# 1AC

### 1AC---Innovation Advantage

#### Advantage 1 is Innovation:

#### Standards-Setting Organizations are industry members who jointly establish standards for IT defined by the adoption of standard-essential patents, which are licensed to companies on Fair, Reasonable, and Non-Discriminatory terms. Current standards promote price gouging, FRAND enforcement is critical.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf)

I. Standard Setting and the Competitive Process

The fundamental economics in the information technology sector, driven by network effects, implies that there is enormous value associated with establishing compatibility standards. Popular standards include the mobile broadband standards used in cell phones, which are established by the 3rd Generation Partnership Project (3GPP), and the Wi-Fi technology for wireless local area networks, which is enabled by the 802.11 standard established by the Institute of Electrical and Electronics Engineers (IEEE).4

There are many SSOs, and their rules and procedures differ considerably. In addition to IEEE, leading SSOs include the International Organization for Standardization (ISO), the International Telecommunication Union (ITU), the European Telecommunications Standards Institute (ETSI), the Internet Engineering Task Force (IETF), and the World Wide Web Consortium (W3C).5 SSOs generally establish standards by holding a series of committee meetings among industry participants. These meetings culminate in a vote on a technical specification that describes what features or attributes a product must have in order to comply with the standard. Most SSOs are open to all industry participants and seek to operate on a consensus basis, applying certain voting rules. SSOs do not normally engage in patent licensing, nor do they specify how patent royalties will be divided up among patent holders. They leave that to their members, which in some cases form patent pools to address these issues.6

SSOs adopt specific policies relating to intellectual property rights (IPRs).7 These IPR policies are generally intended to enable the SEP holders to obtain reasonable royalties for licensing their patents, while prohibiting them from charging excessive royalties after other industry participants have committed to the standard. At that point, firms committed to implementing the standard— which we call “implementers”—would find it very costly to avoid using the patented technology. For this purpose, most SSOs require SEP owners to license their SEPs on FRAND terms.8

FRAND policies are especially necessary because negotiations between SEP holders and implementers generally take place only after the implementers have used and infringed the technologies claimed by the SEPs. Standards involving information and communications technology can involve hundreds or even thousands of SEPs, many with uncertain boundaries for infringement. In addition, a time lag exists between patent application and patent issuance. For these and other reasons, it is impractical for implementers to enter into negotiations for patent licenses with all SEP owners prior to the establishment of a standard and to their implementation of it.9

The fact that patent negotiations generally do not take place until after implementers have used and infringed the technologies has several critical implications. First, at the time of negotiation, implementers are locked into the standard and the technologies claimed by the SEPs—that is, the cost to switch to an alternative technology or standard at that point—ex post—is much greater than it was ex ante, before the patented technology was first included in the standard. Ex post, the patent holder is no longer competing to have its technology included in the standard, nor is it competing to have implementers of the standard use its technology. Instead, because the patent holder owns an asset that is essential to the standard, implementers have no choice but to use the patented technology.

If the standard is commercially successful, implementers are willing to pay a much larger royalty for use of the patented technology than they would have paid ex ante, when the SEP holder faced competition from other technologies. In these circumstances, the SEP holder can be said to have obtained monopoly power in the market in which the patented technology is licensed for use in implementing the standard.10

Second, because of lock-in and the implementer’s ongoing infringement, the potential for litigation looms large in licensing negotiations. In effect, the parties are negotiating about how to settle an infringement suit, and that negotiation is heavily influenced by their predictions as to what the court will do if they cannot agree. This situation is not unique to SEPs; it arises frequently when firms are faced with patent infringement claims for products they have independently developed or technologies they have inadvertently infringed. Patent law addresses such instances by specifying that patent holders are entitled to “reasonable royalties,” defined as the royalties that the parties would have negotiated prior to the infringement and thus prior to lock-in.11 Those hypothetical ex ante royalties reflect the market value of the patent license. Notwithstanding the law’s embrace of this principle, however, as a practical matter, patent holders are generally able to recover more than the ex ante value of the patent when litigation occurs after the implementers are locked in. Further, negotiations in the shadow of litigation after lock-in tend to result in royalties in excess of the ex ante or market value of the patented technology.12

Third, the shadow of litigation is particularly problematic in the communications and technology sector, in which products typically include hundreds or thousands of patented technologies. A court-ordered injunction involving such products would deprive the implementer of not only the value of the technology covered by the patent-in-suit, but also the value of the entire product.13 Implementers that are forced to bear the risk of an injunction are thus induced to agree to royalties greater than those that would be appropriate if only the value of the patented technology were at stake. Those royalties systematically provide SEP holders with excessive compensation in comparison with the benchmark of ex ante royalties.

These implications of lock-in and ex post dealings are well-understood: they represent an example of the general concept of lock-in and opportunism developed by Oliver Williamson.14 The Federal Circuit has also recognized the market distortions caused by the inclusion of patented technologies in public standards and the resulting danger of patent holdup involving SEPs.15

For these and other reasons, the SEP holder has ex post monopoly power that, if left unchecked, would enable it to obtain royalties far in excess of the royalties that it could earn in a competitive market.16 To address this common problem and limit ex post opportunism by SEP holders, SSOs typically require participants that own SEPs to make certain FRAND commitments. In particular, by requiring a commitment to license on “fair and reasonable” terms, the FRAND requirement aims to prevent, or at least reduce, the extent of monopoly pricing by SEP holders. And by requiring a commitment to license on “nondiscriminatory” terms, the FRAND requirement can prevent SEP holders from extracting monopoly premiums by selective licensing or, more important, migrating their monopoly power from the FRAND-regulated market to unregulated standard-implementing product markets by licensing to only one or a few implementers or licensing to selected implementers on discriminatorily favorable terms.

#### Patent holdup is accentuated by the Ninth Circuit’s recent decision in *FTC v. Qualcomm* that permits ICT firms to engage in innovation-stifling conduct with antitrust impunity.

Moss 20, \*Alex Moss is a Staff Attorney on EFF’s intellectual property team, before joining EFF, Alex practiced complex commercial litigation at Sullivan & Cromwell LLP in New York and Durie Tangri LLP in San Francisco; (August 26th, 2020, “Throwing Out the FTC's Suit Against Qualcomm Moves Antitrust Law in the Wrong Direction”, https://www.eff.org/deeplinks/2020/08/throwing-out-ftcs-suit-against-qualcomm-moves-antitrust-law-wrong-direction)

Standards can enhance competition and consumer choice, but they also massively inflate the value of patents deemed essential to the standard, and give their owners the power to sue companies that implement the standard for money damages or injunctions to block them from using their SEPs. When standards cover critical features like wireless connectivity, SEP owners wield a huge amount of “hold-up” power because their patents allow them to effectively block access to the standard altogether. That lets them charge unduly large tolls to anyone who wants to implement the standard.

To minimize that risk, standard-setting organizations typically require companies that want their patented technology incorporated into a standard to promise in advance to license their SEPs to others on fair, reasonable, and non-discriminatory (FRAND) terms. But that promise strikes at a key tension between antitrust and patent law: patent owners have no obligation to let anyone use technology their patent covers, but to get those technologies incorporated into standards, patent owners usually have to promise that they will give permission to anyone who wants to implement the standard as long as they pay a reasonable license fee.

Qualcomm is one of the most important and dominant companies in the history of wireless communication standards. It is a multinational conglomerate that has owned patents on every major wireless communication standard since its first CDMA patent in 1985, and it participates in the standard-setting organizations that define those standards. Qualcomm is somewhat unique in that it not only licenses SEPs, but also supplies the modem chips used by a wide range of devices. These include chips that implement wireless communication standards, which lie at the heart of every mobile computing device.

Although Qualcomm promised to license its SEPs (including patents essential to CDMA, 3G, 4G, and 5G) on FRAND terms, its conduct has to many looked unfair, unreasonable, and highly discriminatory. In particular, Qualcomm has drawn scrutiny for bundling tens of thousands of patents together—including many that are not standard-essential—and offering portfolio-only licenses no matter what licensees actually want or need; refusing to sell modem chips to anyone without a SEP license and threatening to withhold chips from companies trying to negotiate different license terms; refusing to license anyone other than original-equipment manufacturers (OEMs); and insisting on royalties calculated as a percentage of the sale price of a handset sold to end users for hundreds of dollars, despite the minimal contribution of any particular patent to the retail value.

In 2017, the U.S. Federal Trade Commission [sued](https://www.ftc.gov/news-events/press-releases/2017/01/ftc-charges-qualcomm-monopolizing-key-semiconductor-device-used) Qualcomm for violating both sections of the Sherman Antitrust Act by engaging in a number of anticompetitive SEP licensing practices. In May 2019, the U.S. District Court for the Northern District of California agreed with the FTC, identifying numerous instances of Qualcomm’s unlawful, anticompetitive conduct in a comprehensive [233-page opinion](https://www.eff.org/document/ftc-v-qualcomm-district-court-opinion). We were pleased to see the FTC take action and the district court credit the overwhelming evidence that Qualcomm’s conduct is corrosive to market-based competition and threatens to cement Qualcomm’s dominance for years to come.

But this month, a panel of judges from the Court of Appeals for the Ninth Circuit unanimously [overturned](https://www.eff.org/document/ninth-circuit-opinion-ftc-v-qualcomm) the district court’s decision, reasoning that Qualcomm’s conduct was “hypercompetitive” but not “anticompetitive,” and therefore not a violation of antitrust law. To reach that result, the Ninth Circuit made the patent grant more powerful and antitrust law weaker than ever.

According to the Ninth Circuit, patent owners don’t have a duty to let anyone use what their patent covers, and therefore Qualcomm had no duty to license its SEPs to anyone. But that framing requires ignoring the promises Qualcomm made to license its SEPs on reasonable and non-discriminatory terms—promises that courts in this country and around the world have consistently enforced. It also means ignoring antitrust principles like the essential facilities doctrine, which limits the ability of a monopolist with hold-up power over an essential facility (like a port) to shut out rivals. Instead, the Ninth Circuit held rather simplistically that a duty to deal could arise only if the monopolist had provided access, and then reversed its policy.

But even when Qualcomm restricted its licensing policies in critical ways, the Ninth Circuit found reasons to approve those restrictions. For example, Qualcomm stopped licensing its patents to chip manufacturers and started licensing them only to OEMs. This had a major benefit: it let Qualcomm charge a much higher royalty rate based on the high retail price of the end user devices, like smartphones and tablets, that OEMs make and sell. If Qualcomm had continued to license to chip suppliers, its patents would be “exhausted” once the chips were sold to OEMs, extinguishing Qualcomm’s right to assert its patents and control how the chips were used.

Patent exhaustion is a century-old doctrine that protects the rights of consumers to use things they buy without getting the patent owner’s permission again and again. Patent exhaustion is important because it prevents price-gouging, but also because it protects space for innovation by letting people use things they buy freely, including to build innovations of their own. The doctrine thus helps patent law serve its underlying goal—promoting economic growth and innovation. In other words, the doctrine of exhaustion is baked into the patent grant; it is not optional. Nevertheless, the Ninth Circuit wholeheartedly approved of Qualcomm’s efforts to avoid exhaustion—even when that meant cutting off access to previous licensees (chip-makers) in ways that let Qualcomm charge far more in licensing fees than its SEPs could possibly have contributed to the retail value of the final product.

It makes no sense that Qualcomm could contract around a fundamental principle like patent exhaustion, but at the same time did not assume any antitrust duty to deal under these circumstances. Worse, it’s harmful for the economy, innovation, and consumers. Unfortunately, the kind of harm that antitrust law recognizes is limited to harm affecting “competition” or the “competitive process.” Antitrust law, at least as the Ninth Circuit interprets it, doesn’t do nearly enough to address the harm downstream consumers experience when they pay inflated prices for high-tech devices, and miss out on innovation that might have developed from fair, reasonable, and non-discriminatory licensing practices.

We hope the FTC sticks to its guns and asks the Ninth Circuit to go en banc and reconsider this decision. Otherwise, antitrust law will become an even weaker weapon against innovation-stifling conduct in technology markets.

#### Weakened antitrust enforcement emboldens firms to follow Qualcomm’s lead, which collapses FRAND integrity.

Hovenkamp 20, \*Herbert J. Hovenkamp is James G. Dinan University Professor at the University of Pennsylvania Law School and the Wharton School of the University of Pennsylvania; (2020, “FRAND and Antitrust”, <https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=3095&context=faculty_scholarship>)

While the FRAND process has been highly productive, it is also fragile. Firms are tempted to make commitments at the beginning when the incentive to join is large, but renege on them later when they can profit by doing so. At least in this particular case, private FRAND enforcement had not worked very well. Qualcomm had been able to violate FRAND commitments in order to exclude rivals and obtain higher royalties than FRAND would permit, largely with impunity. Other firms will very likely follow Qualcomm’s lead. If that happens the FRAND system will fall apart, doing irreparable injury to the modern wireless telecommunications network or, at the very least, diminishing the leadership role of the United States in preserving effective network competition.

While governments can be heavily involved in standard set-ting,9 the implementation of technical standards in information technologies is largely the work of private actors. Government involvement is limited mainly to enforcement of contract, intellectual property, or antitrust law. As private actors, those involved in standard setting or compliance are fully subject to the federal antitrust laws.

This Article addresses one question: when is an SSO participant’s violation of a FRAND commitment an antitrust violation, and if it is, of what kind and what are the implications for remedies? It warns against two extremes. One is thinking that any violation of a FRAND commitment is an antitrust violation as well. In the first instance FRAND obligations are contractual, and most breaches of contract do not violate any antitrust law. The other extreme is thinking that, because a FRAND violation is a breach of contract, it cannot also be an antitrust violation. The question of an antitrust violation does not de-pend on whether the conduct breached a particular agreement but rather on whether it caused competitive harm. This can happen because the conduct restrained trade under section 1 of the Sherman Act, was unreasonably exclusionary under section 2 of the Sherman Act, or amounted to an anticompetitive condition or understanding as defined by section 3 of the Clay-ton Act.10 The end goal is to identify practices that harm com-petition, thereby injuring consumers.

The Ninth Circuit’s Qualcomm decision will make antitrust violations in the context of FRAND licensing much more difficult to prove, even in cases where anticompetitive behavior and consumer harm seem clear.11 Indeed, in this case the court itself acknowledged the harm to consumers but appeared to think that they were not entitled to protection.12 If this decision stands, FRAND obligations will to a larger extent have to be settled through private litigation and the federal antitrust enforcement agencies will have a diminished role. Anticompetitive behavior by one firm that is not effectively disciplined will lead others to do the same thing.

#### Absence of domestic 5G competition cedes leadership in technical standards to China.

Duan 19, \*Charles Duan is a senior fellow and associate director of tech & innovation policy at the R Street Institute, where he focuses his research on intellectual property issues; (February 5th, 2019, “Why China Is Winning the 5G War”, https://nationalinterest.org/feature/why-china-winning-5g-war-43347)

There is little doubt today that American superiority in the next generation of mobile communications, commonly called 5G, is a matter of extraordinary national concern. There is also little doubt that China is a strong competitor, already having outspent the United States by [$24 billion](https://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology-media-telecommunications/us-tmt-5g-deployment-imperative.pdf#page=3) and planning [$411 billion](https://www.scmp.com/tech/china-tech/article/2098948/china-plans-28-trillion-yuan-capital-expenditure-create-worlds) in 5G investment over the next decade. The Chinese government has also laid out multiple national plans for establishing the country as a leader in mobile technology, and the Chinese firm Huawei is poised to be the [top smartphone manufacturer](https://www.cnbc.com/2018/11/16/huawei-aims-to-overtake-samsung-as-no-1-smartphone-player-by-2020.html) by 2020.

And what are United States companies doing about this? Bickering over patents.

For years, the leading American supplier of advanced mobile communications chips has been the San Diego-based Qualcomm. The company has been an innovator of mobile technology, but it has also been a remarkable innovator of convoluted legal strategies. As an ongoing Federal Trade Commission [lawsuit alleges](https://www.ftc.gov/news-events/press-releases/2017/01/ftc-charges-qualcomm-monopolizing-key-semiconductor-device-used), Qualcomm has used its dominant position as a chip supplier and its extensive patent holdings to weave an intricate web of patent licensing across the mobile industry. The effect of that complex licensing scheme, the FTC claims, has been to force competitor chipmakers out of the market and to extract concessions and high patent royalties from smartphone and mobile-device makers.

Qualcomm today faces only one major U.S. competitor—Intel, whose chips Apple recently [started using](https://www.cultofmac.com/484250/intel-reaping-rewards-apples-scrap-qualcomm/) instead of Qualcomm’s. Not surprisingly, Qualcomm has leveraged its patents to force a retaliatory investigation against Apple, the effect of which could be, as an administrative judge [recently determined](http://www.fosspatents.com/2018/10/itc-judge-didnt-buy-testimony-for-which.html), to boot Intel out of the mobile-chip market and leave Qualcomm as a monopoly.

It is hard to imagine that this infighting among Apple, Intel and Qualcomm is getting the United States very far in 5G, and it is harder to imagine that Qualcomm’s desired outcome would do so, either. The best path, instead, is the obvious one: allowing competition and expanding the number of firms working on 5G.

Competition encourages companies to out-innovate each other in order to grab market share. Of particular importance to 5G, competition leads to [better cybersecurity](https://morningconsult.com/opinions/in-the-race-to-5g-monopoly-considered-harmful/) in products, making them less vulnerable to hacking or misuse.

Competition is especially crucial when it comes to the technical standards that define how 5G works. These standards are the work of 3GPP, an international consortium of technology companies in the field. Chinese players such as Huawei and ZTE are major participants in 3GPP. Ensuring that 3GPP’s standards reflect American values requires having as many American companies at the negotiating table as possible—which is harder to achieve when those companies are trying to sue each other out of business.

Certainly patents themselves, as rewards for new inventions, are a driver of innovation in areas such as 5G. The problem, though, is not the existence of a patent system but the ever-expanding power of the patent laws, which encourage companies to pour dollars into complex patent licensing and assertion schemes—as companies like Qualcomm have done—rather than to perform the hard work of building new technologies. When innovation in patent strategy is more profitable than actual innovation, we lose the race to 5G and other technologies.

But don’t take my word for it. [Multiple members of Congress](https://www.patentprogress.org/2019/01/11/congress-weighs-in-on-qualcomm-and-apple-at-the-itc/), from both sides of the aisle, have denounced the use of patents to kick companies like Intel out of 5G development, predicting that such actions would “dampen the quality, innovation, competitive pricing, and in this case the preservation of a strong U.S. presence in the development of 5G and thus the national security of the United States.”

Or look to what China itself is doing. The Chinese government is handing out rewards left and right to encourage technology research and development. Indeed, it grants subsidies and financial benefits (ranging from the [ordinary](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2818503) to the [imperfect](https://funginstitute.berkeley.edu/wp-content/uploads/2013/12/patent_subsidy_Zhen.pdf) to the [bizarre](https://www.scmp.com/news/china/article/1681850/how-get-out-jail-early-china-buy-inventors-idea-and-patent-it)) to encourage its citizens to file for patents. But while China specifically encourages filing for patents, it does little to encourage using them: Patent infringement awards in court are peanuts—often only [five figures](https://scholarship.law.berkeley.edu/btlj/vol33/iss2/2/)—and most Chinese patent owners drop their patents [within five years](https://www.bloomberg.com/news/articles/2018-09-26/china-claims-more-patents-than-any-country-most-are-worthless) of getting them. The message in China is clear: You will be rewarded for innovating, but not for quibbling over patents.

The United States should take the same tack if it wants to match China in 5G. Ever-stronger patent rights encourage counterproductive disputes that are a drag on industry, a drag on research and development, and ultimately a drag on domestic competitiveness on the global stage. If America wants to lead in 5G, then it must clear the path for strong competition among leading American technology companies.

#### Standards leadership allows China to export digital authoritarianism.

Drew et al. 21, \*Dr Alexi Drew, Research Associate, The Policy Institute, King’s College London; (May 7th, 2021, “The Critical Geopolitics of Standards Setting”, https://www.transatlantic-dialogue-on-china.rusi.org/article/the-critical-geopolitics-of-standards-setting)

However, this previously ‘western’ domain is challenged by a Chinese bloc of private industry actors with centrally directed, strategic motivations for their efforts who have managed to leverage the flaws of this system for political and economic advantage.  The market-driven self-regulation model of technical standards has proven itself unsustainable given the geopolitical power achievable through the control of these standards. The marketised approach is easily abusable by a technologically developed nation-state with geopolitical intentions firmly in mind.

Obscurity Through Complexity

Technical standards have the immediate appearance of being both apolitical and ethically neutral. This seems to set them apart from the debate over standards of state behaviour in [cyber space concerning espionage and actions below the threshold of armed conflict](https://www.cfr.org/blog/unexpectedly-all-un-countries-agreed-cybersecurity-report-so-what). Yet, technological standards are unequivocally connected to normative practices of international behaviour and ethics. The extremely complex nature of the standards under consideration in bodies such as the International Organization for Standardization, the International Electrotechnical Commission (IEC), the International Telecommunications Union (ITU), and the Third Generation Partnership Project (3GPP) obscures the very tangible real-world impact that the standards they set have. The 3GPP is responsible for standards setting for mobile telecommunications. It covers everything from 5G through to autonomous vehicles and the Internet of Things. These are the bodies defining how the modern world is constructed.

On the one hand they appear quite benign, responsible for such banalities as the use of Universal Serial Bus (USB) connectors versus proprietary standards. This hardly seems a matter of national security importance. But the same process is responsible for what ultimately shape the basic operating parameters of facial recognition technology in closed circuit television systems, the level of centralised state control at the technical foundations of the internet, and the protections of personally identifiable data. These generate profound implications for international policy and ethics.

Internal Competition vs Strategic Direction

Technical standards setting processes have, historically, been dominated by private sector actors who have had both the capacity to develop a particular technology to the point of holding a significant market share, and the ability to use that market share to advocate for the standardisation of the technology in line with their own production. The market led approach has continued to be the prevailing model by which American companies have globalised the technical standards behind US dominated technological innovation. This privatised form of self-regulation for technology companies is only partially influenced by the approach taken within the EU where [some licensing of standards are controlled by state or EU led institutions.](https://www.ui.se/globalassets/ui.se-eng/publications/ui-publications/2019/ui-brief-no.-2-2019.pdf)

In contrast to this approach the Chinese model has involved a high level of state-oriented direction, oversight, and direct engagement on the creation and signing off technical standards. Efforts to harmonise and centralise technical standards domestically have become increasingly internationalised as the CCP takes this centralised, strategic approach to technical standards setting bodies such as the ITU, 3GPP, and IEC. Technical standards have also become an increasingly central component of the Digital Silk Road with the openly expressed goal of increasing uptake of Chinese technical standards in partner countries.

The implications of this clash between a system of technical standardisation that is driven by the market versus one driven by an authoritarian government subsidised model are a direct challenge to the development of free, open, and ethical technology. Standardisation mechanisms have become political, or rather there has been a gradual realisation of the political power to be gained from the control of technical standards. While the PRC might have come to this awareness first, the US and Europe have since had a rude awakening about the missed opportunity. The privatised model of technical standards setting favoured by European and US markets relies upon the dynamics of financial competition to regulate behaviour. This is in stark contrast to the statist Chinese model.

