secrecy that have hindered generation and dissemination on generative AI's safety, reliability, and desirability to consumers; and the enormous influx of investment into generative AI that may be explained by the fund-seeking companies' ability to hide their true costs, harms, revenues, and prospects through those claims of trade secrecy. Part III.C will offer a third case study that turns from capital markets to consumer markets and from computer technologies to health care. In health care, I fear that consumers' and health professionals' demand for various health technologies and interventions—drugs, vaccines, medical devices, surgeries, and so on—is today increasingly distorted by assertions of trade secrecy in information that could, if disseminated, support more rational consumer choices. Finally, Part III.D will step back from industry-specific case studies and take up a question pertinent to all fields of science and technology: Is trade secrecy, somewhat ironically, hindering liquid and efficient markets for selling and licensing U.S. patents? As Part I showed,

law and economics presupposes that patents promote efficient information production by, inter alia, signaling via their value the value of the technology they embody and cover, and yet patent valuation is arguably getting harder because trade secrecy shrouds information on patent valuation.

Part IV will offer some modest prescriptions. These prescriptions may include recommendations to restrict trade secrecy claims in the prices and properties of goods and services and in the prices of patents and other intellectual properties. Such restrictions would return trade secrecy to its traditional mid-20th-century borders.

[Part IV might also offer some inchoate thoughts on how one of the features that makes informational capitalism new, distinctive, and worrisome is its reliance on trade secrecy. Scholars of informational capitalism, including Cohen, Katyal, Pistor, Viljoen, and Kapczynski, have documented informational capitalism's dominant platforms and their fervor for trade secrecy (wielded in combination with contracts, managerial/neoliberal privacy law, and other legal tools). Perhaps part of what makes these companies so powerful, what makes them feel so troubling, and what makes them feel *different* from powerful companies of eras past is that they are actually distorting consumer and capital markets around themselves, breaking longstanding rules of capitalism to serve their own ends.]

I. A Brief Survey of the Theory of Intellectual Property's Signaling Effect and its Impact on Doctrine

A. Demsetz's Theory of the Signaling Effect

[I will summarize Demsetz's 1969 essay, *Information and Efficiency*, and some of his other influential writing on IP (e.g., *Toward a Theory of Property Rights* (1967), *The Private Production of Public Goods* (1970), *Barriers to Entry* (1980)). I will try to make his theory of the signaling effect clear to readers. I will offer brief historical context for Demsetz's work, including Demsetz's challenge to Kenneth Arrow[22] (a qualified proponent of coordinated central-government planning and funding of science and technology). I will also credit other thinkers who developed and elaborated the theory of a signaling effect to organize information production—Kenneth Dam, Edmund Kitch, F. Scott Kieff, Richard Epstein, William Landes & Richard Posner, Paul Goldstein, Daniel Spulber.]

[22] Kenneth J. Arrow, Economic Welfare and the Allocation of Resources for Invention, in The Rate and Direction of Inventive Activity, 609-25 (1962).

[Consider also helping readers understand the theory of the signaling effect by presenting critiques of law and economics and the Chicago School from outside the movement. E.g., Mirowski,[23] Nik-Khah, Fisher,[24] Frischmann,[25] Kapczynski & Syed.[26]]

B. Theory's Impact on American Intellectual Property Law

[I think it worth dedicating a few thousand words of the article to document the *impact* of the theory of intellectual property's signaling effect on American legal doctrine, especially patent. Congress, the Supreme Court, the Federal Circuit, antitrust enforcers within the Federal Trade Commission and Department of Justice, and other influential authorities have largely agreed with Demsetz's premise that intellectual property rights—patents especially—are the most efficient way to organize information production in science and technology.[27] See, for example, the

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[23] Lave R, Mirowski P, Randalls S (2010) Introduction: STS and neoliberal science. Social Studies of Science 40(5): 659–675 at 662 (paraphrasing Demsetz's view to be that "[n]o human being (and no state) can ever measure up to the ability of the abstract marketplace to convey existing ideas and to summon forth further innovation").

[24] William Fisher, 2001, 'Theories of Intellectual Property', in S. Munzer (ed.), New Essays in the Legal and Political Theory of Property, Cambridge: CUP. ("Many years ago, Harold Demsetz argued that the copyright and patent systems play the important roles of letting potential producers of intellectual products know what consumers want and thus channelling productive efforts in directions most likely to enhance consumer welfare.").

[25] Brett M. Frischmann, *Evaluating the Demsetzian Trend in Copyright Law*, 3 REV. L. & ECON. 649, 669 (2007). "As Demsetz (1970) argued in The Private Production of Public Goods, the price mechanism provides a signal to producers about where to direct their investments. Extending Demsetz's point to copyright, Paul Goldstein (1994:178-89) argued: "The logic of property rights dictates their extension into every corner in which people derive enjoyment and value from literary and artistic works. To stop short of these ends would deprive producers of the signals of consumer preference that trigger and direct their investments.""

[26] Amy Kapczynski & Talha Syed, The Continuum of Excludability and the Limits of Patents, 122 Yale L.J. 1900, 1904 (2013) ("The most influential theoretical account of the advantages of patents over these other institutional approaches can be traced to the influential work of Harold Demsetz. In a 1969 article, Demsetz suggested that patents are plausibly superior to more directly government-led strategies for generating innovations because markets utilize dispersed private information more effectively than government actors can. [citing *Information and Efficiency*] Because they link the magnitude and direction of innovation incentives to market prices, in other words, patents may be a better mechanism than reliance on government funding for ensuring that all truly valuable information goods—and only truly valuable information goods—are generated.")

[27] Key moments in legal history to consider summarizing in the article, in brief capsule form, in no particular order: (1) Giles Rich, a kind of proto-law & economics thinker, first co-writes the Patent Act of 1952, then becomes the federal judge with the strongest influence on the development of patent law. (2) Bayh-Dole, Stevenson-Wydler, and the Federal Technology Transfer Act (all 1980s), which in various ways discourage "inefficient" uncommercialized basic research and redirect federal money

Federal Circuit reasoning in 2016 that the reward a patent provides its owner "is inherently a *market* reward: 'it is one of the legal beauties of the system that what is given by the people through their government—the patent right—is valued automatically by what is given by the patentee. His *patent* has value directly related to the value of his *invention,* as determined in the marketplace.'" *Lexmark Int'l, Inc. v. Impression Prods., Inc.*, 816 F.3d 721, 760 (2016) (citing *In re Kirk,* 54 CCPA 1119, 376 F.2d 936, 964 (1967) (Rich, J., dissenting)), *rev'd and remanded on other grounds*, 581 U.S. 360, (2017).

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and energy toward obtaining patents that can then be transferred to market actors for commercialization. Characteristic quote from then-Senator Bob Dole in the legislative history of the Bayh-Dole Act, mirroring Demsetz's thinking about the inefficiencies of central government planning of information production: "'Why doesn't the Government engage in the development and marketing of [inventions it has funded]? The answer is that the Government has neither the financial resources nor the expertise to do." (3) Federal Courts Improvement Act of 1982 (creating the Federal Circuit). *See* Rochelle C. Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. Rev. 1 (1989). (4) Disputes over the optimal public policy around "non-practicing entities" that assert patents and copyrights, which have tended to settle on the consensus that at least some non-practicing entities are not merely tolerable but beneficial, because they create liquidity in the "market for inventions" and elucidate information on what various technologies are really worth. *See, e.g.*, Fed. Trade Comm'n, The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition 139 (2011) ("An important benefit of the patent system, in contrast to other methods of encouraging innovation, like direct prizes, is that it allows each invention to be valued directly through a market mechanism."). (5) Disputes over the proper interplay of antitrust and intellectual property law. As Mirowski, Merges, and other scholars have documented, antitrust enforcement against IP rights-holders declined in the 1970s, 80s, and 90s in part because of a then-growing consensus that aggressive monetization of intellectual property was "efficient" and interference with IP's normal operation (e.g., through compulsory licensing) must therefore be "inefficient." (6) Fights over patentability of business methods, especially during the 1990s, 2000s, and 2010s—*State Street*, *Bilski*, etc. Note that the Supreme Court ultimately held that business methods are not patentable, with some exceptions. Today we lump this debate in with related debate over patentability of abstract ideas, laws of nature, etc., but I may revisit scholarship, judicial reasoning, amicus briefing, etc. from the time—there's a distinct argument *against* patenting business methods, which is that patents on business methods could reduce the efficiency of the market itself by blocking or slowing flows of information essential to the signaling effect.