#### Causes global backsliding.

Kendall-Taylor et. al 20 \*Andrea Kendall-Taylor, senior fellow and director of the Transatlantic Security Program at the Center for a New American Security, co-author of Democracies and Authoritarian Regimes; Erica Frantz is Assistant Professor of Political Science at Michigan State University; Joseph Wright is Professor of Political Science at Pennsylvania State University; (March/April 2020, “The Digital Dictators,” Foreign Affairs, <https://www.foreignaffairs.com/articles/china/2020-02-06/digital-dictators>)

The risk that technology will usher in a wave of authoritarianism is all the more concerning because our own empirical research has indicated that beyond buttressing autocracies, digital tools are associated with an increased risk of democratic backsliding in fragile democracies. New technologies are particularly dangerous for weak democracies because many of these digital tools are dual use: technology can enhance government efficiency and provide the capacity to address challenges such as crime and terrorism, but no matter the intentions with which governments initially acquire such technology, they can also use these tools to muzzle and restrict the activities of their opponents.

#### Democracy solves a litany of existential threats.

Diamond 19, Professor of Political Science and Sociology at Stanford University, Senior Fellow at the Hoover Institution, Senior Fellow at the Freeman Spogli Institute for International Studies, PhD in Sociology from Stanford University, (Dr. Larry, Ill Winds: Saving Democracy from Russian Rage, Chinese Ambition, and American Complacency, p. 199-202)

The most obvious response to the ill winds blowing from the world’s autocracies is to help the winds of freedom blowing in the other direction. The democracies of the West cannot save themselves if they do not stand with democrats around the world. This is truer now than ever, for several reasons. We live in a globalized world, one in which models, trends, and ideas cascade across borders. Any wind of change may gather quickly and blow with gale force. People everywhere form ideas about how to govern—or simply about which forms of government and sources of power may be irresistible—based on what they see happening elsewhere. We are now immersed in a fierce global contest of ideas, information, and norms. In the digital age, that contest is moving at lightning speed, shaping how people think about their political systems and the way the world runs. As doubts about and threats to democracy are mounting in the West, this is not a contest that the democracies can afford to lose. Globalization, with its flows of trade and information, raises the stakes for us in another way. Authoritarian and badly governed regimes increasingly pose a direct threat to popular sovereignty and the rule of law in our own democracies. Covert flows of money and influence are subverting and corrupting our democratic processes and institutions. They will not stop just because Americans and others pretend that we have no stake in the future of freedom in the world. If we want to defend the core principles of self-government, transparency, and accountability in our own democracies, we have no choice but to promote them globally. It is not enough to say that dictatorship is bad and that democracy, however flawed, is still better. Popular enthusiasm for a lesser evil cannot be sustained indefinitely. People need the inspiration of a positive vision. Democracy must demonstrate that it is a just and fair political system that advances humane values and the common good. To make our republics more perfect, established democracies must not only adopt reforms to more fully include and empower their own citizens. They must also support people, groups, and institutions struggling to achieve democratic values elsewhere. The best way to counter Russian rage and Chinese ambition is to show that Moscow and Beijing are on the wrong side of history; that people everywhere yearn to be free; and that they can make freedom work to achieve a more just, sustainable, and prosperous society. In our networked age, both idealism and the harder imperatives of global power and security argue for more democracy, not less. For one thing, if we do not worry about the quality of governance in lower-income countries, we will face more and more troubled and failing states. Famine and genocide are the curse of authoritarian states, not democratic ones. Outright state collapse is the ultimate, bitter fruit of tyranny. When countries like Syria, Libya, and Afghanistan descend into civil war; when poor states in Africa cannot generate jobs and improve their citizens’ lives due to rule by corrupt and callous strongmen; when Central American societies are held hostage by brutal gangs and kleptocratic rulers, people flee—and wash up on the shores of the democracies. Europe and the United States cannot withstand the rising pressures of immigration unless they work to support better, more stable and accountable government in troubled countries. The world has simply grown too small, too flat, and too fast to wall off rotten states and pretend they are on some other planet. Hard security interests are at stake. As even the Trump administration’s 2017 National Security Strategy makes clear, the main threats to U.S. national security all stem from authoritarianism, whether in the form of tyrannies from Russia and China to Iran and North Korea or in the guise of antidemocratic terrorist movements such as ISIS.1 By supporting the development of democracy around the world, we can deny these authoritarian adversaries the geopolitical running room they seek. Just as Russia, China, and Iran are trying to undermine democracies to bend other countries to their will, so too can we contain these autocrats’ ambitions by helping other countries build effective, resilient democracies that can withstand the dictators’ malevolence. Of course, democratically elected governments with open societies will not support the American line on every issue. But no free society wants to mortgage its future to another country. The American national interest would best be secured by a pluralistic world of free countries—one in which autocrats can no longer use corruption and coercion to gobble up resources, alliances, and territory. If you look back over our history to see who has posed a threat to the United States and our allies, it has always been authoritarian regimes and empires. As political scientists have long noted, no two democracies have ever gone to war with each other—ever. It is not the democracies of the world that are supporting international terrorism, proliferating weapons of mass destruction, or threatening the territory of their neighbors.

#### Emergence of smart cities depends on IoT applications of 5G interoperability standards---absent FRAND, excessive royalties will undermine sustainable development.

Schwartz 18, \*Matt Schwartz, Privacy Fellowship Coordinator at ACT, App Association; (March 2nd, 2018, “It’s Smart to be FRANDly: How the FRAND Commitment Will Determine the Future of Smart Cities”, https://actonline.org/2018/03/02/its-smart-to-be-frandly-how-the-frand-commitment-will-determine-the-future-of-smart-cities/)

In December, we [outlined](https://actonline.org/2017/12/18/smart-cities-connecting-your-community-through-technology/%5d) the emergence of Smart Cities – cities that harness technological innovations like internet of things (IoT) devices and data analytics to improve essential infrastructure in growing urban centers. The technological foundation of Smart Cities aims to improve public safety, better allocate resources, and meet the needs of citizens more quickly.

A central element to Smart Cities is the comprehensive network of sensors and devices implemented within buildings, roads, traffic signs, and parking meters that allows them to interact with public, and potentially private-owned, infrastructure. These sensors will “speak” to one another, communicating information about energy usage, traffic density, or other elements of city management that have traditionally either been analyzed separately or not tracked at all. The potential of Smart Cities allows data to flow from previously disconnected branches of the city and be processed in real-time, unlocking previously unknown insights.

The powerful interoperability of Smart Cities will rely heavily on standardized technologies developed in organizations like the IEEE, which is responsible for standardizing the wi-fi technology we use every day. Standardized technologies often include standard-essential patents (SEPs), which, like their name suggests, are patents declared essential to an industry standard by a standards-setting organization. In simple terms, one cannot implement the standardized technology without using the patent.

Like regular patents, the users of SEPs must pay royalties or licensing fees to the patent owner before they may use it. For example, if a manufacturing company wants to make an IoT device interoperable with a 5G network, the manufacturer must pay a licensing fee to the owner of the SEP that is essential to the 5G standard. SEPs play a vital role in the new innovations we enjoy and have come to expect, and because of the value of these patents, SEP holders have the ability to demand high license fees from those who wish to implement the standard. To offset this competition issue, many SEP holders voluntarily agree to license their SEPs to any willing licensee under fair, reasonable, and non-discriminatory (FRAND) terms.

While wi-fi and LTE are standards that will be vital to Smart City deployment, countless new standardized technologies are being developed that will be integral to any fully-operational Smart City. With reasonable access to SEPs, assured by the FRAND commitment, innovators can enjoy the legal and business certainty they need to compete. While the meaning of the FRAND commitment continues to be refined – as evidenced by the development of SEP best practices recently launched by the App Association in Europe – its foundations are well-established.

But what happens when SEP holders do not abide by the FRAND licensing commitment, or simply refuse to license at all? Sadly, small and medium-sized companies would be forced to accept untenable licensing terms, but more realistically, they would be priced out of using the standard altogether. As a result, it would impose a barrier to innovation that would result in fewer products offered to consumers or cities eager to implement IoT technologies. For example, many hope the rise of autonomous vehicles will be seamlessly integrated into the Smart City network. But how beneficial would it be if only some autonomous vehicle brands are able to license the technology needed to communicate with traffic lights, simply because of the market power of a chipmaker? The FRAND commitment is an important backstop to that unfortunate possibility.

It is vital for SEP holders to honor FRAND licensing terms, if not for small and medium-sized innovators, then for the sustainability of future Smart Cities. FRAND creates a platform for innovation, providing a floor on which companies can stand, innovate, and compete. If the foundation of the FRAND commitment is reneged, American innovators pay a steep price – not only do they lose a key component of product development and market entry, but they are also left with years of expensive negotiations and litigation if they choose to challenge the licensing practice. What’s more, the confidence developed in the open standards development system is shaken, and Smart Cities have fewer choices in IoT solutions for their future.

To achieve the promise of Smart Cities, a balanced standards ecosystem is essential. We must allow small and medium-sized developers to leverage industry standards for innovation and prevent cost-prohibitive royalty structures and negotiating practices that are detrimental to competition, while also ensuring that SEP owners can protect their intellectual property and be fairly compensated for its use. The FRAND commitment continues to be the best framework to achieve this balance, and adherence to its principles will determine the future and success of Smart Cities.

#### Climate change is anthropogenic and causes extinction---5G-enabled smart cities are critical for mitigation and adaptation.

Huseien 21, \*Ghasan Fahim Huseien is a research fellow at Department of Building, School of Design and Environment, National University of Singapore, Singapore; Dr. Kwok Wei Shah is presently an assistant professor and deputy program director with the Department of Building, School of Design and Environment, National University of Singapore, Singapore; (August 23rd, 2021, “Potential Applications of 5G Network Technology for Climate Change Control: A Scoping Review of Singapore”, https://www.mdpi.com/2071-1050/13/17/9720)

Currently, the entire planet is at risk due to continual climate change [1–3]. The recorded increase in average temperature across the world in the past hundred years, and the associated changes attributed to this, are known as global warming. Many scientists are convinced by the published evidence that this change is anthropogenic and resulted from the elevated emission levels of global greenhouse gases (GHGs) [4,5]. Gases such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone are responsible for the absorption and emission of thermal radiation. These changes in the relative quantities of the GHGs induce a proportional change in the amount of preserved solar energy. Presently, the accepted indicator for global warming is the sustained rise in the mean temperature worldwide. This definition is designed to account for the fact that there may be some localized exceptions to this rise. For example, there may be cooling experienced in a region while the global temperature may increase altogether, hence the need for average temperature. A key concern with the GHGs trapping of more heat in the atmosphere is that it affects both climate and short scale weather patterns. Consequently, it results in greater numbers of adverse weather events such as storms, heat waves, cold snaps, droughts, and fires [6]. Climate-related risks to health, livelihoods, food security, water supply, human safety, and economic growth are projected to increase with global warming of 1.5 ◦C [7] and further increase further at 2 ◦C, as shown in Figure 1. In addition, the risks to global aggregated economic growth due to the climate change impacts are projected to be lower at 1.5 ◦C than at 2 ◦C by the end of this century.

Carbon dioxide has the most substantial effect on global warming [8]. Although it was once assumed to have an ~100 year lifespan in the atmosphere, careful studies revealed that the situation is far worse, with three-quarters of the gas expected to remain for a time in the region of up to ~1000 years, with the remainder lasting for an indefinite period of time [9]. It was indicated that the present impacts of humanity on the atmosphere can certainly cause a long term problem [10]. Carbon dioxide is released when oil, coal, and other fossil fuels are burnt for the energy we use to power our homes, cars, and smartphones. By lessening its usage, we can curb our own contribution to climate change while saving money. The first challenge is eliminating the burning of coal, oil, and, eventually, natural gas. Oil is the lubricant of the global economy as it is hidden inside such ubiquitous items as plastic and corn, fundamental to the transportation of both consumers and goods. Coal is the substrate, supplying roughly half of the electricity worldwide, a percentage that is likely to grow according to the International Energy Agency (IEA). In fact, buildings contribute up to 43% of all the greenhouse gas emissions worldwide [11], even though investing in thicker insulation and other cost-effective as well as temperature-regulating strategies can save money in the long run. Investment in new infrastructures, or radical upgradation of the existing highways and transmission lines, may help to reduce greenhouse gas emissions, yielding economic growth in the developing countries.

Nations across the globe have kept very high targets to reducing their GHG discharges [12,13]. In order to meet these goals, considerable reductions in city energy usage is required. At a global scale, urban communities represent over half (55%) of the population, which is predicted to reach 68% by the middle of this century [14]. Urban areas claim ownership of the highest levels of energy use, gas emission, and also the largest local economy. As such, it is crucial for urban areas to reduce their consumption and utilize renewable sources wherever available to reduce their gas discharge levels. Smart cities often utilize digital sensors to measure and transmit data about the levels of GHGs in the city at that moment, as a means of tackling them [15]. The efficacy of such a system is thus reliant on the network used to collate and analyze the data collected as an extant network. The mobile telecommunications networks offer a convenient solution to this desire, as their pre-existence has the clear benefit of reducing costs compared to the design and implementation of a novel system. It is recognized that smart cities will certainly act as the key players meeting these ambitious targets [16,17]. In this study, we focused primarily on the potential applications of 5G network technology to control climate change in Singapore. In addition, a clear overview of the sustainability benefits of introducing 5G technology compatible smart cities, buildings, and farms in all aspects of urbanization is provided. Herein, the main purpose is to tackle the negative outcomes associated with anthropogenic climate change, with a particular focus on the contributions that are best made by the telecoms network operators.

Climate change is one of the most challenging problems that humanity has ever faced. Presently, hundreds of millions of lives, innumerable species, entire ecosystems, health, economy, and the future habitability of this planet are at risk. Fortunately, climate change is solvable, we just need to wisely exploit the existing technologies and sciences. Climate change mitigation is a pressing international need in which many management actions are required. The development of 5G technology has been largely driven by smart mobile devices and advanced communication technologies. It may thus serve as a technical enabler for a whole new range of business opportunities, energy, and facilities management, together with industrial applications. Moreover, it may enable different devices to work together seamlessly. Definitely, the 5G cellular network technology is expected to revolutionize the global industries with profound effects on the savings of energy, waste generation and recycling, and water resources management, thus reducing the climate change impacts.

#### Patent holdup is real and necessitates intervention, even if it can’t be systemically proven.

Contreras 19, \*Jorge Contreras, Professor, University of Utah S.J. Quinney College of Law; (2019, “MUCH ADO ABOUT HOLD-UP”, <https://www.illinoislawreview.org/wp-content/uploads/2019/08/Contreras.pdf>)

III. CAN WE PLEASE STOP SEARCHING FOR SYSTEMIC HOLD-UP?

It is not the purpose of this article to critique the data or methodologies used by researchers who claim that there is no evidence of systemic hold-up. Though questions remain, the data presented in the cited studies finding no empirical evidence of systemic hold-up present plausible descriptions of current markets for products such as smart phones and other connected technology devices. Instead, this critique is directed at the core assumption that runs through each of these studies: that a lack of evidence of systemic hold-up means that hold-up does not represent a threat that justifies policy intervention. In this Part, I argue that, notwithstanding the findings of these studies, patent hold-up in standardized product markets may indeed be a threat that merits preventative policy measures, but that those measures should be directed toward the prevention of well-understood and actionable forms of anticompetitive conduct rather than the economic phenomenon of hold-up.

A. The Absence of Systemic Hold-Up Does Not Mean that Hold-Up Does Not Occur

In a 2017 article, Galetovic and Haber utilize an extended analogy drawn from the field of Mayan archeology to make the point that scholars sometimes ignore the facts in front of them in order to cling to pre-formed (and empirically unsupported) beliefs.92 In this analogical tradition, I will use a hypothetical from public health epidemiology to illustrate a related point. Let us consider the often fatal and highly contagious viral infection Ebola. U.S. public health officials, aware of the dangerous effects of Ebola, might propose the implementation of prophylactic measures to prevent the spread of Ebola in the United States. Such measures might include early detection systems at U.S. hospitals, a network of Ebola experts ready to investigate suspected cases, and potential vaccines for particularly vulnerable populations. All of these measures, of course, would come at a cost. Those opposing the incurrence of this cost might argue that such measures are unjustified because there is no empirical evidence that Ebola is a problem in the U.S. After all, there are no documented outbreaks of the disease, and the only reported cases have been sporadic and linked to other factors (such as health workers returning from abroad). In fact, both lifespan and overall health in the United States have been improving steadily over the past several decades. Most declines in population health can be traced to causes such as tobacco use, poor dietary choices, lack of exercise and the like, but not to Ebola. Thus, because there is no evidence that Ebola outbreaks have occurred in the United States nor any linkage between decreased health and Ebola, and because the overall health of the United States population continues to improve, there is no justification for preventative measures to stop Ebola outbreaks in the United States.

This reasoning is, of course, fallacious and, in the case of a disease like Ebola, dangerously so. In the field of public health, prophylactic measures are often taken before a health risk affects a significant portion of the population. This is the reason for prophylactic measures in the first place. In the field of public health, it is widely recognized that risks arising from any number of environmental and pathogenic sources can be assessed based on laboratory analysis and test cases, without population-level epidemiological data. In fact, once population level data for such outbreaks is available, it is often too late: an epidemic has broken out and millions are at risk. Luckily, it is doubtful that public health officials would apply the fallacious reasoning outlined above to important public health decisions.

Curiously, however, this “Ebola fallacy” has taken root in the debate over patent hold-up. As discussed above, the purported lack of empirical evidence of system-wide patent hold-up is used as a justification for abandoning or forestalling policy interventions aimed at reducing the risk of hold-up. Because hold-up has not been detected at a systemic level, so the argument goes, it must not be a problem. Therefore, measures designed to prevent hold-up from occurring must be the result of gratuitous or over-zealous policy making. The logical fallacies in this argument should be apparent.

In fact, there are numerous examples of anticompetitive conduct by individual firms in markets that are not otherwise overrun by anticompetitive behavior. For example, in 2009, the Federal Trade Commission brought an action against pharmaceutical manufacturer Solvay and a group of generic drug manufacturers for violating Section 5 of the FTC Act by entering into an arrangement whereby the generic manufacturers agreed not to challenge Solvay’s patent on its AndroGel product and not to market their generic versions of AndroGel, in exchange for a significant payment by Solvay to each of the generic manufacturers (a so-called “pay for delay” scheme).94 The Supreme Court held in 2013 that such conduct was actionable and reversed the Eleventh Circuit’s dismissal of the FTC’s claim.95 Yet even in 2009, the year in which the FTC brought its action, of the 68 agreements settling patent disputes filed by pharmaceutical manufacturers with the FTC,96 the FTC estimated that only 19 of these (28%) were potential pay for delay agreements; and by 2014, the year after the Actavis decision, only 21 out of 160 such agreements (13%) were deemed by the FTC likely to represent illegal pay for delay schemes.97 Thus, while pharmaceutical industry patent settlements have attracted significant attention as potentially anticompetitive arrangements, most such settlements do not merit investigation by the FTC.98

An even more telling example is found in the area of mergers and acquisitions. During fiscal year 2016, a total of 1,832 merger and acquisition transactions were reported to the FTC and DOJ under the Hart-Scott-Rodino Antitrust Improvements Act.99 Of these, the FTC challenged only twenty-two (1.2%). 100 Thus, while some anticompetitive mergers may exist, the vast majority are not anticompetitive.101 But the absence of market-wide anticompetitive conduct in the area of mergers and acquisitions hardly excuses the handful of transactions that do present antitrust risks, nor does it suggest that mergers should not be subject to governmental monitoring and, when merited, enforcement.

B. Protective Measures May Already Be Working to Reduce Hold-Up

Another important factor that should be considered regarding the purported lack of empirical evidence of systemic hold-up is the effect that existing policy measures have already had in reducing hold-up. As noted above, the threat of patent hold-up was a primary motivating factor for many SDOs to adopt policies requiring the disclosure and licensing of SEPs. These policies have been in place for decades. In the United States, the first such policy was adopted in 1959 by the American Standards Association (the predecessor to today’s American National Standards Institute (ANSI).102 Today, every one of the more than 200 ANSI-accredited developers of American National Standards must adhere to ANSI’s essential requirements, including the adoption of such a licensing policy for SEPs. Similar policies have existed in European and international standards organizations since at least the 1980s.103 These policies, which were developed by SDOs in large part to reduce the likelihood of hold-up within standard-setting systems, have had several decades to work, and it is likely that the lack of observed hold-up in some studies can be attributed to the successful operation of these policies.

Similarly, antitrust and competition enforcement agencies in the U.S. and Europe have been aware of the potential for hold-up connected with standardization for many years. Accordingly, they have brought enforcement actions when it has been alleged that hold-up behavior has resulted in a violation of the antitrust laws. High-profile enforcement actions against patent holders such as Rambus, 104 Google 105 and Qualcomm106 send powerful deterrent signals to the market and warn others not to engage in similar behavior lest they, too, become the subject of agency enforcement. Like SDO policies, it is likely that the general market awareness of agency interest in standard-setting and hold-up has, to a degree, limited the amount of hold-up that is actually attempted in the marketplace, thereby limiting the direct evidence of hold-up as a systemic problem.

But do the deterrent effects of SDO and agency efforts to reduce hold-up signify that hold-up is not a problem? Certainly not. To reach such a conclusion would be perverse: akin to claiming that burglary is not a problem in a neighborhood that experiences reduced burglary rates after it has implemented an active neighborhood watch program and enhanced policing.

C. Indicia of Healthy Markets do not Prove the Absence of Anticompetitive Conduct

As noted above, one of the principal arguments advanced by commentators seeking to refute the “hold-up theory” is that markets for telecommunications products, namely smart phones, are robust – evidenced by increasing product functionality, decreasing consumer prices and rapid innovation -- and that this degree of robustness indicates that hold-up cannot be a problem in these markets.107 If hold-up were a problem in these markets, they reason, we would see product stagnation, stable (but high) prices, and a lack of competition – features associated with classic examples of hold-up in markets for products such as natural resources and agricultural goods.108

But this argument relies on a false syllogism: hold-up results in market dysfunction; if a market functions well, then it cannot be subject to hold-up. The weaknesses in this argument are multifold. First, hold-up may exist in individual instances without sufficient weight to affect overall market characteristics, particularly in a large global market such as mobile telecommunications. Thus hold-up may exist, even in a market that outwardly appears to be functioning well. Second, there is no valid counterfactual to use to compare the health and robustness of the market for mobile telecommunications products.109 Other consumer electronics devices, such as televisions and DVD players, do not compare well with mobile telecommunications devices, which have taken on a unique character in the modern networked economy. Thus, observing the strength of the market fails to answer the critical questions “compared to what?” and how much stronger the market might be (through more product diversity, functionality, price reduction) without hold-up?

A simple historical illustration is useful in this context. During the decade leading up to the enactment of the Sherman Antitrust Act of 1890, several major U.S. commodity markets (e.g., steel, salt, petroleum, coal, sugar, lead, and others) came under intense scrutiny for a variety of allegedly anticompetitive industrial arrangements. One might have argued that these markets, had they been subject to the sorts of anticompetitive collusion that the Sherman Act sought to address, should have seen reductions of output and increases in price. Yet, between 1880 and 1890, U.S. output of salt, petroleum, steel, and coal all increased significantly, and prices of steel, sugar and lead all dropped significantly.110 Do these positive market indicia demonstrate that the subject markets were not subject to anticompetitive collusion, and that the Sherman Act was not necessary? Certainly, investigations of these industries revealed significant cartel behavior. I would suggest that few commentators today would argue that the coal, steel, sugar and other major industrial producers of the late nineteenth century were innocent of collusive and anticompetitive conduct, or that the Sherman Act was not a necessary and beneficial measure for the U.S. economy.111 Yet, had we relied solely on the positive characteristics exhibited by these markets as proof that anticompetitive conduct did not exist, then perhaps the Sherman Act never would have been enacted.