Key scholarship to cite on the influence of the supposed signaling effect on the development of American intellectual property doctrine: Mirowski, Science-Mart (2011) at 65 ("[A]round 1980, the neoliberals had chipped away at [opposing viewpoints] to such an extent that they got both the courts and the Congress to extent property rights to all that novel knowledge that was previously supposedly so hard to appropriate . . . .."), Nik-Khah, Sampat, Eisenberg, Arti K. Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 Nw. U. L. Rev. 77, 99 (1999) ("The view that the dominant purpose of property rights is not to spur invention but rather to spur efficient development and commercialization of invention has been very influential not only in technology transfer law but also in the case law."), Amy Kapczynski, Talha Syed, Yochai Benkler, Terry Fisher, Brett Frischmann, many more…

[I'll say more in Part IV about why I think this consensus matters—why there's some "payoff" to this digression. In short I think that if Congress's and courts' belief in the signaling effect led to the creation of strong patents and copyrights, then to the extent trade secrets are undermining the signaling effect, Congress and courts must take a close and skeptical look at them. In other words, if trade secrets are poisoning the fruits of the American patent system that Congress and courts sought, over many decades, to cultivate, then Congress and courts have to care.]

II. A Very Brief Survey of 50 Busy Years for Trade Secrecy: Theory, History, and Doctrine

[I will do my best to keep this Part short! In this Part, I will not attempt a comprehensive overview of trade secrecy doctrine, or even an overview of eligibility for trade secret protection. Instead, I think I simply want to make two points, one broad and one narrow. The broad point: Trade secrecy law has grown more important in recent years, with record-setting damages awards in misappropriation cases, trade secrecy increasingly affecting regulation, media law, etc.[28] The narrow point: Because of a few key changes to trade secrecy law that have occurred since the 1980s, credible assertion of trade secret rights in *prices* and *properties* of goods and services are now not just colorable but common and successful. Prior to the 1980s, prices and properties of goods and services were not uniformly considered protectable as trade secrets, and this information flowed more freely.[29] My current thinking is that there are three key changes to trade secrecy law that merit summarizing here because they have fueled claims of trade secrecy in prices and properties:

(1) The expansion in scope of protection under the UTSA and DTSA to permit trade secret claims in information that has merely potential independent economic value (rather than more stringently requiring proof of actual, established independent economic value).
(2) The concomitant expansion in remedies to permit holders of such information to seek injunctive relief, punitive damages, and other remedies, even in the

[28] Cite here broad swathes of trade secrecy literature, including Sandeen, Rowe, Levine, Hrdy, Katyal & Graves, Murphy, Seaman, Kapczynski, etc…

[29] For historical treatment of claims of trade secrecy in prices, *see* Robin C. Feldman & Charles Tait Graves, *Naked Price and Pharmaceutical Trade Secret Overreach*, 22 Yale J.L. & Tech. 61 (2020). Note that even pre-UTSA, under some courts upheld trade secret claims in prices even applying the Restatement and common law rules of trade secrecy, and even post-UTSA some courts have rejected trade secrecy claims in prices. So I will have to do some work to test and prove that the trend has been toward upholding trade secrecy claims in prices.

absence of any evidence of actual financial losses flowing from misappropriation.[30]