By the same token, the fact that global markets for standardized products such as computers and smart phones appear to be thriving does not itself refute the possibility of hold-up nor the existence of anticompetitive conduct in these markets. Nor does it allow regulators and policy makers to drop their guard or cease to monitor these important industries.

### 1AC---Cyber Advantage

#### Advantage 2 is Cybersecurity:

#### Aggressive patent strategies create structural flaws in 5G standardization that imperils domestic cybersecurity---market competition reduces vulnerability and severity of attacks.

Duan 20, \*Charles Duan is a senior fellow and associate director of tech & innovation policy at the R Street Institute, where he focuses his research on intellectual property issues; (2020, “OF MONOPOLIES AND MONOCULTURES: THE INTERSECTION OF PATENTS AND NATIONAL SECURITY”, Santa Clara High Technology Law Journal, 36(4), 369-405. Retrieved from <https://www2.lib.ku.edu/login?url=https://www.proquest.com/scholarly-journals/monopolies-monocultures-intersection-patents/docview/2442966690/se-2?accountid=14556>)

III. COMPETITION AND CYBERSECURITY

In addition to the historical review done so far, another approach to understanding the relationship among patents, competition, and national security is to consider the role of cybersecurity. There is little doubt that computer system vulnerabilities that enable hacking and spread of computer exploits are a threat to the nation’s defenses, so better cybersecurity is a key part of national security strategy.155

Strong competition can thus complement national security by enhancing domestic cybersecurity, and patent assertion that unduly weakens competition detracts from cybersecurity.156 Competition promotes better cybersecurity in at least two ways. First, multiple studies show that competition encourages firms to improve their products on multiple vectors including cybersecurity. Second, competition avoids a situation that security experts call a “monoculture,” which increases vulnerability to severe cyberattacks. As former Secretary of Homeland Security Michael Chertoff wrote recently, “We need competition and multiple providers, not a potentially vulnerable technological monoculture,” to guarantee national security.157 Thus, cybersecurity provides a useful lens for understanding how unfettered patent assertion and licensing can detract from national security.

A. Cybersecurity as Competitive Value-Add

Competition enhances national security by reducing the incidence of technical vulnerabilities. That effect is especially important for security sensitive systems such as mobile telecommunications.

Intuitively, a causal chain from competition to cybersecurity makes logical sense. Computer security is a value-added benefit to consumers, so firms in competitive markets are likely to use security to gain an edge over their competitors.158 In monopolized markets, though, there may be less external impetus to test products for flaws, and the monopolist may choose to focus less on security and more on new product features or increased product quality.

Economic research confirms these hypotheses about competition leading to better cybersecurity. A 2009 empirical study of web browsers considered the impact of market concentration on the amount of time that vendors took to fix security vulnerabilities as they were discovered.159 The study found that the presence of more competitors correlated with faster cybersecurity response—a reduction of 8–10 days in response time per additional market rival.160 Similarly, business researchers in 2005 modeled incentives for firms to engage in sharing of cybersecurity information, and concluded that the “inclination to share information and invest in security technologies increases as the degree of competitiveness in an industry increases.”161 Another study found that, where two software firms are in competition, at least one will be willing to take on some degree of risk and responsibility for cybersecurity, whereas a monopoly software firm will consistently fail to accept such responsibility.162 To be sure, an unpublished study from 2017 found that some market concentration can make firms more responsive to cybersecurity issues, but only to a point: “being in a dominant position reduces the positive effect of having less competitors on the responsiveness of the vendor,” and indeed the “more dominant the firm is, the less rapid it is in releasing security patches.”163 This research confirms that competition is more conducive to cybersecurity.

It is not hard to see how this applies to emerging communication technologies markets. In the absence of competition, the above research suggests that device manufacturers, chip makers, and software developers will lack incentives to respond to vulnerabilities, to share information about cybersecurity practices and issues, and to take responsibility for security matters. Mobile phone chips have had their share of cybersecurity failures already.164 The best way to flush out ongoing and future cybersecurity issues is to maintain competitive pressure at all levels of the supply chain.

B. Vulnerabilities of “Monocultures”

A second reason why monopoly undermines cybersecurity is that monopoly leads to a “monoculture” of single-vendor products, opening the door to massive systemic failure in the case of a cyberattack. Computer researchers developed the theory of software monocultures in the early 2000s, in response to the regular phenomenon of computer viruses and other attacks spreading rapidly by exploiting flaws in the dominant operating system at the time, Microsoft Windows.165 Where a computer system such as Windows has a commanding share of users, a virus that exploits a flaw in that system can quickly spread to infect a whole interconnected ecosystem. An operating system monopoly thus enables fast and easy spread of cyberattacks, and better cybersecurity would be achieved through greater diversity in online systems.166 As one research group posited, “a network architecture that supports a collection of heterogeneous network elements for the same functional capability offers a greater possibility of surviving security attacks as compared to homogeneous networks.”167

There has been considerable study of the theory that computer monocultures are naturally more vulnerable to attacks.168 In one study, computer science researchers reviewed a catalog of 6,340 software vulnerabilities recorded in 2007, to compare whether comparable software would share the same flaws.169 Of the 2,627 vulnerabilities applicable to application software (as opposed to operating systems, web scripts, and other software components), only 29 (1.1%) applied to substitute products from different vendors but providing the same functionality.170 By contrast, different versions of a single software product were found to share vulnerabilities 84.7% of the time.171 Thus, software monocultures share exploitable flaws even when there is some variation in versions across the monoculture; by contrast, diversity in software is almost guaranteed to prevent a single flaw from affecting all users.

In the case of 5G and wireless mobile communications, a monoculture is an especially concerning possibility. To the extent that systems such as smart city sensors or communication networks are widely deployed in a monoculture fashion, a widespread attack could have devastating consequences, potentially blacking out a region and affecting essential services such as 911.172 A monoculture that is vulnerable to so-called “rootkits” or “backdoors”—maliciously installed software that enable bad actors to commandeer systems—could also enable mass surveillance or spying by private hackers or foreign governments.173 The presence of systems from multiple vendors would mitigate these possibilities.

#### Only maximizing redundancy and diversity prevents devastating attacks from single vulnerabilities.

Rajiv Shah 20, President of the Rockefeller Foundation. Former administrator of the United States Agency for International Development, graduate of the University of Michigan and the University of Pennsylvania, 2020, “Ensuring a trusted 5G ecosystem of vendors and technology,” https://www.aspi.org.au/report/ensuring-trusted-5g-ecosystem-vendors-and-technology

Why is cybersecurity seen as so critical for 5G networks? Because 5G isn’t just the next natural stage in the evolution of wireless networks. 5G is about more than movie downloads. The likely applications and use cases will become critical to the functioning of governments, companies and society, including cyber-physical and safety-critical systems that will rely on the network. Not only do we need to be concerned about the confidentiality of data and users on the network, but we also need to consider the impacts of an attacker potentially compromising the availability and integrity of the systems, including the risks of the attacker being able to take down the whole network at once.

Australian and many other governments have already identified telecommunications networks as critical national infrastructure that’s essential to the effective functioning of society and therefore requiring additional regulation and attention, and it’s easy to understand why.12 In Australia in recent months, we’ve seen the chaos caused by outages of electronic payment (EFTPOS) systems for a few hours, making it impossible for people to buy basic items because they’re unused to carrying cash.13

Now imagine the impact of a smart city suddenly losing all traffic sensor data and the ability to control traffic lights. An attacker could cause major accidents by maliciously changing the data being sent to traffic lights. In fact, given some of the potential applications enabled by 5G, it could be possible to cause major disruption by more subtle changes. If applications such as remote driving of vehicles rely on ultra-low latency, what would happen if an attacker introduced a small delay to some or all network traffic?

The increasing importance of the network, combined with the increased risk that a cyber breach will cause major real-world consequences, means that the cybersecurity of 5G networks must be a critical consideration, planned and accounted for from the outset. Risk management approaches should also consider the more sensitive functions that are used by national security and law enforcement authorities, such as compliance with legislation on telecommunications interception and data retention, which may create additional security risks.

Building an understanding of 5G security requires integrating security and the 5G network architecture. Both suffer from a major skills gap in Australia14 and globally,15 so we would expect a major shortage of professionals with a detailed understanding of both, exacerbated by the fact that 5G architectures are complex and still evolving.

One example is the debates about the separation of the ‘core’ and ‘edge’ components of a 5G network. Can they be effectively segregated so that a threat in the edge can’t affect the core? Australian authorities say they can’t be effectively segregated, whereas UK authorities appear to be suggesting they can. Without getting involved in the details of the debate here, it’s likely that the true answer is that it depends on architectural choices and complex overall system-level interactions. Concepts such as network slicing will make this even more complex. End users are given effective control and exclusive use of an end-to-end slice of the network, and attention will need to be paid to the security safeguards required to minimise the risk of them escaping their own virtual slice and getting access to other parts of the network.

Vendor trust and security

The issue of vendor trust and security has been prominent in discussions about 5G security. Australia and the US have announced decisions to bar certain vendors, the UK has been formulating a compromise approach,16 (although this seems to be still evolving) and active debates in Europe are seemingly close to reaching a conclusion.

The risks from using a particular vendor can be many and varied. Much commentary on the subject talks about hardware ‘backdoors’ being inserted by a vendor at the factory,17 but that’s probably not the biggest issue. In fact, it’s probably an unhealthy focus that can drive the debate onto specific component manufacturers, when the bigger risks probably come higher up the technology stack.

A much more worrying vendor risk occurs when carriers are critically dependent on vendors for maintaining the quality of service and so give the vendors access to the live network for support and maintenance. The nature of 5G networks as ‘software defined everything’ also means that there are security risks throughout the network that can be hidden in the complexity of software—vulnerabilities that are deliberately introduced by the vendor, or that come from genuine errors and oversights.

Different vendors have different approaches to and cultures of security. The extent to which they use approaches such as secure software development, system integrity validation and third-party supplier checks can be a useful guide, as well as their approach to the reporting and patching of security issues.

However, the control and ownership of vendors, in particular those from nation-states in which companies may be subject to extrajudicial direction, has, to date, been the main criterion used to measure vendor risk.18 This should be broadened to consider all sources of risk. As well as foreign ownership and control, vendor threats can come from insiders, such as rogue employees, even in a vendor from a trusted country, and also depend on the quality of the security culture and secure-by-design approaches used by a vendor. This leads to a spectrum of vendor risk levels that can be used to guide appropriate treatments.

We can sensibly decide to exclude very high risk vendors, but since no vendor will be zero-risk, other mitigation measures will be needed in addition. While, given the criticality of 5G networks, we should impose a high standard of cybersecurity control and risk management across the network even for the lowest risk vendors, additional measures may be needed for intermediate levels. It’s important that carriers understand these requirements and can factor the different security costs into their procurement decisions (so potentially avoiding the incentive to simply choose the cheapest supplier who isn’t excluded due to being very high risk).

Independent testing of vendor equipment may be of some use to assess and mitigate risk (see, for example the Huawei testing facility set up and used by the UK over the past few years), but it’s not just a matter of testing the product from the factory. For any software components, each new release will require retesting, and in a 5G world the software becomes the most critical layer. The public reports from the UK testing facility19 show a series of damning findings and a lack of any assurance that identified flaws are resolved effectively. This means that, at best, this approach can be only a small part of a broader strategy.

In some cases, architectural approaches can be used to mitigate the risk. For example, end-to-end encryption could be used to mitigate the risk that particular network equipment could have unnecessary access to user details and data on the network. However, if we look at the risk of an adversary seeking to completely disable a network, the vendor risk is much greater, as ultimately the end-to-end network works only if every component in the chain is working—RAN, core access and routing.

This means it isn’t just a matter of assessing and using a vendor with an acceptable level of risk. Any farmer will tell you to avoid monoculture—growing just one crop means that one disease can wipe you out overnight. Similarly, if a network is dependent on a single vendor and a vulnerability is found, the vendor becomes untrusted for some reason or the company collapses, the equipment will be almost impossible to replace, and entire networks can become at risk overnight.

Therefore, as well as vendor trust, we need to ensure vendor diversity and redundancy in design.

Operators need to have confidence that multiple vendors’ equipment can interoperate, and ideally have multiple vendors’ systems in service for each major function. This will provide resilience and options to reduce dependence on a particular vendor if circumstances change. In a given carrier’s network, there should be at least two vendors for each key equipment type, and across the market there should be four or more viable suppliers considered acceptable to use. These are bare minimums from a competition policy and resilience perspective; from a long-term resilience point of view, there should be as many vendors as possible, subject to ensuring that each has critical mass and is commercially sustainable in the long term.

#### Actors have the means and motivations to strike critical infrastructure.

Wintch 21, \*Timothy M. Wintch, an active-duty Major in the United States Air Force. He is currently a graduate student at the Oettinger School of Science & Technology Intelligence, National Intelligence University, in Bethesda, Maryland. Mr. Wintch has over 11 years of experience in command-and-control operations as an Air Battle Manager. He holds a Bachelor of Arts in Politics from the University of California, Santa Cruz, and a Master of Arts in Military Studies from American Military University. (April 20th, 2021, “PERSPECTIVE: Cyber and Physical Threats to the U.S. Power Grid and Keeping the Lights on”, https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/)

Among critical infrastructure sectors in the U.S., energy is perhaps the most crucial of the 16 sectors defined by the Department of Homeland Security. This sector is so vital because it provides the energy necessary to run every other critical infrastructure sector. However, the U.S. power grid, the backbone of the energy sector, is built upon an aging skeleton that is becoming increasingly vulnerable every day. Whether from terrorists or nation-states like Russia and China, the power grid is susceptible to not just physical attacks, but also to cyber intrusion as well. However, much of this threat can be mitigated if the U.S. takes the appropriate steps to safeguard the power grid and avoid a potential catastrophe in the future.

Since Sept. 11, 2001, terrorism on U.S. soil has been at the forefront of American consciousness. Critical infrastructure provides an appealing target because of the disproportionally large impact even a small attack can have on the sectors. In particular, the power grid represents a particularly lucrative target, both in terms of the ease of access and the large impact it can make. The National Research Council stated that the U.S. power grid is “vulnerable to intelligent multi-site attacks by knowledgeable attackers intent on causing maximum physical damage to key components on a wide geographical scale.”[[1]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn1) Additionally, the physical security of transmission and distribution systems is difficult due to the dispersed nature of these key components, which in turn is advantageous to attackers as it reduces the likelihood of their capture.[[2]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn2) From 2002-2012, approximately 2,500 physical attacks occurred against transmission lines and towers worldwide and approximately 500 attacks against transformer substations.[[3]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn3) Terrorists have the motivation to attack the U.S. power grid but the very nature of the grid makes it highly vulnerable. The power grid is not only at risk from physical attacks, but also nation-state cyberattacks.

One nation that has shown both the capability and intent to use attacks against critical energy infrastructure is Russia, as demonstrated in their 2015 annexation of Crimea from Ukraine. A Russian cyber threat group known as Sandworm, which used its BlackEnergy malware, attacked Ukrainian computer systems that provide remote control of the Ukraine power grid.[[4]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn4) This attack, and another in 2016, each left the capital Kiev without power, prompting cyber experts to raise concern about the same malware already existing in NATO and the U.S. power grids.[[5]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn5) In any conflict between Russia and NATO, not only would similar cyberattacks pose a threat, but so would potential physical attacks severing fuel oil and natural gas lines to Western Europe. Russia has both the capability and intent to attack critical infrastructure, particularly power grids, during future conflicts in their “hybrid warfare” approach.

Another nation that has the capability to attack critical energy infrastructure is China, representing a threat to not just the U.S. energy infrastructure but also that of our allies whose support would be vital in a major conflict. A recent NATO report highlighted this threat from China’s Belt and Road Initiative, stating that “[China’s] foreign direct investment in strategic sectors [such as energy generation and distribution] …raises questions about whether access and control over such infrastructure can be maintained, particularly in crisis when it would be required to support the military.”[[6]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn6) Like Russia, China has been active with cyber intrusions in U.S. energy infrastructure. The Mission Support Center at Idaho National Laboratory characterized these as attacks as “multiple intrusions into US ICS/SCADA [Industrial Control Systems/Supervisory Control and Data Acquisition] and smart grid tools [that] may be aimed more at intellectual property theft and gathering intelligence to bolster their own infrastructure, but it is likely that they are also using these intrusions to develop capabilities to attack the [bulk electric system], as well.”[[7]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn7) China, therefore, has both the capability and intent to conduct cyber intrusions and attacks for myriad reasons.

Another arm of this threat is the reliance the U.S. energy industry has on imports from China, especially transformers. In early 2020, federal officials seized a transformer in the port of Houston that had been imported by the Jiangsu Huapeng Transformer Company before sending it to Sandia National Laboratory in Albuquerque. Sandia is contracted by the U.S. Department of Energy for mitigating national security threats.[[8]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn8) The Wall Street Journal reported that “Mike Howard, chief executive of the Electric Power Research Institute, a utility-funded technical organization, said that the diversion of a huge, expensive transformer is so unusual – in his experience, unprecedented – that it suggests officials had significant security concerns.”[[9]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn9) Previously destined for the Washington Area Power Administration’s Ault, Colo., substation, the transformer is believed to have been seized due to “backdoor” exploitable hardware emplaced by the Chinese prior to shipment.[[10]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn10) Shortly after these events, President Trump issued Executive Order 13920, “[Securing the United States Bulk-Power System](https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-securing-united-states-bulk-power-system/),” essentially limiting the import of Chinese-built critical energy infrastructure components due to concerns about cybersecurity.[[11]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn11) Interestingly, Jiangsu Huapeng “boasted that it supported 10 percent of New York City’s electricity load.”[[12]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn12)

Franklin Kramer, the former Assistant Secretary of Defense for International Security Affairs, testified before a U.S. House of Representatives Energy and Commerce subcommittee during an energy and power hearing in 2011 and said that a “highly-coordinated and structured cyber, physical, or blended attack on the bulk power system, however, could result in long-term (irreparable) damage to key system components in multiple simultaneous or near-simultaneous strikes.” He added that “an outage could result with the potential to affect a wide geographic area and cause large population centers to lose power for extended periods.”[[13]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn13) Even the inclusion of features such as smart grids to the overall grid structure poses new vulnerabilities through their connectivity. Kramer stated that “such connectivity means that the distribution system could be a key vector for a national security attack on the grid.”[[14]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn14)

#### Those attacks cause accidental nuclear escalation.

Klare 19, \*Michael T. Klare is a professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association; (November 19th, “Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation”, https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation)

Yet another pathway to escalation could arise from a cascading series of cyberstrikes and counterstrikes against vital national infrastructure rather than on military targets. All major powers, along with Iran and North Korea, have developed and deployed cyberweapons designed to disrupt and destroy major elements of an adversary’s key economic systems, such as power grids, financial systems, and transportation networks. As noted, Russia has infiltrated the U.S. electrical grid, and it is widely believed that the United States has done the same in Russia.[12](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12) The Pentagon has also devised a plan known as “Nitro Zeus,” intended to immobilize the entire Iranian economy and so force it to capitulate to U.S. demands or, if that approach failed, to pave the way for a crippling air and missile attack.[13](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12)

The danger here is that economic attacks of this sort, if undertaken during a period of tension and crisis, could lead to an escalating series of tit-for-tat attacks against ever more vital elements of an adversary’s critical infrastructure, producing widespread chaos and harm and eventually leading one side to initiate kinetic attacks on critical military targets, risking the slippery slope to nuclear conflict. For example, a Russian cyberattack on the U.S. power grid could trigger U.S. attacks on Russian energy and financial systems, causing widespread disorder in both countries and generating an impulse for even more devastating attacks. At some point, such attacks “could lead to major conflict and possibly nuclear war.”[14](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote14)

These are by no means the only pathways to escalation resulting from the offensive use of cyberweapons. Others include efforts by third parties, such as proxy states or terrorist organizations, to provoke a global nuclear crisis by causing early-warning systems to generate false readings (“spoofing”) of missile launches. Yet, they do provide a clear indication of the severity of the threat. As states’ reliance on cyberspace grows and cyberweapons become more powerful, the dangers of unintended or accidental escalation can only grow more severe.

#### Cyber-compromised NC3 causes nuclear war.

Klare 19, \*Michael T. Klare is a professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association; (November 19th, “Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation”, <https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation>)

The Nuclear-Cyber Connection

These links exist because the NC3 systems of the United States and other nuclear-armed states are heavily dependent on computers and other digital processors for virtually every aspect of their operation and because those systems are highly vulnerable to cyberattack. Every nuclear force is composed, most basically, of weapons, early-warning radars, launch facilities, and the top officials, usually presidents or prime ministers, empowered to initiate a nuclear exchange. Connecting them all, however, is an extended network of communications and data-processing systems, all reliant on cyberspace. Warning systems, ground- and space-based, must constantly watch for and analyze possible enemy missile launches. Data on actual threats must rapidly be communicated to decision-makers, who must then weigh possible responses and communicate chosen outcomes to launch facilities, which in turn must provide attack vectors to delivery systems. All of this involves operations in cyberspace, and it is in this domain that great power rivals seek vulnerabilities to exploit in a constant struggle for advantage.

The use of cyberspace to gain an advantage over adversaries takes many forms and is not always aimed at nuclear systems. China has been accused of engaging in widespread cyberespionage to steal technical secrets from U.S. firms for economic and military advantages. Russia has been accused, most extensively in the Robert Mueller report, of exploiting cyberspace to interfere in the 2016 U.S. presidential election. Nonstate actors, including terrorist groups such as al Qaeda and the Islamic State group, have used the internet for recruiting combatants and spreading fear. Criminal groups, including some thought to be allied with state actors, such as North Korea, have used cyberspace to extort money from banks, municipalities, and individuals.[4](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote04) Attacks such as these occupy most of the time and attention of civilian and military cybersecurity organizations that attempt to thwart such attacks. Yet for those who worry about strategic stability and the risks of nuclear escalation, it is the threat of cyberattacks on NC3 systems that provokes the greatest concern.

This concern stems from the fact that, despite the immense effort devoted to protecting NC3 systems from cyberattack, no enterprise that relies so extensively on computers and cyberspace can be made 100 percent invulnerable to attack. This is so because such systems employ many devices and operating systems of various origins and vintages, most incorporating numerous software updates and “patches” over time, offering multiple vectors for attack. Electronic components can also be modified by hostile actors during production, transit, or insertion; and the whole system itself is dependent to a considerable degree on the electrical grid, which itself is vulnerable to cyberattack and is far less protected. Experienced “cyberwarriors” of every major power have been working for years to probe for weaknesses in these systems and in many cases have devised cyberweapons, typically, malicious software (malware) and computer viruses, to exploit those weaknesses for military advantage.[5](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote05)

Although activity in cyberspace is much more difficult to detect and track than conventional military operations, enough information has become public to indicate that the major nuclear powers, notably China, Russia, and the United States, along with such secondary powers as Iran and North Korea, have established extensive cyberwarfare capabilities and engage in offensive cyberoperations on a regular basis, often aimed at critical military infrastructure. “Cyberspace is a contested environment where we are in constant contact with adversaries,” General Paul M. Nakasone, commander of the U.S. Cyber Command (Cybercom), told the Senate Armed Services Committee in February 2019. “We see near-peer competitors [China and Russia] conducting sustained campaigns below the level of armed conflict to erode American strength and gain strategic advantage.”

Although eager to speak of adversary threats to U.S. interests, Nakasone was noticeably but not surprisingly reluctant to say much about U.S. offensive operations in cyberspace. He acknowledged, however, that Cybercom took such action to disrupt possible Russian interference in the 2018 midterm elections. “We created a persistent presence in cyberspace to monitor adversary actions and crafted tools and tactics to frustrate their efforts,” he testified in February. According to press accounts, this included a cyberattack aimed at paralyzing the Internet Research Agency, a “troll farm” in St. Petersburg said to have been deeply involved in generating disruptive propaganda during the 2016 presidential elections.[6](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote06)

Other press investigations have disclosed two other offensive operations undertaken by the United States. One called “Olympic Games” was intended to disrupt Iran’s drive to increase its uranium-enrichment capacity by sabotaging the centrifuges used in the process by infecting them with the so-called Stuxnet virus. Another left of launch effort was intended to cause malfunctions in North Korean missile tests.[7](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote07) Although not aimed at either of the U.S. principal nuclear adversaries, those two attacks demonstrated a willingness and capacity to conduct cyberattacks on the nuclear infrastructure of other states.

Efforts by strategic rivals of the United States to infiltrate and eventually degrade U.S. nuclear infrastructure are far less documented but thought to be no less prevalent. Russia, for example, is believed to have planted malware in the U.S. electrical utility grid, possibly with the intent of cutting off the flow of electricity to critical NC3 facilities in the event of a major crisis.[8](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote08) Indeed, every major power, including the United States, is believed to have crafted cyberweapons aimed at critical NC3 components and to have implanted malware in enemy systems for potential use in some future confrontation.

Pathways to Escalation

Knowing that the NC3 systems of the major powers are constantly being probed for weaknesses and probably infested with malware designed to be activated in a crisis, what does this say about the risks of escalation from a nonkinetic battle, that is, one fought without traditional weaponry, to a kinetic one, at first using conventional weapons and then, potentially, nuclear ones? None of this can be predicted in advance, but those analysts who have studied the subject worry about the emergence of dangerous new pathways for escalation. Indeed, several such scenarios have been identified.[9](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote09)

The first and possibly most dangerous path to escalation would arise from the early use of cyberweapons in a great power crisis to ~~paralyze~~ undermine the vital command, control, and communications capabilities of an adversary, many of which serve nuclear and conventional forces. In the “fog of war” that would naturally ensue from such an encounter, the recipient of such an attack might fear more punishing follow-up kinetic attacks, possibly including the use of nuclear weapons, and, fearing the loss of its own arsenal, launch its weapons immediately. This might occur, for example, in a confrontation between NATO and Russian forces in east and central Europe or between U.S. and Chinese forces in the Asia-Pacific region.

Speaking of a possible confrontation in Europe, for example, James N. Miller Jr. and Richard Fontaine wrote that “both sides would have overwhelming incentives to go early with offensive cyber and counter-space capabilities to negate the other side’s military capabilities or advantages.” If these early attacks succeeded, “it could result in huge military and coercive advantage for the attacker.” This might induce the recipient of such attacks to back down, affording its rival a major victory at very low cost. Alternatively, however, the recipient might view the attacks on its critical command, control, and communications infrastructure as the prelude to a full-scale attack aimed at neutralizing its nuclear capabilities and choose to strike first. “It is worth considering,” Miller and Fontaine concluded, “how even a very limited attack or incident could set both sides on a slippery slope to rapid escalation.”[10](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote10)

What makes the insertion of latent malware in an adversary’s NC3 systems so dangerous is that it may not even need to be activated to increase the risk of nuclear escalation. If a nuclear-armed state comes to believe that its critical systems are infested with enemy malware, its leaders might not trust the information provided by its early-warning systems in a crisis and might misconstrue the nature of an enemy attack, leading them to overreact and possibly launch their nuclear weapons out of fear they are at risk of a preemptive strike.

“The uncertainty caused by the unique character of a cyber threat could jeopardize the credibility of the nuclear deterrent and undermine strategic stability in ways that advances in nuclear and conventional weapons do not,” Page O. Stoutland and Samantha Pitts-Kiefer wrote in 2018 paper for the Nuclear Threat Initiative. “[T]he introduction of a flaw or malicious code into nuclear weapons through the supply chain that compromises the effectiveness of those weapons could lead to a lack of confidence in the nuclear deterrent,” undermining strategic stability.[11](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote11) Without confidence in the reliability of its nuclear weapons infrastructure, a nuclear-armed state may misinterpret confusing signals from its early-warning systems and, fearing the worst, launch its own nuclear weapons rather than lose them to an enemy’s first strike. This makes the scenario proffered in the 2018 NPR report, of a nuclear response to an enemy cyberattack, that much more alarming.

#### Cracking down on anticompetitive patent licensing reintroduces competition—solves cybersecurity

Duan 20, \*Charles Duan is a senior fellow and associate director of tech & innovation policy at the R Street Institute, where he focuses his research on intellectual property issues; (2020, “OF MONOPOLIES AND MONOCULTURES: THE INTERSECTION OF PATENTS AND NATIONAL SECURITY”, Santa Clara High Technology Law Journal, 36(4), 369-405. Retrieved from <https://www2.lib.ku.edu/login?url=https://www.proquest.com/scholarly-journals/monopolies-monocultures-intersection-patents/docview/2442966690/se-2?accountid=14556>)

IV. LESSONS AND POLICY DIRECTIONS

The above discussion shows that patent protection can have mixed effects on national security: On the one hand, patents can encourage innovation that ensures domestic technological leadership and produces useful security-protective technologies; on the other hand, patents can stifle innovation-producing and cybersecurity-enhancing competition and can stymie the government’s own ability to achieve national security goals. To navigate the complex effects of patent policy on national security, policymakers may consider the following recommendations as guideposts.

A. Anticompetitive Patent Licensing

An area of particular concern should be the use of patents and patent licensing strategies to diminish competition or put up roadblocks to new entrants. Policymakers should certainly not support these abuses of the patent system, and indeed should take steps to prevent them.

In the mobile communications space, patent licensing already plays an outsized role. There are reportedly between 250,000 and 314,000 patents on the smartphone alone, and litigation over cell phone technologies has lasted decades by now. Patents will thus inevitably have an impact on technologies like 5G or the Internet of Things, so the question is what that impact will be.

Patents are supposed to encourage innovation, but research finds that patents alone will not do so; competition is another requirement. A 2015 study considered the impact of competition policy and patent strength on innovation among European firms, measured in terms of research and development spending.183 Initially, the study compared firms in countries with strong patent laws against those in countries with weaker patent laws, and found that patent protection has “no effect on R&D intensity,” a conclusion consistent with multiple other studies.184 However, the study found that when a major competition reform went into effect, strong-patent countries enjoyed a boost in innovation greater than that experienced in weak-patent countries.185 In other words, strong patent protection is complementary to strong competition; the former does not promote innovation without the latter. The practical import of this research is that patent protection is beneficial up to a point, but to the extent that patents—or, more commonly, legal strategies involving patents—overreach to suppress competition, that overreach should be cause for concern.

Yet today, strategic patent behavior contrary to competition is prevalent. The Federal Trade Commission’s ongoing lawsuit against mobile phone chip manufacturer Qualcomm, for example, challenges Qualcomm’s practice of refusing to sell chips to any phone manufacturer who does not first pay a hefty sum for patent licenses—even if the manufacturer does not actually have need for all those licenses.186 To the extent that Qualcomm’s “no license, no chips” practice is in fact anticompetitive—that is what the courts overseeing the case will decide—monopolization of that market could substantially harm cybersecurity for the reasons noted above.187 The company’s about-50% market share in the advanced mobile chip market 188 means that there is a virtual monoculture of Qualcomm chips already, and there are ongoing concerns about security vulnerabilities in those chips.189 It is thus puzzling that some have opposed the FTC litigation on the grounds that it is making the United States “less competitive in the global 5G arms race.”190 As one scholar explains, this rhetoric “smacks of ‘national champion’ thinking” and ultimately fails to ensure that “national security warnings are being balanced against competitive imperatives.”191

With respect to emerging information technologies, policymakers should be concerned that a leading firm could undertake similar patent licensing strategies to control the market. Indeed, the district court in the Qualcomm litigation found that Nokia and Ericsson already “have imitated Qualcomm’s practice” because it is “more lucrative.”192

### 1AC---Plan

#### Plan: The United States federal judiciary should substantially increase prohibitions on private sector conduct that is more restrictive of competition than reasonably necessary to enable creation of information technology standards.

### 1AC---Solvency

#### Solvency:

#### The plan strengthens FRAND effectiveness while enabling SEP holders to capture appropriate royalties---strikes the best competition-innovation balance.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf)

3. Application of the Basic Legal Principles

The antitrust principle is straightforward: industry-wide collaboration through SSOs to establish procompetitive standards is permitted only if it is no more restrictive of competition than reasonably necessary to enable creation of the standards. When standard setting predictably creates technology monopolies that, if unrestrained, will enable anticompetitive ex post opportunism that would otherwise not occur, an SSO that does not take effective measures to pre- vent or minimize such ex post opportunism engages in conduct that is more restrictive of competition than necessary. In that case, the SSO and, in appropriate cases, its members, may well violate Section 1 of the Sherman Act.

Under this principle, SSO procedures and FRAND rules should be evaluated based on whether they lead to reasonable SEP royalties, using the competitive ex ante licensing standard discussed above, which has been adopted by the courts in patent law. Put differently, FRAND rules should be evaluated based on their ability to prevent SEP holders from obtaining more than the ex ante value of their technology from implementers.

This limitation would not prevent a SEP holder from proﬁting, perhaps greatly, from participating in the SSO and having its patented technology included in the standard. The SEP holder continues to be rewarded for its technology because the inclusion of its technology in the standard can still greatly increase the volume of licensing opportunities available to the SEP holder.

Whether a particular set of FRAND rules are sufficiently effective in preventing ex post opportunism will depend on the particular circumstances. The procedural unfolding of the case will also depend upon the circumstances. As a general matter, the case would probably be structured as an ordinary Rule of Reason case.82

First, the plaintiff would have to demonstrate harm to competition as a result of the collaboration of the SSO’s members, many of which compete with one another. In this case, the harm to competition would stem from the ability of the SEP holder to exercise monopoly power by obtaining royalties in excess of the competitive, ex ante level. The decision to include patented technologies in the standard would be the allegedly unlawful agreement. Notably, the court need not determine what a FRAND royalty is; it would suffice to determine that market power has been created or exercised, and that existing SSO rules and policies were not adequate to prevent the competitive harm. The defendant, which could be the SSO or perhaps one or more SSO members, would win at this point if the plaintiff failed to show harm to competition. If might fail if the standard faces substantial competition and the court concludes that the SEP holder therefore does not have market power or if the SSO’s rules and policies are found to be effective in preventing ex post opportunism, even if the plaintiff or even the court thinks that other rules and policies would be preferable.

Second, if the plaintiff makes the requisite showing of harm to competition, the defendant(s) would then have to show some procompetitive justiﬁcation— in this case, the beneﬁts of the standard. These two initial steps should be straightforward.

Third, if as is likely the defendant is able to show a procompetitive justiﬁcation, the plaintiff would have to show that the SSO could have used available, reasonable alternatives to realize the efficiency beneﬁts with less or none of the competitive harms. The plaintiff might identify reasonable alternatives that would have led to a different standard, based on including unpatented technology in the standard or perhaps involving fewer SEPs or fewer owners of SEPs, which would be less subject to patent holdup. More likely, the plaintiff could suggest alternative SSO rules that would not change the standard, but would reduce the likelihood or extent of ex post opportunism. For example, the plaintiff might suggest more rigorous FRAND-type rules, such as rules that set forth more precise principles on which FRAND royalties are to be determined and the circumstances under which SEP holders might seek injunctions.

Fourth, the burden would then shift to the defendant(s) to show that the beneﬁts of the standard could not have been realized if the SSO had adopted any of the proffered alternatives or that those alternatives were unrealistic.83 The plaintiff would be entitled to judgment if the court concludes that those beneﬁts could have been realized with less competitive harm if the SSO had adopted the standard with different IPR rules or policies.

Our overall sense, based on experience and the empirical literature, is that the extant FRAND rules are generally useful, but tend to be inadequate because they are imprecise and leave unresolved such critical issues as (a) the meaning of a reasonable royalty, even conceptually; (b) the meaning of “non-discriminatory;” (c) to whom licenses must be offered; and (d) under what circumstances may a SEP holder obtain an injunction.84 These imprecise FRAND commitments are therefore not sufficient to adequately prevent ex post opportunism. The recent revisions to IEEE’s FRAND policy represent a signiﬁcant step in the right direction, but even this advance leaves important questions unanswered.85 If FRAND rules are inadequate in these ways, litigation involving extant FRAND rules would likely be resolved only at the ﬁnal, fourth step. The defendant would be able to demonstrate the beneﬁts created by the standard; the plaintiff would be able to demonstrate the creation of market power and that other reasonable and practical rules or policies would ameliorate the problem. The case would thus turn on whether the defendant is able to demonstrate that signiﬁcant beneﬁts associated with standardization could not have been realized if the SSO had adopted those other rules or policies.

The court would have available a variety of possible remedies if the plaintiff prevails. Implementers that paid supracompetitive royalties or were unlawfully excluded in whole or in part from product markets as a result of the inadequate FRAND policies would be entitled to damages and, in some cases, to treble damages.86 If the unlawful SSO conduct is regarded as the collective action of the SSO and its members, which is likely to be the case in most instances, SSO members would be jointly and severally liable for the damages. Forward-looking injunctive relief aimed at restoring competition would need to be fashioned to the requirements of the individual case. For example, a court could order the SSO to adopt a new rule or policy proposed by the plaintiff. If the court is reluctant to take on that governance role, it might give the SSO a period of time—maybe ninety days—to develop a rule, subject to the court’s ultimate approval, which would adequately ameliorate the competitive problem created by the SSO. Alternatively or in addition, the court might order the parties to attempt to negotiate a rule or policy on which they can agree. And, depending on the circumstances, the court might order SEP holders, including at least those that were defendants in the case, to comply with the new SSO rules and policies.

#### Threatening antitrust liability lures SSO’s into adopting best practices.

Lemley & Shapiro 13, \*Mark Lemley is the William H. Neukom Professor at Stanford Law School and a partner at Durie Tangri LLP; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business, University of California at Berkeley and a Senior Consultant at Charles River Associates; (2013, “A SIMPLE APPROACH TO SETTING REASONABLE ROYALTIES FOR STANDARD-ESSENTIAL PATENTS”, (https://faculty.haas.berkeley.edu/shapiro/frand.pdf)

Under our approach, many of these issues should become moot, since the patentee cannot obtain an injunction (or transfer the patent to someone who can) against a willing licensee, and since competitors are not involved in jointly setting the reasonable royalty rate. If SSOs set clear, reasonable rules following the best practices we recommend, and parties follow those rules, there should be little or no need for antitrust to intervene. Indeed, even the risk of non-disclosure of a patent is lessened, since the patentee has committed to license its essential patents whether or not it discloses them. For the most part, the rules we have described are self-executing, meaning that even if a party tries to break the rules set by the SSO there still may be no need for antitrust to intervene. Thus, we suggest that parties who abide by these procedures—patentees, implementers, and the SSOs themselves—should be immune from antitrust liability for activities that merely follow those rules.107 They have entered into an arrangement that is on balance good for competition, one that allows patentees to receive reasonable royalties but prevents holdup and reduces the risk of monopolization by trickery.

The fact that antitrust remains a last resort available when SSOs don’t follow best practices may have two practical benefits, however. First, under our approach the promise of avoiding the risk of antitrust liability will be a powerful incentive for both SSOs and patent owners to adopt the best practices we propose. Second, the risk of antitrust liability may be relevant when an individual patentee wants to adopt best practices but the SSO governing the standard has not yet done so. We propose that a patentee that unilaterally commits to the FRAND procedures we describe here should be immune from antitrust liability for following these procedures.108 A patentee’s unilateral binding commitment to arbitration could be enforced whether or not it was elicited by an SSO. Thus, just as the prospect of antitrust immunity might lure SSOs to adopt best practices, it might also lure patentees to implement those practices even if the SSO has not done so. Given the large number of standard-essential patents based on preexisting standards,109 and given that SSOs tend to update their IP rules rather slowly,110 this is not a small matter.

#### Only antitrust enforcement creates a consumer-action feature that counterbalances SSO’s conspiratorial incentives---private action fails.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, <https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf>)

2. Why Antitrust Enforcement Is Necessary

Some SSO members have an interest in ensuring that the SSO takes steps to minimize the potential harms from the SEP holders’ monopoly power, and this undoubtedly explains in part why most SSOs have adopted FRAND policies or similar requirements. But, as shown in the economic model in the Appendix,73 SSOs cannot in general be counted on to adopt effective FRAND policies. The bases for this conclusion, which is central to our argument for the applicability of Section 1 to SSO FRAND rules, can be summarized as follows.74

First, the SSO members collectively have an interest in permitting SEP holders to charge supracompetitive royalties that elevate the downstream price of compliant devices to the monopoly level. Doing so will enable the members in aggregate to collect increased revenues from consumers, and thus to generate increased profits that in theory could be shared by all the members. In other words, supracompetitive royalties can enrich industry participants as a group at the expense of final consumers. This fact alone should serve as a clear and strong signal regarding the dangers of counting on SSOs to implement effective FRAND policies: if the SSO members negotiate efficiently, the outcome will be just as bad for consumers as if the members agreed to fix downstream prices.75 The fundamental problem is that final consumers are not at the table when the SSO rules are negotiated.

Second, SSO members that own SEPs but earn little or no profits as implementers have a powerful self-interest in being able to exercise the ex post monopoly power associated with their SEPs. Because SSO policies are usually determined by a consensus process, these members will likely be able to block the adoption of fully effective FRAND policies. Moreover, these SSO members often have the greatest interest in SSO patent policies. Since much of their income may be attributable to patent licensing, they can be expected to devote substantial resources to block the adoption of FRAND policies that effectively prevent patent holdup.

Third, even SSO members that earn significant profits as implementers may have mixed incentives if they also own SEPs, which can also lead to weak or in-effective FRAND rules. In the Appendix, we show that, if the requisite share of votes in the SSO are cast by firms whose share of SEP royalties is at least as large as their share of downstream profits, and if these firms can coordinate their voting over the FRAND rules, then an SSO unconstrained by antitrust laws will establish FRAND rules leading to an outcome no better for consumers than would result from an integrated monopolist controlling all SEPs and all downstream sales.76

Fourth, even SSO members that are downstream implementers and own few, if any, SEPs may have only a modest interest in promoting effective policies to restrict ex post opportunism. Because all implementers will be subject to the opportunism, all of them will face increased licensing costs, and therefore will likely be able to pass on most or all of the increased costs to their customers.77 Furthermore, these implementers might not be especially active or effective in the standard-setting process for free-riding or public-good reasons, especially if SEP royalties constitute only a relatively small portion of the costs of their standard-implementing products. Public choice theory predicts that the highly motivated SEP holders are likely to have the greatest influence over patent policies.

Empirical evidence bears out these concerns. As a starting point, we find it striking that SSO FRAND rules are almost always quite vague.78 Notably, SSOs in which SEP holders are more prevalent tend to have weaker FRAND rules.79 Further, to our knowledge, SSOs have made almost no effort to enforce their FRAND rules and have, instead, left enforcement efforts to others.80 This evidence raises serious doubts about the effectiveness of the existing FRAND rules in preventing ex post opportunism.

# 2AC

## ADVANTAGE---INNOVATION

### 2AC---!---Democracy

#### Backsliding creates a confluence of escalatory factors---state collapse, civil war, WMD terrorism---that’s Diamond.

### 2AC---!---Warming

#### Warming causes extinction---adverse weather, drought, famine, and heat stroke threaten planetary habitability---that’s Huseien.

### AT: Patent Innovation now

Patent innovation in general is not our impact, there is less innovation in 5G now

### AT: SSOs Work

#### AFF ev

Michael A. Carrier 3. Assistant Professor at the Rutgers University School of Law-Camden. "Why Antitrust Should Defer to the Intellectual Property Rules of Standard-Setting Organizations: A Commentary on Teece & Sherry." Minnesota Law Review. 2003. https://www.researchgate.net/publication/228171398\_Why\_Antitrust\_Should\_Defer\_to\_the\_Intellectual\_Property\_Rules\_of\_Standard-Setting\_Organizations\_A\_Commentary\_on\_Teece\_Sherry

B. SSO RULES RESTRICTING INTELLECTUAL PROPERTY

SSO search, disclosure, and licensing rules do not have direct adverse effects on competition, such as harming consumers or raising price. Rather, they have significant procompetitive justifications.

Search rules merely require SSO members to search for IP that might read on a standard, an obligation that does not lead to anticompetitive effects.82 Disclosure rules provide useful information to members deciding on a standard. In particular, they inform the members of the SSO of the intellectual property that would be implicated by the selection of certain standards. Disclosure rules, again, differ from informationsharing arrangements that have warranted antitrust scrutiny.83 For rather than abetting the sharing among competitors of sensitive price information that reduces competition, the information produced by such rules prevents the strategic hiding and ex post exploiting of IP, activity that serves no legitimate purpose.

Licensing rules are even more critical in avoiding the holdup problem of patentees imposing onerous licensing terms after the adoption of the standard. They thus offer a significant pro-competitive justification by avoiding a potential bottleneck and contributing to the creation of a product that might not otherwise exist. Such rules bear some resemblance to other types of activity that have received substantial antitrust deference: (1) a blanket music license allowing the sale of rights to hundreds of copyrighted musical compositions, thereby reducing transaction costs84 and (2) cross-license agreements and patent pools, which resolve patent bottlenecks among owners of blocking patents that otherwise could unilaterally prevent the practice of a product with multiple patented inputs.85 Even the promulgation of specific licensing terms should be sanctioned. “Reasonable and nondiscriminatory” does not give precise notice of its content and does not prevent ex post holdup. More detail might. Moreover, such announcements have not, to date, appeared to foster collusion among patentees in the royalties they have charged.

C. PRO-COMPETITIVE BENEFITS OF IP-BASED SSOS

Intellectual property-based SSOs offer real pro-competitive justifications. Interoperability standards enable firms to use a common platform and enhance competition in the marketplace. They contribute to a greater realization of network effects and prevent buyers from being stranded in a product that loses the standards war.86 And they clear bottlenecks and create markets that might not otherwise exist.87 The IP rules of SSOs contribute to these benefits by reducing the likelihood of holdup by patentees.88

Further affirming the pro-competitive benefits of SSO rules, the industries in which SSOs have developed are those with the greatest potential for bottlenecks, patent thickets, and thwarted innovation. Mark Lemley has shown that SSOs have concentrated “in precisely those industries where the unconstrained enforcement of patents could be most damaging to innovation,” namely, computer software, Internet, telecommunications, and semiconductors.[[1]](#footnote-1) In these industries, the presence of multiple patented inputs in products increases the risk of holdup. Just as ominous, the industries are marked by “cumulative innovation,” with one generation’s patented invention based on those of previous generations.[[2]](#footnote-2) The clearing of patent thickets and fostering of cumulative innovation and new markets through SSOs offers perhaps the most powerful benefits for competition and innovation.[[3]](#footnote-3) Significant to begin with, the pro-competitive benefits of SSO rules are magnified even further in removing the potentially explosive landmines of the patent system.[[4]](#footnote-4)

These pro-competitive benefits are obvious when we return one last time to the paradigmatic example of a patentee announcing to the members of the SSO the terms of RAND licensing before the adoption of the standard. Even if the patentee and its competitors are members of the SSO and collectively possess market power, the activity should be upheld.[[5]](#footnote-5) Anticompetitive effects on price and innovation will be minimal, and the pro-competitive justifications of preventing holdup and allowing standardized products to come to market are significant, especially in industries that would otherwise be subject to patent thickets and holdups. Adherence to platitudes of “reasonable and nondiscriminatory” licensing does not mean much where the details are left vague and are the subject of dispute after the standard has been adopted. The clarity of SSO rules is not used to foster collusion, price fixing, or boycotts, but rather to eliminate ambiguity and prevent holdups at the point where the patentee has significant leverage. For these reasons, antitrust should defer to nearly all SSO rules restricting IP.