(3) The gradual shift toward conceiving trade secret rights as "intellectual property" rights enforceable not just against a small set of people and companies with relational duties to the rightsholder but instead presumptively enforceable against the world, including government agencies. Two important milestones in this shift, I think, are (a) the *Ruckelshaus v. Monsanto* decision of the Supreme Court (1984), which identified state-law trade secrets as "private property" protected under the Takings Clause of the Fifth Amendment, and (b) the Defend Trade Secrets Act (2016), which (while tracking the UTSA closely in substance) codified concepts of trade secret "ownership," thus cementing the conceptual shift toward trade-secrets-as-property.[31]

[In Part II, I will introduce readers to the reality that colorable, even successful, trade secrecy claims can now be made in the prices[32] and properties[33] of

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[30] For a helpful survey of remedies in trade secrecy law, both as a matter of doctrine and in actual practice, *see* Elizabeth A. Rowe, *Unpacking Trade Secret Damages*, 55 Houston L. Rev. 155 (2017).

[31] On the DTSA, *see, e.g.*, Zoe Argento, *Killing The Golden Goose: The Dangers Of Strengthening Domestic Trade Secret Rights In Response To Cyber-Misappropriation*, 16 Yale J. L. & Tech. 172 (2014); Sandeen; Levine [further citations needed!].

[32] Examples of *successful* claims that prices are trade secrets: (1) PhRMA's successful invalidation of Oregon's drug price transparency law, HB 4005, on the ground that it constituted an impermissible taking of pharma companies' trade secrets (the various prices they charge different payers for their drugs), https://www.sidley.com/en/insights/newsupdates/2024/02/oregons-drug-price-transparency-law-deemed-unconstitutional-by-district-court. (2) PhRMA forced Nevada into a settlement over its drug price transparency law, defanging it slightly, after alleging a taking of trade secrets, https://www.afslaw.com/perspectives/health-care-counsel-blog/phrma-and-bio-drop-their-lawsuit-challenging-nevadas-drug. (3) In 2019, a California state court enjoined a California agency from disclosing price information on drugs. Order Granting Petitioner Amgen Inc.'s Motion for a Preliminary Injunction, Amgen Inc. v. Cal. Corr. Health Serv., No. 18-stcp-03147 (Cal. Super. Ct. Mar. 11, 2019). (4) As Annemarie Bridy documented, medical device manufacturers brought claims of trade secret misappropriation over prices and negotiated undisclosed settlements with defendants. Annemarie Bridy, *Trade Secret Prices And High-Tech Devices: How Medical Device Manufacturers Are Seeking To Sustain Profits By Propertizing Prices*, 17 Tex. Intell. Prop. L.J. 187 (2009). (5) Apple convinced courts to seal information on its product prices, margins, etc. *Apple Inc. v. Samsung Elecs. Co.*, 727 F.3d 1214, 1222 (Fed. Cir. 2013). (6) Uber and Lyft have thwarted pricing transparency on the basis of trade secrecy claims (which has in turn hindered disruptor upstart rideshare apps, including coop/nonprofit models): https://blog.citp.princeton.edu/2024/06/19/building-on-colorados-success-all-states-need-mandatory-rideshare-transparency-reporting/.

[33] Examples of (at least somewhat) *successful* claims that properties of technological goods and services are trade secrets: (1) Tesla suppressing information on crash rates of its cars. https://www.ntd.com/does-tesla-try-to-bury-the-truth-about-autopilot-crashes-car-expert-responds_1080048.html, https://www.reuters.com/legal/government/musks-tesla-seeks-guard-crash-

goods and services, especially those that involve "technology" somehow and emerge from "innovative" scientific and technical research, development, and long-term investment. By "properties," I mean a wide range of properties. Relevant properties here include properties important to users, such as safety, reliability, utility, performing as advertised, etc. I may also nod at trade secrecy claims in properties of technological goods and services important to investors, such as financial properties (R&D costs, manufacturing costs, profit margins, and so on) and "public interest" properties that affect the long-term viability of investment in various technologies, such as discriminatory impact and environmental harm (which might prompt regulation or abolition of certain technologies and thus reduce returns on investment).