CONCLUSION

Teece and Sherry are correct that standard-setting activity is beneficial and that antitrust cannot have more than a limited role in policing the IP rules of SSOs. But this conclusion can be reached without resort to notions of one-size-fits-all antitrust, an overriding objective of speed, and the relative influence of IP owners vis-à-vis IP users in SSOs. It can comfortably be grounded in the heart of antitrust: in the lack of significant anticompetitive effects and in the presence of powerful procompetitive justifications. Although there is a role for antitrust in the analysis of SSO rules, long-settled antitrust jurisprudence dictates that it is only a limited role.

### AT: Warming !D---No Extinction

#### Yes extinction---defense doesn’t positive feedback loops and non-linearity that compound the risk.

### 2AC---AT: No Patent Holdup---Prodict

#### Patent holdup is overwhelmingly empirically supported---prefer thousands of peer-reviewed studies.

Shapiro & Lemley 20, \*Carl Shapiro is the Transamerica Professor of Business Strategy Emeritus at the Haas School of Business, University of California at Berkeley; \*Lemley is the William H. Neukom Professor at Stanford Law School and a partner at Durie Tangri LLP; (2020, “THE ROLE OF ANTITRUST IN PREVENTING PATENT HOLDUP”, https://faculty.haas.berkeley.edu/shapiro/patentholdup.pdf)

D. Empirical Support for the General Theory of Holdup

An impressive body of empirical work supports the general theory of holdup described above. Literally hundreds of papers have been published in peer-reviewed journals developing and testing the general theory of holdup. As Robert Gibbons, one of the editors of the Handbook of Organizational Economics, stated in his article on transaction cost economics, “the huge body of TCE literature is overwhelmingly empirical.”28

One extensive line of research uses transaction cost economics to explain the scope and incidence of vertical integration.29 Put differently, these papers use transaction cost economics to explain the “make vs. buy” decisions of firms. A closely related line of research uses transaction cost economics to explain how firms structure their contractual relationships. Shelanski and Klein provide an early survey of this literature.30 As they conclude, “Studies that examine the make-or-buy decision and the structure of long-term contracts, in particular, overwhelmingly confirm transaction cost economic predictions.”31 Masten assembles some of the best early empirical articles on vertical integration and vertical contracting.32 Whinston notes that “TCE predicts that any increase in quasi-rents will increase the likelihood of vertical integration (a finding that is so far consistent with nearly all of the existing empirical literature).”33 Macher and Richtman reviewed “over 3,500 abstracts from which [they] obtained approximately 900 articles that empirically test some aspect of TCE theory.”34 After recognizing considerable variability in the quality of the empirical work that they surveyed, they concluded, “[e]ven so, the volume of our findings lend considerable support overall for the main predictions of TCE.”35

In addition, there is an enormous amount of anecdotal evidence based on long-term contracts between sophisticated parties in situations where substantial specific investments are involved and the parties come to rely on each other. It is safe to say that anyone who has seen a good number of such contracts will confirm that they normally contain provisions by which one party obtains price and performance protections to limit opportunism by the other party.

#### Their ev comes is funded by SEP holders with vested interests in falsely debasing the patent holdup theory.

Shapiro & Lemley 20, \*Carl Shapiro is the Transamerica Professor of Business Strategy Emeritus at the Haas School of Business, University of California at Berkeley; \*Lemley is the William H. Neukom Professor at Stanford Law School and a partner at Durie Tangri LLP; (2020, “THE ROLE OF ANTITRUST IN PREVENTING PATENT HOLDUP”, https://faculty.haas.berkeley.edu/shapiro/patentholdup.pdf)

Patent holdup has proven one of the most controversial topics in innovation policy, in part because companies with a vested interest in denying its existence have spent tens of millions of dollars trying to debunk it. Notwithstanding a barrage of political and academic attacks, both the general theory of holdup and its practical application in patent law remain valid and pose significant concerns for patent policy. Patent and antitrust law have made significant strides in the past fifteen years in limiting the problem of patent holdup. But those advances are currently under threat from the Antitrust Division of the Department of Justice, which has reversed prior policies and broken with the Federal Trade Commission to downplay the significance of patent holdup while undermining private efforts to prevent it. Ironically, the effect of the Antitrust Division’s actions is to create a greater role for antitrust law in stopping patent holdup. We offer some suggestions for moving in the right direction.

### 2AC---AT: No Patent Holdup---Empirics

#### Patent holdup is true even if it can’t be empirically verified.

Shapiro & Lemley 20, \*Carl Shapiro is the Transamerica Professor of Business Strategy Emeritus at the Haas School of Business, University of California at Berkeley; \*Lemley is the William H. Neukom Professor at Stanford Law School and a partner at Durie Tangri LLP; (2020, “THE ROLE OF ANTITRUST IN PREVENTING PATENT HOLDUP”, https://faculty.haas.berkeley.edu/shapiro/patentholdup.pdf)

E. Actual Holdups Are Very Difficult to Measure

As just noted, the extensive empirical support for the general theory of holdup consists primarily of studies showing that firms structure their relationships to avoid or minimize the adverse effects of holdup. Critically, the evidence does not involve quantifying the magnitude of actual ex post holdups.36 Indeed, the empirical literature on holdup has relatively few documented examples of large-scale actual holdups.37 This will be important below when we turn to evaluating the empirical evidence regarding patent holdup in particular.

Anticipating the arguments being made by those who deny that the patent holdup problem is real and significant, it is instructive to ask why the empirical literature on the general holdup problem has not proceeded by measuring the frequency or magnitude of actual holdups.

In part this is for a very good conceptual reason: the theory predicts that market participants will structure their affairs to avoid or mitigate actual holdups. As stressed above, the social costs caused by the holdup problem can be large even if large-scale holdups are very infrequent. The validity of the general theory of holdup, and the importance of the holdup problem, do not hinge on the frequency or magnitude of actual holdups.

But practical considerations also play a big role in explaining why the very large empirical literature on the holdup problem includes few documented instances of actual holdups. Even in situations where such holdups take place, they are exceedingly difficult for researchers to reliably detect and quantify. To see why, denote the holdup (ex post monopoly) price by 𝑃𝐻 and the ex ante competitive price by 𝑃 ∗ . The (perunit) magnitude of the actual ex post holdup is equal to (𝑃𝐻 − 𝑃 ∗ ). Measuring either component of this difference can pose quite a challenge for researchers. Actual transaction prices in complex business-to-business transactions are rarely observable by researchers. Plus, even when a measure of price is available, it typically is confounded by other terms and conditions, making 𝑃𝐻 very hard to observe. Coming up with a good measure of the competitive benchmark price 𝑃 ∗ is even harder, since it reflects a counterfactual and since the transactions at issue are by nature idiosyncratic. Practical considerations also explain why the empirical literature on the holdup problem includes few documented instances in which the prospect of holdup has discouraged investment. The resulting reduction in investment typically will not normally be observable to researchers, much less attributable to holdup.

For all of these reasons, scholars studying the holdup problem widely agree that the general theory of holdup is very well supported empirically without expecting, much less demanding, a body of empirical work measuring actual holdups. This same sensible approach should be applied to patent holdup.

When we turn to look at patent holdup below, we will examine the two types of evidence used in the more general empirical literature on holdup. First, we look for evidence identifying situations in which the patent holdup problem is significant. The telltale marker that the patent holdup problem is significant in a given setting is the presence of substantial investments specific to a given patent or patent portfolio. Second, we look for evidence that the mechanisms used to manage the patent holdup problem are costly or imperfect. There is clear evidence that the mechanisms used by SSOs to manage SEP holdup are costly and imperfect.

### 1AR---AT: No Patent Holdup---Empirics

#### Their argument is akin to saying speed limits don’t matter because high ways are safe.

Gilbert 20, \*Richard J. Gilbert is an [American Economist](https://en.wikipedia.org/w/index.php?title=American_Economist&action=edit&redlink=1), professor at [UC Berkeley](https://en.wikipedia.org/wiki/University_of_California,_Berkeley) from 1976 to 2000, and founder of [LECG](https://en.wikipedia.org/wiki/LECG_Corporation) Corp. ([Law and Economics Consulting Group](https://en.wikipedia.org/wiki/LECG_Corporation)). Richard ('Rich') Gilbert served as Deputy Assistant General in the [Antitrust Division](https://en.wikipedia.org/wiki/United_States_Department_of_Justice_Antitrust_Division) of the [U.S. Department of Justice](https://en.wikipedia.org/wiki/United_States_Department_of_Justice) in the White House from 1993 to 1995. He led the development of Joint Department of [Justice and Federal Trade Commission](https://en.wikipedia.org/w/index.php?title=Justice_and_Federal_Trade_Commission&action=edit&redlink=1) [Antitrust](https://en.wikipedia.org/wiki/Competition_law) Guidelines for the Licensing of [Intellectual Property](https://en.wikipedia.org/wiki/Intellectual_property) and is currently [Emeritus Professor](https://en.wikipedia.org/wiki/Emeritus_Professor) of Economics at the [University of California at Berkeley](https://en.wikipedia.org/wiki/University_of_California,_Berkeley); (2020, “Innovation Matters: Competition Policy for the High-Technology Economy”, https://mitpress.mit.edu/books/innovation-matters)

Conduct that enables a patent owner to evade FRAND commitments should not be lawful. High royalties harm consumers and can impede innovation for technologies for which a patent license is necessary. Some have argued that patent holdup is no more than an academic curiosity because innovation and competition for smartphones and other devices have thrived, despite the fact that these devices implement standards covered by hundreds of SEPs.[26](javascript:void(0)) But this argument is flawed. It does not recognize that prices for smartphones and other devices would likely be much higher if the antitrust authorities and the courts stopped policing FRAND licensing obligations.[27](javascript:void(0)) The fact that it is reasonably safe to drive on highways in the US does not mean that speed limits are unnecessary. FRAND limitations are speed limits on the information superhighway.

### 2AC---AT: No Royalty Stacking---Empirics

#### Royalty stacking is real, and court intervention is needed to make them economically sustainable.

Armstrong et al. 14, \*Ann K. Armstrong is a Vice President in the Law and Policy Group at Intel Corporation. Armstrong joined Intel in 1997 as an attorney supporting multiple business groups. Before assuming her role at Intel, Armstrong was an attorney at Foster Pepper PLLC in Seattle, where she practiced IP and business law; \*Joseph Mueller is a partner in the WilmerHale firm’s Litigation/Controversy Department, and a member of the Intellectual Property Litigation and Appellate and Supreme Court Litigation Practice Groups; \* Tim Syrett is an intellectual property and antitrust litigator, also a partner for WilmerHale; (May 29th, 2014, “The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones”, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=2443848)

But even with these gaps in the data—and the limitations of the available data, as described at the outset—the magnitude of the potential royalty burdens on a smartphone become apparent. Totaling the figures described above for particular components or technologies leads to potential royalties of $121 to $124 (for smartphones using either Microsoft Windows Phone or Android or some other open source operating system), as shown below:

Indeed, the royalty data shows that the potential royalties demands on a smartphone could equal or even exceed the cost of the device’s components.434 To be sure, for the reasons described above, many of the so-called “headline” rates on which these royalty figures are based may not withstand negotiation or litigation, but they have nonetheless been sought (and received) from some licensees. With the addition of royalties for the components/technologies for which we did not have sufficient data to include royalty figures, the total potential royalties would increase. Without access to the actual royalty figures paid by smartphone suppliers it is impossible to know for certain their magnitude. But our research demonstrates that they are likely significant. Indeed, the available data suggest that the smartphone royalty stack may be one important reason why selling smartphones is currently a profitable endeavor for only a small number of suppliers.

Further, the available data demonstrate a need for licensees to advocate and courts to rigorously apply methodologies for calculating royalties that focus on the actual value of a claimed invention put in context of the myriad other technologies in a smartphone and the components in which the technologies are implemented. Our research shows a common thread where many of the largest royalty demands rely on the methodology of seeking a royalty based on a percentage of the sales price of the entire smartphone, as opposed to the modest price of the component in which the accused functionality is implemented. That methodology often stems from licensing practices that conflict with the Federal Circuit’s more recent apportionment jurisprudence and it is increasingly being rejected by the courts.

The need for apportionment and rigorous valuation of claimed inventions when calculating royalties is especially acute for standardized technologies, where a patent holder may have just a small slice of the declared essential patents for a particular standard and where that standard may be just one of many supported by the device. Indeed, when courts have rigorously applied methodologies that account for royalty stacking concerns and make a meaningful assessment of the value of the patented technology to the accused devices, the results have been royalties that appear far more economically sustainable for device suppliers. That is the case in both the Innovatio and Microsoft v. Motorola decisions, where the court set RAND royalties at a fraction of what the patent holders had sought. Data such as that presented herein may further crystallize the need for such nuanced analyses of rate-setting.

## ADVANTAGE---CYBER

### 2AC---!---Cyber

#### Cyber conflict goes nuclear---critical infrastructure causes tit-for-tat escalation, and ill-established redlines and use-it-or-lose-it mentality pressures advisors to assume the worst---that’s Klare.

### 2AC---AT: T---Expand Scope =/= Courts---TL

#### We meet---the plan expands the scope of the Sherman Act to hold SSO’s liable for unreasonably restricting commerce.

Wright 9 (University Professor Joshua D. Wright is the Executive Director of the Global Antitrust Institute and holds a courtesy appointment in the Department of Economics. On January 1, 2013, the U.S. Senate unanimously confirmed Professor Wright as a member of the Federal Trade Commission (FTC), following his nomination by President Obama to that position. He rejoined Scalia Law School as a full-time member of the faculty in Fall 2015. “INTELLECTUAL PROPERTY, STANDARD SETTING, AND THE LIMITS OF ANTITRUST” , <https://laweconcenter.org/resource/intellectual-property-standard-setting-and-the-limits-of-antitrust/> , 22 OCTOBER 2009, date accessed 9/4/21)

One of the most significant challenges facing competition policy today is defining the appropriate role of antitrust law within the context of intellectual property right licensing by standard-setting organizations (“SSOs”). Many commentators believe it is necessary to apply the full force of the antitrust laws, and sometimes special rules that would increase the scope of antitrust, to the standard-setting process in order to adequately oversee what they perceive as a unique opportunity for anticompetitive behavior. Indeed, antitrust agencies both in the United States and around the world have expressed agreement with the notion that the standard setting process requires strong enforcement of antitrust liability rules in order to ensure efficient outcomes that benefit consumers. However, this view largely fails to consider the costs of antitrust. In particular, it fails to recognize the limits of antitrust when the marginal benefit of antitrust enforcement is slight and the potential for erroneous enforcement (“false positives”) and thus, the likelihood that procompetitive behavior will be deterred, is high. The Supreme Court itself has emphasized repeatedly that the scope of the antitrust laws should be responsive to such a cost-benefit analysis.

### AT: 6G

1---no matter for 5G rollout internal link

2---says it will take decades, rollout of 5g is still impeding.

## AT: CP---NON-ANTITRUST REGULATION

### 2AC---AT: Regulation CP---TL

#### Permutation do both.

#### Permutation do the counterplan---the counterplan still expands the scope of core antitrust laws by increasing prohibitions.

Bradford and Chilton 18 (Anu Bradford, Henry L. Moses Professor of Law and International Organization, Columbia Law School. Adam S. Chilton, Assistant Professor of Law and Walter Mander Research Scholar @ the University of Chicago. “Competition Law Around the World from 1889 to 2010: The Competition Law Index” , Columbia Law School Scholarship Archive Faculty Scholarship, <https://scholarship.law.columbia.edu/cgi/viewcontent.cgi?article=3519&context=faculty_scholarship> , 2018, date accessed 9/5/21)

The Scope Index is the closest to the CLI in that it also measures the law in the books, treating prohibitions as elements that increase the scope (or stringency) of the law and defenses as elements that reduce the scope (or stringency) of the law. Basic categories in the Scope Index and our CLI are also the same, even if somewhat differently labeled. For example, we refer to “anticompetitive agreements” where the Scope Index refers to “restrictive trade practices.”

#### Non-antitrust regulation fails---three deficits:

#### 1---competition-specific expertise---DOJ and FTC enforcement are key. Even if other agencies are granted authority to regulate, they will underenforce.

Dogan 08, \*Stacey L. Dogan, Professor of Law, Northeastern University; \*Mark Lemley, William H. Neukom Professor, Stanford Law School; of counsel, Keker & Van Nest LLP; (October 2008, “Antitrust Law and Regulatory Gaming”, https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1873&context=faculty\_scholarship)

I. The Relative Efficiency of Antitrust and Regulation

The growing antitrust deference to regulation is cause for concern. Both antitrust and regulation are economic responses to market failures.46 Implemented correctly, both are designed to serve the ends of economic efficiency.47 It is therefore reasonable to judge the relative efficacy of antitrust and regulation by economic criteria. And judged by those criteria, virtually all economists would agree that antitrust-overseen market competition is superior to industry regulation. In particular, none of the arguments the Court has offered as a reason to prefer regulation to antitrust withstand scrutiny.

Relative expertise.

It is true, as the Court emphasized in Trinko and Credit Suisse, that antitrust courts are generalist courts, while regulatory agencies tend to specialize in a particular industry and its problems. That specialization should, all other things being equal, mean that expert regulators will do a better job than judges or juries of reaching the right result. But other things are far from being equal. Antitrust courts have two significant advantages over regulatory agencies when it comes to promoting competition.

First, antitrust courts are trying to promote economic efficiency, while regulators often aren’t. For decades, efficiency has served as the sole criterion on which to judge antitrust rules. And courts have had over a century in which to hone those rules to achieve that end. Without question, courts have made mistakes in the past. But there is a strong consensus among antitrust scholars that the wave of cases in the last 30 years has largely moved antitrust in the right direction, eliminating any significant risk that antitrust enforcement will do more harm than good.48 Scholars may fight over whether a Chicago School or a post-Chicago School approach will achieve the right result in specific cases,49 but for the most part they are tinkering at the margins: the law and the scholarship have converged with respect to both the proper goals of antitrust and the general rules that will achieve those goals.

Regulation, by contrast, is frequently not even intended to achieve economic efficiency through competition. Occasionally that is because of a legislative judgment that competition is impossible, though the number of industries thought to be natural monopolies for which markets won’t work has shrunk dramatically in the past four decades.50 Industry regulation that excludes entry in order to promote a natural monopoly, as telephone regulation did before 1984, is not likely to achieve a competitive outcome.

More often, the goals of the legislators who establish regulatory agencies, or the goals of the regulators who run those agencies, are to achieve something other than competition. Indeed, many regulations are aimed precisely at eliminating competition, as was the government- sponsored raisin cartel in Parker v. Brown51 or any of its modern descendent crop-support programs administered by the Department of Agriculture. It should be obvious that regulations intended to reduce competition will not promote it. But even if the regulation is not directly inimical to competition, competition is frequently irrelevant to, or at best a minor consideration in, a regulator’s agenda. Regulators may care about the safety and efficacy of a drug, for example, and only incidentally about whether there is competition in the sale of that drug. They may seek to reduce traffic deaths or air pollution by mandating technology, regardless of the effect that mandate has on the price manufacturers can charge or the number of products they sell. These are laudable goals, to be sure, but they are not competition-related goals. An agency tasked with achieving these goals is likely to ignore threats to competition from the industry it regulates so long as those threats do not compromise its core mission. Thus, the state and local governments that enacted the privately-drafted National Fire Protection Code at issue in Allied Tube into law were interested in stopping fires; doubtless they thought little if at all about the competitive effects of the code, even though it turned out that the code was drafted by interested private parties with the purpose of impeding competition rather than promoting fire safety.52

Even those agencies whose mission expressly involves consideration of competition issues will not necessarily make it their first among potentially conflicting priorities. The SEC, for example, which as Justice Breyer pointed out is dedicated to improving market information and expressly considers competition among other issues in setting regulation,53 is first and foremost an investor-protection and information-disclosure agency, not an agency that investigates and weeds out cartels or other anticompetitive practices. It is unlikely to devote much in the way of time or resources to such issues, because even if it is tasked to consider such issues they do not reflect the agency’s primary purpose. Similarly, even an agency like the Federal Communications Commission that is directly focused on competitive conditions in a particular market may naturally pay attention primarily to that market, and give less if any attention to the effect its rules might have on competition in adjacent markets or competition from unanticipated new businesses. This arguably explains the FCC’s willingness to largely ignore the effects of its decisions on the Internet, for example: it is telecommunications, not the Internet, that the FCC is tasked to regulate.

Agencies that view competition as secondary, or view it through the lens of a particular industry’s characteristics and interests, are less likely to create and enforce rules that optimally encourage competition.54 At a bare minimum, therefore, the industry-specific expertise of an agency must be balanced against the competition-specific expertise of the specialist antitrust agencies: the Federal Trade Commission (FTC) and the Department of Justice Antitrust Division.

#### 2---regulatory capture---even honest agencies will subject to lobbying and industry pressure that diverts the counterplan’s purpose. Antitrust courts are superior and impartial.

Dogan 08, \*Stacey L. Dogan, Professor of Law, Northeastern University; \*Mark Lemley, William H. Neukom Professor, Stanford Law School; of counsel, Keker & Van Nest LLP; (October 2008, “Antitrust Law and Regulatory Gaming”, https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1873&context=faculty\_scholarship)

The problem with agencies is much greater than just their questionable mandate to promote competition, however. Agencies are famously subject to “capture” by the industries they are supposed to regulate.55 That capture can take many different forms. Sometimes regulators or legislators are captured in the most venal sense – they are bribed or otherwise given personal benefits in exchange for voting a particular way. This seems to have been the case in Omni Outdoor Advertising, for example. Regulators who accept bribes (or politicians who accept campaign contributions in exchange for a particular vote) are not acting in the public interest but in their private interest, a private interest that necessarily aligns with the industry participant doing the bribing. Even a regulator who would never accept bribes may still seek to maximize, not the public interest, but his own power or the power and interests of his agency, a fact that industry can often use to its advantage.

Capture need not be so brazen, however. Even honest regulators and legislators can be captured through the mechanism of public choice theory.56 A legislator that tries to maximize her constituents’ expressed preferences may still end up supporting legislation that benefits private firms at the expense of the public interest, because the private firms will frequently have a concentrated interest – and therefore show up to lobby on a particular issue – while the public is hard to organize even around issues that may affect a great many of them diffusely. Regulators are subject to the same effect. A notice and comment rulemaking is likely to produce more comments from people with a concentrated interest in the outcome, and fewer comments from those with a more diffuse interest. Thus, regulators who try in good faith to determine what the public thinks of a particular regulation may still end up with a skewed view of the pros and cons. This may be particularly likely with competition issues. While the public as a whole has a strong interest in unfettered competition, any individual member of the public is unlikely to be affected much by a particular regulatory decision. And particularly where the industry as a whole colludes to seek regulatory intervention that benefits them, as in Ticor Title, there are unlikely to be competitors who can stand as proxy for the interests of the public.

Finally, even legislators and regulators aware of the existence of public choice problems and determined to do the right thing are still susceptible to forms of what we might call “soft” capture. Acquiring accurate information about market conditions is often very difficult, for example. Companies with a vested interest in the outcome can hire lobbyists that provide information helpful to their side, and a regulator who cannot get information except from those lobbyists may have little choice but to accept that information as true. Even if there are competing sources of information, interested parties can and do hire as lobbyists former employees, colleagues, or friends of the regulator, and it is natural human instinct to trust those people more than strangers. And regulators tend to come from the industries they regulate, which may mean that they start out seeing things from the industry’s perspective.

Judges, by contrast, are much less subject either to having their purpose diverted or to capture. While some have tried to argue that judges face some of the same interest group constraints as legislators and administrative agencies,57 the fact is that antitrust courts are trying to achieve the goal of economic efficiency, they are doing it in industries in which they have no direct financial interest, they cannot act to benefit their “agency” in rendering a decision, and the structure of the litigation process helps ensure to the extent possible that both sides are presented in a relatively balanced way. Courts aren’t perfect, of course. But all advantages are comparative, and the fact that antitrust courts are trying to promote competition rather than to achieve some other end (whether legislated or self-motivated) provides a powerful counterweight to the industry expertise of administrative agencies. It is important to keep in mind, as Areeda and Hovenkamp summarize, that “it often turn[s] out that the principal beneficiaries of industry regulation were the regulated firms themselves, which were shielded from competition and guaranteed profit margins.”58 Courts should not assume that regulation will lead to competition merely because regulators know more than courts about the industries they regulate.

#### That’s especially true in the standard-setting context---regulatory gaming exacerbates monopoly pricing.

Dogan 08, \*Stacey L. Dogan, Professor of Law, Northeastern University; \*Mark Lemley, William H. Neukom Professor, Stanford Law School; of counsel, Keker & Van Nest LLP; (October 2008, “Antitrust Law and Regulatory Gaming”, https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1873&context=faculty\_scholarship)

2. Evading regulatory limits as antitrust harm

The second open question is whether antitrust injury occurs when a defendant’s misrepresentations prevent an agency from placing limits on an exercise of market power, rather than eliminating the market power altogether. In Rambus v. FTC,148 the D.C. Circuit effectively held that where market power resulted from a regulatory decision (there, the grant of a patent), antitrust law could not constrain the price the monopolist charged. Rambus involved alleged misrepresentations made in the course of a private standard-setting organization’s deliberations. The FTC claimed that Rambus had withheld material information about patent rights that it held over the relevant technology. The FTC alleged that if the SSO had known about Rambus’s patents, either it would have adopted a different standard, or it would have demanded some form of fair and nondiscriminatory licensing terms on Rambus’s patents. The D.C. Circuit found the second allegation legally inadequate, concluding that the mere exercise of market power (i.e., charging higher prices) does not violate the antitrust laws if the market power itself arose from a valid government grant.149

The Rambus court relied on NYNEX v. Discon,150 in which the Supreme Court refused to apply the per se rule to a kickback scheme involving a regulated utility. The regulated party in Discon awarded a contract for non-regulated services to a company that would charge higher prices that the regulated company could then pass on to consumers through rate regulation. The NYNEX Court rejected an antitrust claim alleging that the scheme constituted an unlawful group boycott, absent proof that it harmed competition (not just a competitor) in the non-regulated service market. The Court specifically acknowledged that consumers were injured by the conduct, because it resulted in higher prices in the regulated market. Because that injury came from the exercise of agency-granted market power, however, the Court deemed it beyond the reach of antitrust law. While NYNEX itself involved only the question of whether the per se rule applied, Rambus read it as going further and immunizing any conduct that owed its origin to a regulatory grant of market power.

Both NYNEX and its substantial new extension in Rambus are problematic as matters of antitrust law. The harm to competition in NYNEX did not stem solely from government-granted market power; it stemmed from the defendant’s effort to extend that market power in ways that deceived the regulatory agency and prevented it from controlling NYNEX’s behavior. Similarly, the harm to competition in Rambus did not stem solely from the government’s grant of a patent, but from the combination of that grant with Rambus’s deception of a standard-setting organization that would otherwise have restrained the ability of Rambus to charge a supracompetitive price for that patent. Both of these cases, in other words, involve deliberate and effective regulatory gaming. By refusing to apply antitrust law to private deceptive conduct that manipulates a regulatory process, or extends or exacerbates the anticompetitive effects of a regulatory decision, NYNEX and Rambus appear to condone a new and insidious form of implicit antitrust deference to regulation, one in which antitrust law must ignore conduct that exacerbates competitive harm because the company causing that harm wouldn’t have been in a position to do so but for regulation.151

Whatever one’s views of the substantive antitrust issues, the existence of antitrust injury is an antitrust question that should be decided by antitrust courts, and will not (and often cannot) be adequately addressed by regulatory agencies. And neither NYNEX nor Rambus discredits the notion that abuse of standard-setting processes can, in some circumstances, violate the antitrust laws. In particular, if the facts show that an agency relied upon misrepresentations in choosing a standard – and would have chosen a different standard but for the misrepresentations – then the defendant has caused a structural harm in the market even in the narrow Rambus view. In these circumstances, the defendant’s misrepresentations are the “but-for” cause of the defendant’s economic monopoly.152 While the D.C. Circuit refused to speculate on whether even this could constitute antitrust injury,153 it strains credulity to imagine any other outcome.

Like product-hopping, then, abuse of government standard-setting processes can cause competitive harm in markets. And like product-hopping, the harm may not be remediable through administrative recourse. The capture of government standard-setting processes offers yet another example of regulatory gaming, and another reason that antitrust courts should continue to play a role in regulated markets.

#### 3---deterrence---regulations don’t deter misconduct.

Dogan 08, \*Stacey L. Dogan, Professor of Law, Northeastern University; \*Mark Lemley, William H. Neukom Professor, Stanford Law School; of counsel, Keker & Van Nest LLP; (October 2008, “Antitrust Law and Regulatory Gaming”, https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1873&context=faculty\_scholarship)

Our goal in this paper is not to persuade the reader that these particular examples of regulatory gaming violate the antitrust laws (though we think they do) or that other examples, such as regulatory price squeezes, do not violate the antitrust laws. Rather, our point is that whether or not particular acts of regulatory gaming harm competition is and should be an antitrust question, not merely one that involves interpreting statutes or agency regulations. Regulatory agencies and even Congress cannot prevent gaming ex ante. Experience with the pharmaceutical industry suggests that if Congress acts to squelch one form of gaming, companies will find other ways to game the system. And even if Congress or the regulating body can surgically fix a particular type of exclusionary behavior, such an ex post response (unlike the threat of antitrust treble damages) does nothing to compensate for past harm or to deter future gaming behavior. Some level of antitrust enforcement – with appropriate deference to firm decisions about product design and affirmative regulatory decisions that affect market conditions – provides a necessary check on behavior, such as product hopping, that has no purpose but to exclude competition.

#### \*Deterrence matters---SEP holders will remain opportunistic absent the threat of antitrust.

Tsilikas 17, \*Haris Tsilikas is an IP and Antitrust Consultant, a Doctoral Candidate and Visiting Research Fellow at the Max Planck Institute for Innovation and Competition, Munich; (2017, Antitrust Enforcement and Standard Essential Patents: Moving beyond the FRAND Commitment”, https://www.jstor.org/stable/pdf/j.ctv941t01.9.pdf?refreqid=excelsior%3A92dc720d1ebc7088811b40032a60f575)

Antitrust could play a meaningful role.165 The most important contribution of antitrust enforcement against abuses of SEPs is its deterrent effect.166 Although patent law reforms or contractual binding of subsequent SEPs-holders to FRAND licensing would provide to victims of hold-up useful defences in court, they do not sufficiently deter abusive assertion of SEPs in the first place. For instance, the contractual binding to FRAND could raise counterclaims of breach of contract or/and contractual performance; however, the opportunistic SEP-holder will, in case it loses on such grounds, be left no worse than with a licence on FRAND terms. In the end, a patent hold-up is indeed precluded, but contractual constraints can do little to prevent opportunistic assertion of SEPs in the first place. The victims still suffer the costs of uncertain and resource-draining litigation; most importantly, the reliability of the standards-setting process might still be at risk.

Antitrust enforcement on the other hand, in imposing tortfeasors positive monetary losses in the form of fines, alters the profit-cost calculus of opportunistic behaviour in the first place; opportunistic assertion of SEPs will come at a cost. Of course, a too-heavy-handed approach could have a chilling effect on legitimate patent assertions against implementers that are reluctant to pay FRAND royalties, thus leading to false positives. Antitrust enforcement should carefully examine the specificities of each case, such as the particular PAE conduct, the relationship between PAEs and practicing entities, the structure of downstream markets.167 More importantly, an economically informed antitrust analysis focusing on the actual and potential anticompetitive effects of opportunistic SEPs assertion should prohibit behaviour that is truly harmful to consumers. Safeguarding the inclusive and efficient character of the standards-setting process is a competition law problem. Informed antitrust analysis could provide adequate responses to opportunistic PAE behaviour and privateering.

## AT: DA---FTC

### 2AC---FTC DA

#### 1---No link---private parties initiate suits.

#### 2---No link---the prospect of antitrust intervention deters violations---that’s Melamed and Shapiro---no enforcement necessary.

Cheng 13, \*Thomas Cheng, B.A. (Yale), J.D. (Harvard), B.C.L. (Oxon); Attorney & Counsellor, New York State; Associate Professor, Faculty of Law, The University of Hong Kong; (2013, “Putting Innovation Incentives Back in the Patent-Antitrust Interface”, <https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1195&context=njtip>), ability edited

Imposing a duty to license on opportunistic patentees may solve this problem. If these patentees know that the courts may step in and mandate licensing at a reasonable royalty rate,214 they will be induced to enter into negotiations with follow-on innovators in good faith.215 The threat of compulsory licensing may become a default background legal rule against which negotiations between initial and follow-on innovators take place. The instances in which the courts need to intervene could be few.

#### 3---Fiat solves---includes funding---funding must be normal means OR the AFF would always lose on presumption because there wouldn’t be money to enforce it.

#### 4---Thumpers:

#### A---Oil and gas.

Justin **Sink and** David McLaughlin 8/30/21. Staff writer for the Hill and Bloomberg writer. “FTC Targets Oil-and-Gas Deals, Franchises Amid Pain At Pump.” https://www.yahoo.com/now/ftc-targets-oil-gas-mergers-134500600.html

The Federal Trade Commission is examining ways to crack down on mergers in the oil and gas industry and investigate whether gas station franchises are driving up gas prices as part of a Biden administration effort to combat higher costs at the pump.

FTC Chair Lina Khan is directing staff to identify new legal theories to challenge retail fuel station deals and investigate possible collusion by national chains to push up prices, she said in an Aug. 25 letter to White House economic adviser Brian Deese obtained by Bloomberg News.

“I will be taking steps to deter unlawful mergers in the oil and gas industry,” Khan said. “Over the last few decades, retail fuel station chains have repeatedly proposed illegal mergers, suggesting that the agency’s approach has not deterred firms from proposing anticompetitive transactions in the first place.”

The FTC is planning to ratchet up investigations into abuses in the retail fuel station franchise market, she added.

Pennsylvania. She is also an alumna of the Fellowships at Auschwitz for the Study of Professional Ethics, a program in Germany and Poland that explores the ethics of reporting on politics, war and genocide (Alexandra, “How Biden's tech trustbuster could change health care,” *Politico*, <https://www.politico.com/newsletters/future-pulse/2021/08/25/how-bidens-tech-trustbuster-could-change-health-care-797333>)

#### B---Health care.

Levine 8-25-2021, master’s degree from the Columbia University Graduate School of Journalism and a bachelor of arts in English from the University of Pennsylvania. She is also an alumna of the Fellowships at Auschwitz for the Study of Professional Ethics, a program in Germany and Poland that explores the ethics of reporting on politics, war and genocide (Alexandra, “How Biden's tech trustbuster could change health care,” *Politico*, <https://www.politico.com/newsletters/future-pulse/2021/08/25/how-bidens-tech-trustbuster-could-change-health-care-797333>)

Lina Khan’s Federal Trade Commission has its eyes on health care. The agency known for efforts to rein in Big Tech companies like Facebook and Amazon is also enmeshed in high-stakes health care and health tech battles that extend well beyond Silicon Valley. Case in point: The FTC trial that kicked off yesterday examining monopoly concerns in the market for cancer screening technology. (More on that below.) That closely watched antitrust case — involving the giant Illumina and startup Grail — predates Khan’s confirmation as FTC chair. But it underscores how health issues are looming over the agenda, particularly heading into the pandemic's second year. The way health care companies and consumer health apps handle sensitive data “is an area that I'm sure [Khan’s] very, very interested in,” said Jessica Rich, former director of the FTC’s consumer protection bureau, adding that the Biden administration's FTC will also be closely scrutinizing hospital mergers. “I expect her and the commission to take a very bold approach to what constitutes harm for both,” Rich said. “I expect her to pay close attention to algorithms and potential discrimination in health care, both denials and pricing issues which the FTC's laws can address.” The FTC’s jurisdiction touches nearly the entire health economy. While its competition bureau looks at health care mergers like the Illumina-Grail deal, its consumer protection side is focused on health privacy and data security issues, as well as fighting bogus medical claims on everything from weight loss to Covid cures. When Congress passed the Covid-19 Consumer Protection Act last year, the agency was granted new authority to police Covid scams. Although Khan hasn't spoken publicly about her health care agenda, she's likely to take issue with health apps and companies whose business models maximize, incentivize and monetize data collection. Of particular concern is how firms disclose what they’re doing with consumers’ data — and whether it may still be deceptive or unfair.

#### C---Section 5 rulemaking

Caitlin Styrsky 8/17/21. Staff writer at Ballotpedia. “Checks and Balances: FTC expands interpretation of its antitrust enforcement authority.” https://news.ballotpedia.org/2021/08/17/checks-and-balances-ftc-expands-interpretation-of-its-antitrust-enforcement-authority/

The Federal Trade Commission (FTC) on July 1 voted 3-2 to broaden its interpretation of the commission’s Section 5 authority, which authorizes the FTC to investigate and challenge what it deems “unfair methods of competition in or affecting commerce.” The change could allow the agency to expand enforcement proceedings against companies that don’t expressly violate federal antitrust statutes.

The new interpretation departs from the commission’s 2015 precedent, established through internal guidance, that relied on the consumer welfare standard to determine what constitutes antitrust activity. According to the consumer welfare standard, only companies that artificially raise prices qualify as monopolies for the purposes of FTC enforcement. The FTC did not pursue companies via this standard if enforcement through the Sherman Act or the Clayton Act could address the competitive harm.

Under the FTC’s broadened interpretation of its authority, the commission can issue civil penalties to challenge what it deems to be anti-competitive behavior regardless of whether the behavior violates federal antitrust statutes. The change could allow the FTC to bring enforcement proceedings against tech companies that do not qualify as monopolies but that, in the opinion of FTC Chair Lina Khan, have been alleged to have exhibited anti-competitive practices.

“Withdrawing the 2015 Statement is only the start of our efforts to clarify the meaning of Section 5 and apply it to today’s markets,” wrote Khan in a statement. “Section 5 is one of the Commission’s core statutory authorities in competition cases; it is a critical tool that the agency can and must utilize in fulfilling its congressional mandate to condemn unfair methods of competition.”

#### D---Big tech.

Mike Scarcella 9-10. Legal affairs reporting for Reuters Legal in DC. "Week Ahead in Antitrust: Sept. 13, 2021." Reuters. 9-10-2021. https://www.reuters.com/legal/litigation/week-ahead-antitrust-sept-13-2021-2021-09-10/

(Reuters) - Here are some upcoming events of interest to the antitrust community. Unless otherwise noted, all times are local, and court appearances are virtual due to the COVID-19 pandemic. Monday, Sept. 13 4:15 p.m. - Shearman & Sterling's Matthew Readings, the firm's global antitrust practice group leader, is participating as a panelist at a Concurrences-sponsored discussion about merger controls in Asia. Stephen Ridgeway, a commissioner on the Australian Competition and Consumer Commission, is also a panelist. Stephen Crosswell, a Baker McKenzie partner in Hong Kong, will moderate. Find registration information here. Tuesday, Sept. 14 3 p.m. - Baker McKenzie is hosting a series of panel discussions over several days focused on compliance, including antitrust issues. Today's discussion, featuring competition law partners in London, Brussels and Washington, D.C., focuses on global antitrust "hot topics." A discussion on Wednesday will confront antitrust developments in distribution and the supply chain. Find more information here. No time - U.S. District Judge Amit Mehta in Washington, D.C., has asked lawyers for Google Inc and non-party Yelp to file a joint status report by Tuesday telling him whether there are any unresolved issues concerning Yelp's response to a document subpoena from the tech and search giant. Mehta is presiding over the U.S. Justice Department's antitrust case against Google, which has denied anticompetitive behavior. The judge is overseeing discovery issues now involving other non-parties, including Apple Inc and Microsoft Corp. The case is United States v. Google, U.S. District Court for the District of Columbia, No. 1:20-cv-03010. For the United States: Kenneth Dintzer of the Justice Department. For Google: John Schmidtlein of Williams & Connolly. For Yelp: Douglas Dixon of Hueston Hennigan and Serine Consolino of Aegis Law Group. For Microsoft: Caroline Simons of Orrick Herrington & Sutcliffe. For Apple: Steven Sunshine of Skadden, Arps, Slate, Meagher & Flom. Wednesday, Sept. 15 11 a.m. - The U.S. Federal Trade Commission is set to hold its third virtual open meeting under the Biden-era leadership of Chair Lina Khan. The tentative agenda includes a review of the 2020 vertical merger guidelines, and a vote on whether to issue a policy statement on privacy breaches by health apps and connected devices. Agency staff will present findings of the commission inquiry into technology companies' unreported acquisitions, deals that can be too small to trigger disclosure to enforcers. More information is here. Thursday, Sept. 16 9:30 a.m. - U.S. Magistrate Judge Laurel Beeler in San Francisco will preside over a discovery hearing in an antitrust action alleging Gilead Sciences Inc participated in a scheme to suppress competition for an HIV drug. Gilead, which has denied the claims, is seeking to keep certain details redacted--based on attorney-client privilege--in discovery filings. The plaintiffs' lawyers contend the documents at issue are "quintessential" business records. For plaintiffs: Daralyn Durie of Durie Tangri; Steve Shadowen of Hilliard & Shadowen; and Steve Berman of Hagens Berman Sobol Shapiro. For defendants: Heather Burke, Christopher Curran and Heather McDevitt of White & Case. 1 p.m. - Cooley is hosting a virtual discussion about the Biden antitrust scrutiny on life sciences. "Signs abound that this scrutiny is very likely to reach new levels in 2021 and beyond," the firm said. Jacqueline Grise, chair of the firm's antitrust and competition practice group, will be on the panel with partners Tanisha James and Dee Bansal. Find more information here.

#### E---Amazon thumps.

Annie Palmer and Lauren Feiner 9-13. News Associates for CNBC News. “DC attorney general goes after Amazon’s first-party business in amended antitrust complaint.” CNBC. 09-13-2021. https://www.cnbc.com/2021/09/13/dc-attorney-general-targets-amazons-first-party-business-in-amended-antitrust-complaint.html

Washington, D.C. attorney general Karl Racine expanded his antitrust complaint against Amazon on Monday, targeting the company’s relationships with wholesale suppliers. Racine sued Amazon in May over allegations that the company illegally maintained monopoly power through its pricing contracts with third-party sellers. The amended complaint expands Racine’s initial allegations to include what he claims are the anticompetitive effects of Amazon’s agreements with first-party sellers, also known as FPS or wholesalers. The original complaint focused on how Amazon’s contracts with third-party sellers (TPS), or those who sell on Amazon under their own brand names, allegedly stifle competition. The Washington Post first reported the news of Racine’s amended complaint. Much of Amazon’s dominance in e-commerce has come from its third-party marketplace. That service is made up of millions of independent merchants who rely on Amazon’s logistics and fulfillment services to get their goods to customers’ doorsteps. Amazon also buys products wholesale from other companies, known as vendors or first-party sellers, and then handles the selling process. In the new filing, Racine alleges that Amazon’s “Minimum Margin Agreement” with first-party sellers has the “practical effect” of incentivizing those wholesalers to raise their prices for marketplaces outside of Amazon. That’s because those agreements require that the wholesaler guarantee Amazon a minimum profit, according to the complaint, meaning the seller must make up the difference if it doesn’t reach that margin. Racine alleges first-party sellers may be inclined to raise their prices elsewhere “to ensure that Amazon does not drop its price based on lower prices elsewhere.” “These agreements reduce other online marketplaces’ ability to compete with Amazon by offering lower prices to consumers,” according to the complaint, which goes on to say that the practice “results in reduced competition among online marketplaces and higher prices to consumers.” Vendors such as popular phone accessory maker PopSockets have previously highlighted Amazon’s aggressive pricing tactics as a persistent issue they encountered when selling their products on the company’s marketplace. In a statement, Racine said Amazon has used its dominant position in e-commerce to “rig the system,” resulting in higher prices for consumers and less competition among online marketplaces. Racine said his office uncovered Amazon’s “anti-competitive” agreements with first-party sellers as it was investigating its relationships with third-party sellers. “I filed this antitrust lawsuit to stand up for consumers, hold Amazon accountable for its anti-competitive practices, and protect competition,” Racine said in a statement. “We’re continuing to do just that with this amended complaint that adds more of Amazon’s misconduct.” Amazon spokesperson Jack Evans directed CNBC to the company’s previous statement on Racine’s initial lawsuit. “The DC Attorney General has it exactly backwards -- sellers set their own prices for the products they offer in our store,” Evans said. “Amazon takes pride in the fact that we offer low prices across the broadest selection, and like any store we reserve the right not to highlight offers to customers that are not priced competitively. The relief the AG seeks would force Amazon to feature higher prices to customers, oddly going against core objectives of antitrust law.” The company has previously argued that sellers set their own prices for the products sold on Amazon and that it’s within its right not to show offers that aren’t priced competitively. The amended complaint adds to Amazon’s mounting antitrust scrutiny. In addition to Racine’s lawsuit, Amazon is also being probed by the Federal Trade Commission over its business practices in retail and cloud computing, according to reports from several outlets. There’s also sweeping antitrust reforms that target Big Tech moving through Congress and the European Commission has zeroed in on Amazon’s treatment of third-party sellers, alleging it engages in anti-competitive conduct.

#### F---Apple Store ruling thumps.

Reed Albergotti 9-12. The Washington Post's consumer electronics reporter. The Washington Post; Washington, D.C. [Washington, D.C]. 12 Sep 2021: A.1. Accessed through Emory ProQuest.