[I intend also to briefly present the (rather ironic) reality of trade secrecy claims asserted as to the valuation of copyrights, patents, and other "core" intellectual rights. The fact of myriad trade secrecy claims in prices and properties will be described and analyzed in more detail in Part III.]

[I'd like readers to emerge from Part II with the following takeaways: Changes to trade secrecy doctrine between the 1980s and 2010s mean that trade secrets came, by the 2010s, to enjoy broad scope, broad remedies, broad *power*. These doctrinal changes were driven largely on the basis of incentive-to-innovate arguments; the signaling effect was not a central part of theoretical or legislative discussion. In effect, trade secrecy grew like kudzu into a major branch of intellectual property law without ever being scrutinized for its utility (or disutility) in promoting efficient information production. I'm not sure Congress, state legislatures, and the courts realized in their flurry of activity from the 1980s through the 2010s that they were "propertizing" prices and properties and thus reshaping considerably information flows across the American economy. Thus the need for this article: The

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data-public-disclosure-2025-06-04/. (2) Google and other AI companies running data centers suppressing information on water and energy use of its data centers. https://www.oregonlive.com/silicon-forest/2022/12/the-dalles-settles-pu. (3) Uber and Lyft suppressing, as alleged trade secrets, info on the safety of their rideshare apps. https://www.sfpublicpress.org/california-agency-is-hiding-uber-and-lyft-accident-reports/, https://blog.citp.princeton.edu/2024/06/19/building-on-colorados-success-all-states-need-mandatory-rideshare-transparency-reporting/. (4) Vanda's pending claims against the FDA alleging takings flowing from alleged disclosure of information on dissolution and impurities in prescription drug products. https://www.reuters.com/legal/vanda-pharmaceuticals-sues-us-government-over-drug-trade-secrets-2023-05-02/. (5) In 2025, FDA began disclosing Complete Response Letters documenting the agency's judgment about new drugs and vaccines, especially their value to patients, but redacted for trade secrets and confidential commercial information out of deference to industry. https://www.sidley.com/en/insights/newsupdates/2025/07/fda-release-of-complete-response-letters-raises-confidentiality-and-disclosure-questions. [must add more examples!].

time is ripe to examine whether trade secrets are promoting efficient markets and efficient information production.]

III. Trade Secrecy Claims in Price and Properties May Be Hindering Efficient Information Production

[I'm still very much thinking through how to test and (perhaps) prove my hypothesis that trade secret claims in prices and properties are hindering markets' signaling effects and efficient information production! I welcome critiques of the few ideas I offer here and welcome brainstorming on other potential tests. Perhaps I should look at price obfuscation and the recent phenomenon of "surveillance pricing," which make it increasingly difficult to determine what prices actually are in online commerce. Or perhaps I should look at the literature on retail investing—is stock picking paradoxically getting harder, not easier, for the everyday person in an era of "infoglut" because meaningful information on the prospects of publicly traded companies is getting shrouded in claims of trade secrecy?]

[In Part III and throughout the article, I will also need to acknowledge that other scholars before me have observed in various ways that trade secrecy may hinder IP's signaling effect and efficient information production in science and technology![34]]

A. A First Case Study in Inefficient Capital Markets: Self-Driving Cars

[Are self-driving cars (aka autonomous vehicles) the next big thing in personal transportation or a fad, a bubble? Will they unlock meaningful social benefits (more free time, fewer injuries and deaths for riders and pedestrians, reduced emissions, etc.) or social harms (surveillance, injuries and deaths for riders and pedestrians, etc.). At a high level, are self-driving cars a good place for finite investment dollars and costly information production, or should we as a society put our energy elsewhere (e.g., into public transportation)?]

[Per Demsetz's signaling effect, the market should be revealing to investors and society at large the answer to these questions, but instead the answers are unclear, even after many years of development and hype. There's growing evidence to suggest the investment bubble is now "popping" as sophisticated investors come to think self-driving cars are a bad investment.[35] But why is the future so unclear,

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[34] *See, e.g.*, Feldman & Graves at 121: "As trade secret emerges fully into the pantheon of intellectual property protections, this area of law must develop its own concepts for articulating the limits of its reach" (critiquing claims of trade secrecy in prices); Brett Frischmann; others

[35] https://www.bloomberg.com/news/articles/2025-01-13/why-ai-investors-should-worry-about-the-self-driving-car-crash, https://sfist.com/2024/03/05/has-the-self-driving-car-bubble-burst-some-

and (if this was in fact a bubble that's now popping) why did the bubble take so long to pop?]

[Perhaps some part of the explanation is the notorious secrecy of the companies developing self-driving cars. Their aggressive claims of trade secrecy prompted some of the biggest (in dollar terms) trade secrecy misappropriation claims in history.[36] And the same companies have used claims of trade secrecy to try to suppress dissemination of information on crash rates, pedestrian and rider safety, reliability of navigation, etc.[37] This may in turn have made rational investment decisions in self-driving cars more difficult—a thesis I have to test somehow, perhaps through closer analysis of the business literature or even through interviews and other qualitative research.]

B. A Second Case Study in Inefficient Capital Markets: Generative "AI"

[I intend this case study to be structured similarly to the self-driving car case study. Is generative "artificial intelligence" the next big thing in—well, everything—or is it a fad, a bubble? Will generative AI unlock more benefits or harms? At a high level, is generative AI a good place for finite investment dollars and costly information production, or should we as a society put our energy elsewhere?]

[As with self-driving cars, I think it's true that answers to these questions are unclear, despite staggering investment that dwarfs even investment in self-driving cars. As other scholars have documented,[38] generative AI is a technology with a pronounced culture of secrecy,[39] big-dollar trade misappropriation clashes among companies,[40] and profound uncertainty about the social value and business prospects of generative AI companies. Can I show a causal link between claims of trade

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analysts-say-so-as-apple-has-exited-the-autonomous-vehicle-race/, https://nymag.com/intelligencer/article/apple-tesla-and-the-dying-dream-of-self-driving-cars.html,

[36] Cite Uber/Waymo/Google/Levandowski disputes, Tesla v. Xiaopeng, WeRide case, …

[37] E.g., https://www.reuters.com/legal/government/musks-tesla-seeks-guard-crash-data-public-disclosure-2025-06-04/

[38] Recent and forthcoming papers from Camilla Hrdy, David Levine, Madeeha Dean & Sonia Katyal, Hannah Bloch-Wehba, others….

[39] *E.g.*, OpenAI threatening whistleblowers within the company with claims of trade secrecy. https://openai.com/index/openai-raising-concerns-policy/

[40] https://patentlyo.com/patent/2025/03/openevidence-pathway-engineering.html, https://apnews.com/article/iyo-io-trademark-dispute-openai-jony-ive-0193532cf71cf975de62b4218ebd3bb6, [collect more TS misappropriation cases involving genAI].

secrecy in various properties of generative AI—its reliability, long-term effects on users, social costs (energy, water, environmental, wages, and so on)—and the economy's difficulty in deciding whether generative AI is a technology worth further research, i.e., further information production?]

C. A Case Study in Inefficient Consumer Markets: Health Technologies

[Here I intend to pivot from "high" technology to a sector of our economy and society I know better: health care. I'd also like to pivot away from studying and describing inefficiencies of capital markets to inefficiencies of consumer markets.]