Landmark ruling allowing rival payment options may spread antitrust ripples A federal judge fundamentally altered Apple's App Store business model on Friday in a landmark ruling that accused the iPhone maker of illegal anticompetitive behavior and is likely to have ripple effects across the U.S. antitrust landscape. In a decision on an antitrust lawsuit brought by Fortnite maker Epic Games, U.S. District Judge Yvonne Gonzalez Rogers ruled that Apple must allow app developers to "steer" customers to alternatives to the tech giant's payment processing service, which collects a 30 percent fee on most digital transactions. That was previously not allowed by the company, and marks a major victory for developers, which have long complained of the tight grip the tech giant maintains on its App Store in the roughly one billion iPhones currently in use. Gonzalez Rogers also found that Apple was in violation of California state competition laws because of the way it forces developers into using Apple's payment processing service without allowing them to tell customers there are alternatives, which are often cheaper. She stopped short of ruling in favor of Epic's claims that Apple is a monopolist, although she left the door open by suggesting more evidence could have changed her decision. "The court does not find that it is impossible; only that Epic Games failed in its burden to demonstrate Apple is an illegal monopolist," she wrote. Epic spokeswoman Elka Looks said the company plans to appeal the ruling. Tim Sweeney, chief executive of Epic, said in a tweet that, "Today's ruling isn't a win for developers or for consumers." Apple did not respond to requests for comment. The ruling, one of the first major legal actions taken against a tech giant in a new era of antitrust scrutiny, is sure to echo loudly both in Washington, where a legislative effort to rein in the power of Big Tech is underway, and in the courts, which are facing the biggest test of antitrust laws in decades. Tech giants have come under the microscope in recent years as it became clear that current antitrust law does not effectively address their power, and regulators and lawmakers have been pushing to change that. Last October, the Justice Department sued Google over allegations that it violated federal antitrust law. Just two months later, the Federal Trade Commission sued Facebook for allegedly behaving as an unlawful monopoly. Congress has also held several hearings about antitrust concerns, including demanding last year that the chief executives of Amazon, Facebook, Google and Apple testify to their companies' power. (Amazon founder Jeff Bezos owns The Washington Post.) During the hearing, Apple CEO Tim Cook defended Apple's relationship with app developers. "We do not retaliate or bully people," he said. "It is strongly against our company culture." Apple's developers in recent years have begun speaking out against the company for policies they view as anticompetitive and unfair. While companies like Epic, Spotify, Match Group and others have publicly locked horns with Apple, some smaller developers have also spoken out. Some have joined the Coalition for App Fairness, which was set up by Epic and other large companies. Spotify's head of global affairs and chief legal officer Horacio Gutierrez said in an emailed statement that it was pleased with the findings of anti-competitive practices, as well as the move to allow app developers to steer customers to other ways to pay. "This and other developments around the world show that there is strong need and momentum for legislation to address these and many other unfair practices, which are designed to hurt competition and consumers," he added. "This task has never been more urgent." Vidhya Murugesan, spokeswoman for dating app developer Match Group, echoed those concerns. "The Court got it right that Apple has abused their power and engaged in unfair behavior, but what today's ruling also makes clear is that antiquated antitrust laws cannot solely be fixed by the courts," she said in an emailed statement, adding that laws need to be changed. Last week, South Korean lawmakers passed legislation that forces Apple to allow alternative payment processing systems. Others said the court's decision didn't go far enough. Evan Greer, director of digital rights group Fight for the Future, said the decision didn't do enough to address the harm caused by Apple's policies. "As long as Apple maintains an authoritarian stranglehold over what software millions of people can and can't run on their phones, the company will be actively helping repressive governments undermine human rights and censor apps used by journalists, dissidents, and vulnerable communities," Greer added. The victory for App Store developers could allow them to circumvent some of the fees Apple charges. Under the changes, which take effect in 90 days barring any legal challenges, developers can collect money for digital goods outside of the App Store, but Apple's current App Store policies prohibit developers from telling customers inside their apps about alternative payment options or providing links to outside websites where customers can sign up for subscriptions or purchase digital goods and circumvent Apple's fees. Netflix, for instance, does not allow customers to subscribe within its mobile app. Customers must find their way to Netflix's website and subscribe there. Gonzalez Rogers said the way Apple treats developers resulted in the company violating California competition laws. The App Store is the only way software developers can distribute apps, and Apple's payment processing service is the only way they can collect money for digital goods sold within apps. "The Court concludes that Apple's anti-steering provisions hide critical information from consumers and illegally stifle consumer choice," Gonzalez Rogers wrote.

#### G---Biden’s XO and future FTC rule changes

Ausra Delard & Brian O’Bleness 21, JD Co-Chair of the U.S. Competition and Antitrust Group and Member of Dentons' National Health Care Practice Group; Co-Chair of the U.S. Competition and Antitrust Group and Member of Dentons' White Collar and Government Investigations Practice, “A New Day, A New Deal: The Biden Administration’s Antitrust Revolution”, JD Supra, 7/19/21, https://www.jdsupra.com/legalnews/a-new-day-a-new-deal-the-biden-8824526/

The Biden administration is “supercharging” antitrust enforcement with an expansive view of what constitutes anti-competitive behavior. While much attention has been paid to antitrust scrutiny of large technology companies, also in the crosshairs of the Biden administration are labor markets, agricultural markets and healthcare markets (prescription drugs, hospital consolidation and insurance) according to President Biden’s July 9 Executive Order on Competition2. The order is one of several recent developments that signal an antitrust revolution is underway. A central theme of this revolution is that competition laws can serve as a broad panacea to solve many societal problems, including privacy concerns.3

The Federal Trade Commission (“FTC”) is now led by Lina Khan, a 32-year old academic, who believes that “the current framework in antitrust – specifically its pegging competition to ‘consumer welfare,’ defined as short-term price effects – is unequipped to capture the architecture of market power in the modern economy.”4 Within her first month as chair of the FTC, Khan has moved quickly to revise guidance and protocols that may have otherwise limited expanded enforcement against broadly defined unfair competition, including predatory, exploitative and coercive practices. Transformation of current antitrust policy is also supported by pending legislation that calls for sweeping reform to “reinvigorate America’s antitrust laws and restore competition to American markets.”5

At the heart of the revolution is a sense that antitrust enforcement has failed to address anti-competitive acts by (i) limiting competitive effects to pricing and (ii) the general acceptance that driving a hard bargain is a lawful business practice as long as it doesn’t leverage market power in another relevant market. With a focus on pricing effects, modern antitrust analysis recognizes economic efficiency and the ability to lower costs – which can be passed on to consumers through lower prices – as redeeming pro-competitive benefits. However, the Biden administration appears keen to return to historical antitrust paradigms seen in the 1960s where maintenance of fragmented industries and markets was of paramount importance, even at the cost of higher prices.6

Biden’s Executive Order on Competition

On July 9, President Biden issued an Executive Order on Competition (“EOC”) and established a White House Competition Council to monitor progress on finalizing the initiatives in the order. The EOC encouraged enforcement efforts particularly in labor markets, agricultural markets, healthcare markets (prescription drugs, hospital consolidation and insurance), and the tech sector.7 In particular, the President announced a policy of greater scrutiny of mergers, “with particular attention to the acquisition of nascent competitors, serial mergers, the accumulation of data, competition by ‘free’ products, and the effect on user privacy” and “prior bad mergers that past administrations did not previously challenge.”8

In technology markets, President Biden encouraged the FTC to establish rules on (i) surveillance and the accumulation of data and (ii) barring unfair methods of competition in internet marketplaces, particularly where “large platforms’ power give them unfair opportunities to get a leg up on the small businesses that rely on them to reach customers.”9 The EOC calls for the FTC to use its rule-making authority to ban “pay for delay” and similar agreements among drugmakers and for the FDA to combat high prescription drug prices and price gouging. In agriculture, the EOC points to concentration in markets for seeds, equipment, feed and fertilizer. In labor markets, the EOC moves to prohibit non-compete clauses and unnecessary occupational licensing restrictions that impede economic mobility.10

Merger Guidelines

Also on July 9, FTC Chair Khan, within one month of being sworn in, issued a joint statement with Acting Assistant Attorney General Richard A. Powers of the Antitrust Division of the Department of Justice to consider revisions to the Merger Guidelines.11 We anticipate that federal antitrust authorities plan to significantly revamp the public guidance relating to both horizontal and vertical mergers. Chair Khan has raised concerns that current vertical merger enforcement has been over-permissive and not adequately addressed concerns regarding foreclosure and leverage.12 Khan has criticized the Reagan administration’s 1982 Merger Guidelines for its “radical departure” from an emphasis on “preserving and promoting market structures conducive to competition” to a disproportionate embrace of economic factors relating to price increases and output restrictions that has guided modern antitrust analyses to date.13 Instead, she calls on evaluating the neutrality of the competitive process and the openness of the market by examining: (i) entry barriers, (ii) conflicts of interest, (iii) the emergence of gatekeepers and bottlenecks, (iv) the use of and control over data, and (v) the dynamics of bargaining power. More emphasis would be placed on the competitive process and market structure, including what lines of business a firm is involved in and how those lines of business interact and whether the structure of the market creates or reflects dependencies. Chair Khan’s scholarly work has focused on pre-1980s antitrust analyses when courts, concerned with protecting small businesses and avoiding the adverse political consequences that may arise from the aggregation of economic power, blocked mergers with 5 percent share increases to prevent increased market concentration in its incipiency.14 President Biden’s remarks in the EOC echo this historical sentiment as he discusses “threats from growing corporate power” and the need to give “the little guy a fighting chance.”15

#### H---COVID

Andrew M. Levine 20, litigation partner who focuses his practice on white collar and regulatory defense, internal investigations, “White Collar Crime and COVID-19: Enforcement in a Rapidly Changing Landscape”, https://www.debevoise.com/insights/publications/2020/05/white-collar-crime-and-covid-19-enforcement-in-a

In the short term, while enforcement agencies prioritize safety and work remotely, at least certain aspects of white collar and regulatory investigations globally will slow. There is much anecdotal evidence that enforcement agencies have reduced the scale and pace of some investigations given current obstacles. For example, there will be inevitable delays as response times to subpoenas and investigative requests are extended due to difficulties in sourcing documents and information remotely. Further practical limitations – such as lack of remote access to investigation files and physical evidence due to information security protocols, court closures, difficulties with videoconference technology, and restrictions on in-person meetings and interviews – also have delayed investigations.

#### Biden’s XO solves---whole of government approach enables resource abundance.

Posner 21, professor at the University of Chicago Law School (Eric, 7-21-2021, "The Antitrust War’s Opening Salvo", Project Syndicate, <https://www.project-syndicate.org/commentary/biden-antitrust-executive-order-what-it-does-by-eric-posner-2021-07>. Accessed 7-22-21)

The executive order is ambitious in its scope and style. In strongly worded passages, it accuses businesses of monopolistic and unfair practices in major industries, including technology, agriculture, health care, and telecommunications. It laments the decline of government antitrust enforcement, and identifies numerous harms that have resulted – including economic stagnation and rising inequality.

The order also establishes a new bureaucratic organization in the White House to lead the anti-monopoly effort. Demanding a “whole-of-government” approach, it calls on the vast resources of numerous agencies, and not just the two that traditionally oversee antitrust (the Department of Justice and the Federal Trade Commission).

#### Link is illogical---if it is a priority, resources are taken from anywhere else.

#### Agencies are wrecked

MFEM 8/19, Masuda, Funai, Eifert & Mitchell, Ltd., "The Implications of President Biden's ‘Executive Order on Promoting Competition in the American Economy’," Mondaq, 08/19/2021, https://www.mondaq.com/unitedstates/antitrust-eu-competition-/1103288/the-implications-of-president-biden39s-executive-order-on-promoting-competition-in-the-american-economy.

On July 9, 2021, President Joe Biden signed a sweeping executive order titled the “Executive Order on Promoting Competition in the American Economy” (the “Order”), affirming the policy of the Biden administration to “enforce the antitrust laws to combat the excessive concentration of industry, the abuses of market power, and the harmful effects of monopoly and monopsony.” To achieve this, the Order, among other things, directs regulatory agencies to assert oversight over certain business practices and encourages regulatory agencies to develop and/or strengthen rules. The Order includes 72 initiatives by more than a dozen federal agencies.

The Order specifically cites the areas of “labor markets, agricultural markets, Internet platform industries, healthcare markets (including insurance, hospital, and prescription drug markets), repair markets, and United States markets directly affected by foreign cartel activity.” The scope of this order is broad. On the other hand, the Order itself does not create new regulations or laws, leaving the specific implications of it vague.

Although the implications of the Order are not limited to the area of antitrust, the Order reflects the Biden Administration's emphasis on it. For example, the Order encourages the DOJ and other agencies responsible for banking to update guidelines on banking mergers to provide heightened scrutiny of mergers. The Order also encourages the DOJ and the FTC to challenge prior “bad mergers,” meaning that mergers that went unchallenged under previous administrations may be challenged in the future. Another specific area that the Order focuses on is the right to repair; it encourages the FTC to limit equipment manufacturers from limiting consumer's rights to repair.

Other affected areas of law include, but are not limited to, labor and employment (e.g. non-compete agreements) and consumer protection (e.g. financial data portability). Corporations with any significant activity in the United States should assess the impact that the Order would have on their businesses and prepare for the materialization of the specific initiatives included in the Order.

### 2AC---AT: AI Impact

**CX was pretty funny**

John O. **McGinnis**\* **and** Linda **Sun**\*\* **20** – \*George C. Dix Professor, Northwestern University, and Associate-Designate, Wilmer Pickering Hale & Dorr LLP. “Unifying Antitrust Enforcement for the Digital Age.” Northwestern Public Law Research Paper No. 20-20. https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3669087

The FTC needs more **resources** to adequately address the nation’s growing privacy concerns. Currently, the FTC oversees both consumer protection—encompassing privacy—and antitrust,249 making the FTC the chief federal agency on privacy policy and enforcement250 and the nation’s de-facto privacy agency.251 The agency has long-standing experience in enforcing privacy statutes252 and also has special privacy assets, such as an internet lab capable of high-quality tech forensics to track invasions of privacy.253 The FTC, however, has failed to keep pace with the massive growth of privacy concerns—a phenomenon also driven by modern technology. Very few Americans feel conﬁdent in the privacy of their information in the digital age.254 According to a 2019 study, over 80% of Americans feel that they have little to no control over the data collected on them by companies and the government.255 To adequately address privacy concerns, the FTC needs more resources.256 The agency has been explicit that it needs more manpower to police tech companies. In requesting increased funding from Congress, FTC Director Joseph Simons said the money would allow the agency to hire additional staff and bring more privacy

cases.257 A former director of the FTC’s Bureau of Consumer Protection, which houses the

privacy unit, has called the FTC “woefully understaffed.”258

As of the spring of 2019, the FTC had only forty employees dedicated to privacy and data

security, compared to 500 and 110 employees at comparable agencies in the UK. and Ireland, respectively.259 Without more lawyers, investigators, and technologists, the FTC will be forced to conduct privacy investigations less thoroughly, and in some cases, **forgo them altogether**.260 Currently, the FT C’s resources are **spread thin across multiple missions**, to the **detriment of its privacy efforts**. Removing the agency’s antitrust responsibilities would reallocate resources from the antitrust department to its privacy unit and other areas of consumer protection. Further, it would free up the scarce time of the commissioners to oversee this essential effort.261

#### Impact isn’t for decades.

Mike Thomas 20. Quoting AI experts including MIT Physics Professors, Senior Features Writer for BuiltIn. THE FUTURE OF ARTIFICIAL INTELLIGENCE: 7 ways AI can change the world for better ... or worse, Updated: April 20, 2020, <https://builtin.com/artificial-intelligence/artificial-intelligence-future>

Klabjan also puts little stock in extreme scenarios — the type involving, say, murderous cyborgs that turn the earth into a smoldering hellscape. He’s much more concerned with machines — war robots, for instance — being fed faulty “incentives” by nefarious humans. As MIT physics professors and leading AI researcher Max Tegmark put it in a 2018 TED Talk, “The real threat from AI isn’t malice, like in silly Hollywood movies, but competence — AI accomplishing goals that just aren’t aligned with ours.” That’s Laird’s take, too. “I definitely don’t see the scenario where something wakes up and decides it wants to take over the world,” he says. “I think that’s science fiction and not the way it’s going to play out.” What Laird worries most about isn’t evil AI, per se, but “evil humans using AI as a sort of false force multiplier” for things like bank robbery and credit card fraud, among many other crimes. And so, while he’s often frustrated with the pace of progress, AI’s slow burn may actually be a blessing. “Time to understand what we’re creating and how we’re going to incorporate it into society,” Laird says, “might be exactly what we need.” But no one knows for sure. “There are several major breakthroughs that have to occur, and those could come very quickly,” Russell said during his Westminster talk. Referencing the rapid transformational effect of nuclear fission (atom splitting) by British physicist Ernest Rutherford in 1917, he added, “It’s very, very hard to predict when these conceptual breakthroughs are going to happen.” But whenever they do, if they do, he emphasized the importance of preparation. That means starting or continuing discussions about the ethical use of A.G.I. and whether it should be regulated. That means working to eliminate data bias, which has a corrupting effect on algorithms and is currently a fat fly in the AI ointment. That means working to invent and augment security measures capable of keeping the technology in check. And it means having the humility to realize that just because we can doesn’t mean we should. “Our situation with technology is complicated, but the big picture is rather simple,” Tegmark said during his TED Talk. “Most AGI researchers expect AGI within decades, and if we just bumble into this unprepared, it will probably be the biggest mistake in human history. It could enable brutal global dictatorship with unprecedented inequality, surveillance, suffering and maybe even human extinction. But if we steer carefully, we could end up in a fantastic future where everybody’s better off—the poor are richer, the rich are richer, everybody’s healthy and free to live out their dreams.”

#### No Rogue AI

Tenner 2014 (Edward Tenner, visiting researcher in the Rutgers Department of History and the Princeton Center for Arts and Cultural Policy Studies, author of Why Things Bite Back: Technology and the Revenge of Unintended Consequences and Our Own Devices: How Technology Remakes Humanity, The American, February 7, 2014, "Could Computers Get Too Smart?" http://www.american.com/archive/2014/february/could-computers-get-too-smart)

Kurzweil, who has proposed his own model of the mind, believes that the apparent complexity of the brain may be the result of simple rules, just as a six-character equation is enough to generate the ultra-intricate graphic called the Mandelbrot Set. IBM is investing $1 billion in its supercomputer Watson, which defeated human Jeopardy! champions. This project does not try to replicate the human brain’s structure — Watson could make errors no skilled human contestant would, like considering Toronto a U.S. city — but it also raises hopes and fears about the autonomy of machines. According to its CEO, Virginia M. Rometty, Watson “learns from its own experiences and from our interactions with it — and as it does, it keeps getting smarter. Its judgments keep getting better.” This might make it less necessary to hand-feed advanced machines with millions of commonsense facts; some critics of artificial intelligence, such as the British sociologist of science Harry Collins, believe that there is just too much of this “tacit knowledge” – including the countless facts about human relationships we take for granted — to specify. Even apart from the elusiveness of tacit knowledge, there are many reasons to doubt the imminence of a virtual human brain, let alone one that would become a self-multiplying, possibly civilization-threatening superintelligence. Artificial intelligence researchers themselves acknowledge that many tasks have taken far longer than their predecessors had predicted, leading in the past to disappointing results and funding slumps known as “AI winters.” Computer scientists specializing in computational complexity aren’t sure of whether brain modeling belongs in the category of problems so hard that centuries of hardware and software progress couldn’t solve them. Every so often, strikingly efficient computer procedures take experts by surprise, such as Google’s search algorithm in the 1990s. Artificial superintelligence may seem improbable, but history is full of great minds who said new inventions were impossible. As science fiction writer Arthur C. Clarke said, “Any sufficiently advanced technology is indistinguishable from magic.” In this case, will it be black magic? The most serious reason for skepticism about such technological developments is not a philosophical, physical, or psychological objection but one from everyday experience. I would take warnings about the dangers of superintelligent machines more seriously if today’s computers were able to make themselves more resistant to human hackers and to detect and repair their own faults. Organizations with access to some of the most advanced supercomputers and gifted programmers have been hacked again and again by individuals and groups with modest resources, compromising everything from credit card numbers to espionage secrets. We must balance charts of exponential growth of computing power, like those displayed by Kurzweil in How to Create a Mind, against more sobering ones of continuing electronic fragility.

## AT: DA---Court

### 2AC---Bipartisan

#### Plan is bipartisan.

Contreras 18, \*Jorge L. Contreras teaches in the areas of intellectual property law, property law and genetics and the law at the University of Utah. He has recently been named one of the University of Utah's Presidential Scholars, and won the 2018-19 Faculty Scholarship Award from the S.J. Quinney College of Law. Professor Contreras has previously served on the law faculties of American University Washington College of Law and Washington University in St. Louis, and was a partner at the international law firm Wilmer Cutler Pickering Hale and Dorr LLP, where he practiced transactional and intellectual property law in Boston, London and Washington DC; (August 2018, “Taking it to the Limit: Shifting U.S. Antitrust Policy Toward Standards Development”, https://dc.law.utah.edu/cgi/viewcontent.cgi?article=1114&context=scholarship)

This being said, antitrust policy regarding standard-setting, and hold-up in particular, did not previously appear to run along party lines. In fact, many key DOJ position statements regarding hold-up, including those expressed in its 2006 and 2007 business review letters to VITA and IEEE, respectively, and the 2007 report on antitrust and IP that it produced jointly with the FTC, were developed during the Republican George W. Bush Administration. Each of these documents acknowledged the existence and potential anticompetitive effects of hold-up. At least in this area, the Obama DOJ did not appear to deviate significantly from the policies of prior administrations. As observed by FTC Commissioner Terrell McSweeny, the FTC and prior DOJ approach to combatting hold-up were based on “15 years of scholarship and bipartisan study” and should not lightly be discarded.37

#### The pro-business link---link turn, the AFF is because it allows other businesses to innovate in 5G!

### 2AC---UQ

#### Roe is as good as dead.

[Mark](https://slate.com/author/mark-joseph-stern) Stern 9/2. Professor of Social Policy and History at the University of Pennsylvania. 9/2/2021. “The Supreme Court Overturned Roe v. Wade in the Most Cowardly Manner Imaginable.” https://slate.com/news-and-politics/2021/09/supreme-court-overturn-roe-wade-texas.html

At midnight on Wednesday, in an unsigned 5–4 [decision](https://www.supremecourt.gov/opinions/20pdf/21a24_8759.pdf), the Supreme Court effectively overturned *Roe v. Wade*. The five most conservative Republican-appointed justices refused to block Texas’ abortion ban, which allows anyone to sue any individual who “aids or abets” an abortion after six weeks, which is when the vast majority of operations occur. There is no exception for rape or incest. The decision renders almost all abortions in Texas illegal for the first time since 1973. Although the majority did not say these words exactly, the upshot of Wednesday’s decision is undeniable: The Supreme Court has abandoned the constitutional right to abortion. *Roe*is no longer good law.

Texas’ ban, known as SB 8, constitutes [a uniquely insidious workaround](https://slate.com/news-and-politics/2021/05/texas-abortion-ban-lawsuit-liability.html) to *Roe*. It outlaws abortion after six weeks but does not call on state officials to enforce its restrictions.  
Instead, as Justice Sonia Sotomayor wrote in dissent, the law “deputized the State’s citizens as bounty hunters, offering them cash prizes for civilly prosecuting their neighbors’ medical procedures.” Random strangers can sue any “abettor” to an abortion anywhere in Texas and collect a minimum of $10,000, plus attorneys’ fees. The act’s language is incredibly broad, encompassing any friend, family member, clergy member, or counselor who facilitates the abortion in any way. Every employee of an abortion clinic, from front desk staff to doctors, is liable as well. And when an individual successfully sues an abortion provider, the court must permanently shut it down.