[I'd like to test the claim, which I've recently made elsewhere in provisional form,[41] that trade secrecy is hindering efficient choices by consumers (i.e., patients) and medical professionals (i.e., doctors, nurse practitioners, and other health professionals). I've gathered some evidence that trade secrecy limits flows of clinical trial data and other evidence of safety and effectiveness into the medical literature, into Food & Drug Administration publications, and into other information sources that patients and caregivers rely on to decide whether to want or reject various interventions—drugs, vaccines, medical devices, surgeries, and so on. This is, I think, an example of claims of trade secrecy in the *properties* of goods and services hindering the efficient operation of a market. I will test the claim that we in the United States do not direct financial investment or scientific resources into the areas of medical research that would yield the greatest benefits for patients and society at large in part because trade secrecy is preventing us from "seeing" those areas.]

[There's likely a good critique of my argument here, which I must grapple with: Health care is so heavily distorted by regulation that it's not really a "market" to begin with. Patient and caregiver demand for medical interventions is shaped by innumerable laws, policies, and practices—medical malpractice law, detailing and direct-to-consumer advertising, insurance coverage, and on and on. And the price signal—per Demsetz and other leading lights of law and economics, the most important signal of all, best equipped to organize information production—is notoriously noisy and unreliable in health care.[42] I will try to address this critique by acknowledging these truths while pointing to certain vivid instances of market failure that seem to me directly traceable to the influence of trade secrets: namely, instances of patients and caregivers demanding and consuming billions of dollars' worth of drugs, medical devices, and surgeries because the vendors of those goods and

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[41] https://lpeproject.org/blog/whats-value-in-health-care-powerful-companies-make-it-hard-to-know/

[42] Citations on the chaos of pricing in U.S. health care, with focus on center- and right-wing critiques from Cato, etc.

services hid, as supposed trade secrets, evidence that they are useless or, worse, toxic or otherwise harmful.[43]]

D. A Final Look at Trade-Secret-Induced Inefficiency: Obscuration of Patents' Signaling Effects

[Finally, Part III.D may step back from specific industries and take up a question that I think is pertinent to all fields of science and technology: Is trade secrecy, somewhat ironically, hindering liquid and efficient markets for selling and licensing U.S. patents? As Part I showed, law and economics presupposes that patents promote efficient information production by, inter alia, signaling via the value of patents the value of the technology that patents embody and cover. The market price of a patent or patent license is, like the price of a technologically-intensive good or service, a signal of the value of the underlying technology. Yet patent valuation is very hard and arguably getting harder because trade secrecy shrouds information on patent valuation.]

[To my tentative understanding, information on the value of patents was historically considered outside the scope of trade secret protection. The prices at which patents were sold or licensed were freely shareable (if not always willingly disclosed by the parties to the transaction).[44] Beginning in the 1980s and 1990s and continuing today, information on the valuation of patents (and copyrights) came increasingly under claims of trade secrecy, and courts have often acceded to that view. Documentation of patent sales and licenses (settlement agreements and so on)

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[43] Theranos faulty blood tests, Sarepta's probably ineffective and possibly deadly muscular dystrophy drugs, Eisai's probably ineffective and possibly deadly Alzheimer's drug. Alzheimer's treatments may be a rich case study to develop, because Eisai and Biogen seem to have withheld data from scientists and investors on trade secrecy/confidential commercial information grounds (see, e.g., https://insights.citeline.com/PS149727/Aduhelms-Goodbye-ENVISION-Confirmatory-Study-To-End-In-May-With-BLA-Withdrawal-In-November/ and https://www.nytimes.com/2024/10/23/health/alzheimers-drug-brain-bleeding.html) and because the (mixed) success of these drugs may have shifted R&D investment and activity away from more difficult but probably ultimately more promising kinds of Alzheimer's drug research (see, e.g., https://www.statnews.com/2025/02/11/amyloid-hypothesis-alzheimers-research-lecanemab-aduhelm/, https://www.thenation.com/article/society/alzheimers-drugs/).

[44] See pre-1990s FOIA cases concerning requests for licensing agreements on U.S. government-owned patents and writing from Luis Abinader, Jamie Love, others at Knowledge Ecology International. See also Chisum, other treatises in copyright and patent law collecting licensing and reasonable royalty rates from older decades. Try to find quotes in Chisum, Matthews, other patent authorities on the difficulty of finding licensing rates. Cite also Abinader's ongoing project, gathering some very interesting and useful patent valuation info from SEC filings. (Again, an example of how when we get transparency law in the United States, it often serves investors/capital markets rather than other constituencies.)

are now usually redacted to omit prices, royalty rates, and the like, if they are revealed at all. Recent challenges to courts' habit sealing patent valuation information, by the Electronic Frontier Foundation, newspapers, and other interested audiences have shined a light on this practice.[45]]

[The upshot is that understanding the valuation of particular patents—and so understanding the value of the underlying technology covered by patents—is arguably unnecessary difficult and more difficult than it was before the expansion of trade secrecy claims. This difficulty may, in turn, hinder competitors, investors, and so on from deciding which fields of technology to focus new activity on.]

[I may conclude Part III by revisiting Demsetz's essay. It includes the following interesting passage:

> I have stated elsewhere what I believe to be the basic problem facing public and private policy: the design of institutional arrangements that provide incentives to encourage experimentation (including the development of new products, new knowledge, new reputations, and new ways of organizing activities) without overly insulating these experiments from the ultimate test of survival. In the context of the problems discussed in Arrow's paper, these institutional arrangements must strive to balance three objectives. A wide variety of experimentation should be encouraged, investment should be channeled into promising varieties of experimentation and away from unpromising varieties, and the new knowledge that is acquired should be employed extensively.

Query whether trade secrecy law is—in Demsetz's words—now "overly insulating [technological and scientific] experiments from the ultimate test of survival." Query too whether trade secrecy law is channeling investment into "unpromising varieties" of experimentation, and/or thwarting new knowledge's extensive employment. If so, trade secrecy law may be failing as IP and merit reevaluation and reform.]

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[45] *See, e.g.*, Bernard Chao & Derigan Silver, *A Case Study in Patent Litigation Transparency*, 2014 J. Disp. Resol. 83 (2014) (documenting parties' and court's pervasive secrecy as to a novel damages theory and a billion-dollar damages award for infringement of agribusiness seed patents); EFF and PIPLI's unsealing efforts vis-à-vis Uniloc, https://www.eff.org/cases/uniloc-v-apple; EFF's ongoing effort to obtain the DOCSIS License that describes, governs, and prices cable internet technology: https://www.eff.org/cases/entropic-communications-llc-v-charter-communications-inc.

IV. Prescriptions

[Part IV will be written last, after I've worked through the analysis of Part III.]

[I expect, however, to argue in Part IV for a kind of "originalist trade secret law." We should revert to more traditional scope of protection in trade secrecy, so as to make clear that information on prices and properties should not be eligible for trade secret protection.]

[I may also gesture briefly at a non-law-and-economics-based perspective, to suggest that the article may provide some ammunition to opponents of capitalism and market ordering. That is, the article may provide some evidence that the supposed efficiency benefits of intellectual property and markets themselves are phantasmic, making alternatives to capitalism increasingly viable, even necessary. At a moment when market ordering's ability to direct capital and human resources toward the most pressing problems of information production, other forms of ordering may become more appealing, including centralized government planning of information production and more anarchic, noncommercial research initiatives.]

[In Part IV, I might also offer some inchoate thoughts on how one of the features that makes informational capitalism new, distinctive, and worrisome is its reliance on trade secrecy. Scholars of informational capitalism, including Cohen, Katyal, Pistor, and Kapczynski, have documented informational capitalism's dominant platforms and their fervor for trade secrecy (wielded in combination with contracts, managerial/neoliberal privacy law, and other legal tools). Perhaps part of what makes these companies so powerful, what makes them feel so troubling, and what makes them feel *different* from powerful companies of eras past is that they are actually distorting consumer and capital markets around themselves, breaking longstanding rules of capitalism to serve their own ends.]

Conclusion

[TK]