### 2AC---Impact

#### Impact is vacuous---no one is going to war over Roe v Wade.

#### Overpopulation is not a serious threat - the earth and our environmental structures are incredibly resilient

**Ellis 12** (Erle Ellis, Erle Ellis is an environmental scientist at the University of Maryland, Baltimore County and a leading theorist of the Anthropocene, the age of humans., Winter 2012, *The Planet of No Return*, The Breakthrough, <https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-planet-of-no-return>) // MD

Over the last several decades, a consensus has grown among scientists that humans have become the dominant ecological force on the planet. According to these scientists, we are now living in the Anthropocene, a new geological epoch shaped by humans.[1](https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-planet-of-no-return" \l "foot1) While some have hailed this forward-looking vision of the planet, others have linked this view with the perennial concern that human civilization has exceeded the carrying capacity of Earth's natural systems and may thus be fundamentally unsustainable.[2](https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-planet-of-no-return" \l "foot2) In this article, I argue that this latter notion rests upon a series of assumptions that are inconsistent with contemporary science on how humans interact with ecosystems, as well as with most historical and archeological evidence.

Ever since early humans discovered fire and the benefits of collaborative systems such as collective hunting and social learning, human systems, not the classic biophysical limits that still constrain other species, have set the wider envelope for human population growth and prosperity. It was not planetary boundaries, but human system boundaries that constrained human development in the Holocene, the geological epoch that we have just left. We should expect no less in the Anthropocene.

Humans have dramatically altered natural systems -- converting forests to farmlands, damming rivers, driving some species to extinction and domesticating others, altering the nitrogen and carbon cycles, and warming the globe -- and yet the Earth has become more productive and more capable of supporting the human population.[3](https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-planet-of-no-return" \l "foot3) This process has dramatically intensified in recent centuries at a rate unprecedented in Earth's (and human) history,[4](https://thebreakthrough.org/index.php/journal/past-issues/issue-2/the-planet-of-no-return" \l "foot4) but there is little evidence to date that this dynamic has been fundamentally altered. While the onset of the Anthropocene carries new ecological and social risks, human systems such as agriculture have proven extraordinarily resilient to environmental and social challenges, responding robustly to population pressures, soil exhaustion, and climate fluctuations over millennia, from a global perspective.

### 1NC --- Constitutional Modelling D

#### No impact --- modelling has been in decline for years --- AND, there are tons of alt causes.

David S. Law & Mila Versteeg, 2012 [Professor of Law and Professor of Political Science at Washington University in St. Louis; Associate professor of law and director of the Human Rights Program at the University of Virginia School of Law. Most of her research deals with the origins, evolution, and effectiveness of provisions in the world's constitutions, “THE DECLINING INFLUENCE OF THE UNITED STATES CONSTITUTION” PDF] KD-NCP

The appeal of American constitutionalism as a model for other countries appears to be waning in more ways than one. Scholarly attention has thus far focused on global judicial practice: There is a growing sense, backed by more than purely anecdotal observation, that foreign courts cite the constitutional jurisprudence of the U.S. Supreme Court less frequently than before.247 But the behavior of those who draft and revise actual constitutions exhibits a similar pattern. Our empirical analysis shows that the content of the U.S. Constitution is becoming increasingly atypical by global standards. Over the last three decades, other countries have become less likely to model the rights-related provisions of their own constitutions upon those found in the U.S. Constitution. Meanwhile, global adoption of key structural features of the Constitution, such as federalism, presidentialism, and a decentralized model of judicial review, is at best stable and at worst declining. In sum, rather than leading the way for global constitutionalism, the U.S. Constitution appears instead to be losing its appeal as a model for constitutional drafters elsewhere. The idea of adopting a constitution may still trace its inspiration to the United States, but the manner in which constitutions are written increasingly does not. If the U.S. Constitution is indeed losing popularity as a model for other countries, what—or who—is to blame? At this point, one can only speculate as to the actual causes of this decline, but five possible hypotheses suggest themselves: (1) the advent of a superior or more attractive competitor; (2) a general decline in American hegemony; (3) judicial parochialism; (4) constitutional obsolescence; and (5) a creed of American exceptionalism. With respect to the first hypothesis, there is little indication that the U.S. Constitution has been displaced by any specific competitor. Instead, the notion that a particular constitution can serve as a dominant model for other countries may itself be obsolete. There is an increasingly clear and broad consensus on the types of rights that a constitution should include, to the point that one can articulate the content of a generic bill of rights with considerable precision.248 Yet it is difficult to pinpoint a specific constitution—or regional or international human rights instrument—that is clearly the driving force behind this emerging paradigm. We find only limited evidence that global constitutionalism is following the lead of either newer national constitutions that are often cited as influential, such as those of Canada and South Africa, or leading international and regional human rights instruments such as the Universal Declaration of Human Rights and the European Convention on Human Rights. Although Canada in particular does appear to exercise a quantifiable degree of constitutional influence or leadership, that influence is not uniform and global, but more likely reflects the emergence and evolution of a shared practice of constitutionalism among common law countries.249 Our findings suggest, instead, that the development of global constitutionalism is a polycentric and multipolar process that is not dominated by any particular country.250 The result might be likened to a global language of constitutional rights, but one that has been collectively forged rather than modeled upon a specific constitution. Another possibility is that America’s capacity for constitutional leadership is at least partly a function of American “soft power” more generally.251 It is reasonable to suspect that the overall influence and appeal of the United States and its institutions have a powerful spillover effect into the constitutional arena. The popularity of American culture, the prestige of American universities, and the efficacy of American diplomacy can all be expected to affect the appeal of American constitutionalism, and vice versa. All are elements of an overall American brand, and the strength of that brand helps to determine the strength of each of its elements. Thus, any erosion of the American brand may also diminish the appeal of the Constitution for reasons that have little or nothing to do with the Constitution itself. Likewise, a decline in American constitutional influence of the type documented in this Article is potentially indicative of a broader decline in American soft power. There are also factors specific to American constitutionalism that may be reducing its appeal to foreign audiences. Critics suggest that the Supreme Court has undermined the global appeal of its own jurisprudence by failing to acknowledge the relevant intellectual contributions of foreign courts on questions of common concern252 and by pursuing interpretive approaches that lack acceptance elsewhere.253 On this view, the Court may bear some responsibility for the declining influence of not only its own jurisprudence, but also the actual U.S. Constitution: One might argue that the Court’s approach to constitutional issues has undermined the appeal of American constitutionalism more generally, to the point that other countries have become unwilling to look either to American constitutional jurisprudence or to the U.S. Constitution itself for inspiration.254 It is equally plausible, however, that responsibility for the declining appeal of American constitutionalism lies with the idiosyncrasies of the Constitution itself rather than the proclivities of the Supreme Court. As the oldest formal constitution still in force and one of the most rarely amended constitutions in the world,255 the U.S. Constitution contains relatively few of the rights that have become popular in recent decades.256 At the same time, some of the provisions that it does contain may appear increasingly problematic, unnecessary, or even undesirable with the benefit of two hundred years of hindsight.257 It should therefore come as little surprise if the U.S. Constitution strikes those in other countries—or, indeed, members of the U.S. Supreme Court258—as out of date and out of line with global practice.259 Moreover, even if the Court were committed to interpreting the Constitution in tune with global approaches, it would still lack the power to update the actual text of the document. Indeed, efforts by the Court to update the Constitution via interpretation may actually reduce the likelihood of formal amendment by rendering such amendment unnecessary as a practical matter.260 As a result, there is only so much that the U.S. Supreme Court can do to make the U.S. Constitution an attractive formal template for other countries. The obsolescence of the Constitution, in turn, may undermine the appeal of American constitutional jurisprudence. Foreign courts have little reason to follow the Supreme Court’s lead on constitutional issues if the Supreme Court is saddled with the interpretation of an unusual and obsolete constitution.261 No amount of ingenuity or solicitude for foreign law on the part of the Court can entirely divert attention from the fact that the Constitution itself is an increasingly atypical document. One way to put a more positive spin on the U.S. Constitution’s status as a global outlier is to emphasize its role in articulating and defining what is unique about American national identity. Many scholars have opined that formal constitutions serve an expressive function as statements of national identity.262 This view finds little support in our own empirical findings, which suggest instead that constitutions tend to contain relatively standardized packages of rights.263 Nevertheless, to the extent that constitutions do serve such a function, the distinctiveness of the U.S. Constitution may reflect the uniqueness of America’s national identity. In this vein, various scholars have argued that the U.S. Constitution lies at the very heart of an “American creed of exceptionalism,” which combines a belief that the United States occupies a unique position in the world with a commitment to the qualities that set the United States apart from other countries.264 From this perspective, the Supreme Court’s reluctance to make use of foreign and international law in constitutional cases amounts not to parochialism, but rather to respect for the exceptional character of the nation and its constitution.265 Unfortunately, it is clear that the reasons for the declining influence of American constitutionalism cannot be reduced to anything as simple or attractive as a longstanding American creed of exceptionalism. Historically, American exceptionalism has not prevented other countries from following the example set by American constitutionalism. The global turn away from the American model is a relatively recent development that postdates the Cold War. If the U.S. Constitution does in fact capture something profoundly unique about the United States, it has surely been doing so for longer than the last thirty years. A complete explanation of the declining influence of American constitutionalism in other countries must instead be sought in more recent history, such as the wave of constitution making that followed the end of the Cold War.266 During this period, America’s newfound position as lone superpower might have been expected to create opportunities for the spread of American constitutionalism. But this did not come to pass. Once global constitutionalism is understood as the product of a polycentric evolutionary process, it is not difficult to see why the U.S. Constitution is playing an increasingly peripheral role in that process. No evolutionary process favors a species that is frozen in time. At least some of the responsibility for the declining global appeal of American constitutionalism lies not with the Supreme Court, or with a broader penchant for exceptionalism, but rather with the static character of the Constitution itself. If the United States were to revise the Bill of Rights today—with the benefit of over two centuries of experience, and in a manner that addresses contemporary challenges while remaining faithful to the nation’s best traditions—there is no guarantee that other countries would follow its lead. But the world would surely pay close attention.

### 2AC---Court Capital Theory False

#### Court capital isn’t transferrable.

Redish 95, \*Martin, Louis and Harriet Ancel Professor of Law and Public Policy at Northwestern University School of Law, teaches and writes on the subjects of federal jurisdiction, civil procedure, freedom of expression and constitutional law; (“The Constitution as Political Structure”, https://books.google.com/books?id=z3XmCwAAQBAJ&pg=PA20&lpg=PA20&dq=court+institutional+capital+transferable&source=bl&ots=0kC1kjNdWy&sig=G8dFWZ7y87qQm6ptHHdSr1X3ZgQ&hl=en&sa=X&ved=0ahUKEwjGqZHf067aAhUm4YMKHaVEB7QQ6AEIMzAC#v=onepage&q=court%20institutional%20capital%20transferable&f=false)

Choper’s assumption that the judiciary’s institutional capital is transferable from structural cases to individual rights cases is no more credible. Common sense should tell us that the public’s reaction to controversial individual rights cases—for example, cases concerning abortion, school prayer, busing, or criminal defendants’ rights—will be based largely, if not exclusively, on its feelings concerning those particular issues. There exist no grounds to believe that the public’s acceptance or rejection of these individual rights rulings would somehow be affected by anything the court says about wholly unrelated structural issues.

### 2AC---Thumper---Antitrust

#### NCAA ruling thumps.

Edelman 21, \*Marc Edelman is Professor of Law at the Zicklin School of Business (City University of New York), where he focuses on sports, antitrust, gaming, and intellectual property law; (June 21st, 2021, “Supreme Court’s Ruling Against NCAA In College Athlete Pay Case Rests On Decades Of Legal Precedent”, https://www.forbes.com/sites/marcedelman/2021/06/21/as-earlier-predicted-us-supreme-court-rules-against-ncaa-9-0/?sh=2a6bd796824b)

Back in April, I [predicted on Forbes.com](https://www.forbes.com/sites/marcedelman/2021/04/05/seven-reasons-why-the-ncaa-is-likely-to-lose-its-supreme-court-case/) that the National Collegiate Athletic Association would lose its Supreme Court antitrust case, NCAA v. Alston, in a 9-0 ruling. At the time, I explained that the most interesting question in this case would not be who would win but rather whether the U.S. Supreme Court would go even further than the U.S. Court of Appeals in reining in what the NCAA currently calls “amateurism.”

Today, we [got our answer](https://www.supremecourt.gov/opinions/20pdf/20-512_gfbh.pdf). The NCAA indeed did lose its Supreme Court case, 9-0. And Justice Brett Kavanaugh, [channeling a view of the NCAA expressed earlier](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2226541), took the time to write a concurring opinion that put the writing on the wall that many other NCAA rules—beyond just limits on educational-related, in-kind benefits—might also one day be found to violate Section 1 of the Sherman Act.

### 2AC---Thumper---Court Capital

#### Court is unpredictable and a multitude of cases thump.

Solomon 21, \*Aron Solomon, the senior digital strategist for NextLevel.com and an adjunct professor at the Desautels Faculty of Management at McGill University in Montreal; (July 26th, 2021, “Coming Supreme Court term could prove historic”, https://www.theday.com/article/20210726/OP03/210729694)

The most important and high-profile case the U.S. Supreme Court will hear in the upcoming 2021-2022 term that begins in October revisits Roe v. Wade. There’s no way to overstate how important Dobbs v. Jackson Women’s Health Organization is, as this case has the potential to fundamentally rewrite the law of the land regarding abortion.

Aside from Dobbs, which I examine in more detail here, there are several other key cases to watch.

In CVS Pharmacy, Inc. v. Doe, HIV-AIDS patients are suing CVS pharmacies that provide them with HIV medication. The issue here is that CVS refuses to sell their medication at their locations within the community, forcing patients to acquire their medication only via mail-order or through specialized CVS locations. The court will decide whether CVS is violating the disability portions of the Affordable Care Act.

In Gallardo v. Marstiller, a 13-year-old living in Florida in 2008 was hit by a truck. After Florida’s Medicaid program paid over $862,000 for her care, they came after the family for $300,000 of the settlement they had won. The Court needs to determine whether under Medicaid law states are allowed to seek reimbursement from legal settlements.

Aside from cases the court has already agreed to hear, given that it is still early, they are expected to agree to hear more. One case that was decided at the state court level recently that might be interesting for the Supreme Court regards Washington state’s limited license to practice law.

Its technical name is the Limited License Legal Technician and the Washington Supreme Court decided in 2020 to “sunset” the program, which allowed non-lawyers to perform some legal tasks. While the program officially ends on the last day of July, there has been word on the legal street of at least one strong upcoming challenge to ending the program. Why the court might be interested in the right case dealing with the LLLT is because ending the program tightens the legal profession’s hold on having only lawyers perform legal tasks in an environment that is re-examining fundamental industry questions, such as who is allowed to own a law firm.

There is one other case that isn’t yet a case but could very well become one fast. The Texas special legislative session legislature this month will deal with several important issues, one of which is antiabortion legislation. What makes the legislation unique, and may make it perfect for review from the highest court in the land, is how bizarre its enforcement mechanism is.

The Texas law is one of approximately 100 new restrictive abortion laws coming in across the country. What makes the Texas law unique is the fact that this heartbeat law won’t be enforced by the state but can be enforced by anyone.

That’s right, anyone.

If you’re picturing roving bands of anti-abortion activists visiting clinics and providers to stop any abortions that violate Texas’ heartbeat law (or any abortion at all) you’re probably on the right track. While this issue is far too early at the moment for Supreme Court review, one could imagine that with the right plaintiff and set of facts as to how the heartbeat bill in Texas is enforced, this could move reasonably quickly up the courts.

Adriana Gonzalez, a civil rights lawyer, points out that any abortion law that essentially invites activists to enforce it has the potential for disaster; “While each one of these state abortion ‘heartbeat laws’ poses its own difficulties, any heartbeat law where the state allows and actually encourages the general public to enforce it is an invitation to violence.“

A final thing to watch between now and October is what Justice Stephen Breyer is going to do. There is a general expectation that he plans to soon resign, and the fact that he has yet to make his decision is concerning to a lot of people who fall ideologically at or to the left of center. The longer Breyer waits to announce his retirement, the lower the percentage chance that President Joe Biden will be able to nominate a replacement who is ideologically aligned.

With a court that has been remarkably unpredictable to date, yet does indeed have a 6-3 conservative majority, any risk of losing one of those three liberal seats is a danger no liberal president or jurist should take lightly.

### 2AC---No Swing Vote

#### 6-3 majority turns swing votes into bystanders and provides political cover for inevitable landmark cases.

Stevenson 21, \*Peter W. Stevenson writes The 5-Minute Fix newsletter and covers national and state politics for The Fix. He's been at The Washington Post since 2015 and has been the senior political video producer since 2017; (May 20th, 2021, “Chief Justice John Roberts: From key swing vote to potential bystander?”, https://www.washingtonpost.com/politics/2021/05/20/chief-justice-john-roberts-key-swing-vote-potential-bystander/)

Barrett’s confirmation didn’t just give conservatives on the court a 6-3 majority; it also means Chief Justice John G. Roberts Jr. is no longer as likely to be a swing vote on the court — marking a sudden change to the amount of power Roberts has to steer the direction of the court.

When President Donald Trump made his third and final [Supreme Court](https://www.washingtonpost.com/politics/courts_law/supreme-court-abortion-roe-v-wade/2021/05/17/cdaf1dd6-b708-11eb-a6b1-81296da0339b_story.html?itid=lk_inline_manual_5) nomination, putting Barrett in the seat previously occupied by Ruth Bader Ginsburg, the court became more conservative than it had been [in more than 50 years](https://www.washingtonpost.com/politics/2020/09/22/if-trump-appoints-third-justice-supreme-court-would-be-most-conservative-its-been-since-1950/?itid=lk_inline_manual_5). With a conservative majority on the court, Republicans hope justices could make a series of landmark decisions on issues their electorate is passionate about. At the top of that list is abortion rights.

By the time Trump took office, Republicans had succeeded in making the nomination of Supreme Court justices an issue that drives voter turnout in a way Democrats couldn’t. In exit polls conducted after Trump’s election in 2016, [one-fifth of voters said court nominations](https://www.washingtonpost.com/politics/2020/09/18/where-polling-stands-supreme-court-vaults-into-top-tier-campaign-issues/?itid=lk_inline_manual_8) were the most important factor in their vote, and those voters broke for Trump by a 15-point margin.

When Ginsburg died last September, handing Trump the opportunity to make a third nomination and swing the court even further to the right, it became a more urgent issue for Democrats. About two-thirds of Joe Biden supporters said Supreme Court nominees were “very important” to their vote in an August 2020 Pew Research [poll](https://www.pewresearch.org/politics/2020/08/13/important-issues-in-the-2020-election/), while about 6 in 10 Trump supporters said the same.

But Trump was already on his way to nominating Barrett, a right-leaning justice who gave conservatives on the court what amounts to a majority. That got Republicans excited — and made Democrats nervous — about the possibility of the court making the kind of rulings conservatives have had on their wish list for decades, starting with overturning Roe v. Wade, the landmark abortion case.

The 2020 Democrats want to ‘codify’ Roe v. Wade. Here’s what that means.

The landmark 1973 Supreme Court decision established a woman’s constitutional right to have an abortion. Some Democrats want to make it into law. (Blair Guild/The Washington Post)

Now, the Mississippi law is under the court’s microscope. The law hasn’t gone into effect because of lower-court rulings that say it goes against decades of Supreme Court precedent, including Roe v. Wade. But the Supreme Court has more latitude to revisit such precedents when it is deemed warranted.

“In an unbroken line dating to Roe v. Wade, the Supreme Court’s abortion cases have established (and affirmed, and reaffirmed) a woman’s right to choose an abortion before viability,” Judge Patrick Higginbotham wrote for the U.S. Court of Appeals for the 5th Circuit.

The Supreme Court has long declined to take on such cases, often falling back on the precedent set by previous decisions. Under Roberts, even with a 5-4 conservative majority after Trump’s first two nominees, Neil M. Gorsuch and Brett M. Kavanaugh, were confirmed, the court seemed reluctant to take on big, landmark cases — and certainly to challenge precedent on politically sensitive issues. It has been suggested that Roberts aimed to make the court appear less political by avoiding those sensitive issues. Some conservatives have even said he lacks the will to address issues such as abortion at all. But such things could increasingly be out of his hands.

Roberts’s status as a key swing vote was solidified by the [2012 decision he wrote](https://www.washingtonpost.com/politics/supreme-court-to-rule-thursday-on-health-care-law/2012/06/28/gJQAarRm8V_story.html?itid=lk_inline_manual_17) upholding the Affordable Care Act’s constitutionality, in which the individual care mandate was preserved as a tax, a decision that infuriated conservatives.

But his supposed efforts to depoliticize the court were blunted by Barrett’s appointment. In a 6-3 court, Roberts is no longer a swing vote. Even if he were to side with the liberal-leaning justices, they could be outvoted 5-4.

This [isn’t the first case](https://www.washingtonpost.com/politics/courts_law/supreme-court-guns-second-amendment-national-rifle-association/2021/04/26/83e865c8-a690-11eb-8c1a-56f0cb4ff3b5_story.html?itid=lk_inline_manual_21) that has seemingly made Roberts’s vote potentially less potent — but it has the potential to be the most high-profile (though we have no idea what the court will do with it).

## K---CAP

### 2AC---AT: K---Cap (Short)

#### The ballot is a referendum on the hypothetical consequences of the plan. Any links must be to the implementation of the plan and there must be an alt that causally solves their harms, with the inclusion of the plan precluding that solvency.

#### Key to fairness---plan-focus is the most predictable and non-arbitrary. Any other interp ex post shifts the goalposts which moots the 1AC.

#### Permutation do both.

#### Permutation do the aff then the alternative in all other instances.

#### Both advantages impact turn the K---they’re robust defenses of innovation, which the alt can’t solve.

Kornai 13, \*János Kornai is a Hungarian economist and the Allie S. Freed Professor of Economics Emeritus at Harvard and Professor Emeritus at Corvinus University of Budapest; (János, November 6th, 2013, “Dynamism, Rivalry, and the Surplus Economy”, DOI:10.1093/acprof:oso/9780199334766.001.0001, Google Books)

C. There is no competition between producers and sellers. Production is strongly concentrated. Many companies enjoy monopolist positions, or at least a (regional) monopoly in producing an entire group of products. The chronic shortage of products creates monopolistic behavior even when many producers operate in parallel. The shortage economy, one of the strongest system-specific properties of socialism, ~~paralyzes~~ impedes the forceful engine of innovation, the incentive to fight for the favors of the customer ( Kornai 1971 ; 1980; 1992, chapters 11 – 12 ). The producer/seller is not compelled to attract the buyer by offering him a new and better product, since the latter is happy to get anything in the shop, even an obsolete and poor-quality product.

There are examples of inventive activities motivated by chronic shortages: ingeniously created substitutes for missing materials or machinery parts (Laki 1984 –1985). These results of the inventors’ creative mind, however, do not become widespread, commercially successful innovations in the Schumpeterian sense. 25 Table 2.1 features only one revolutionary innovation that did not appear first in a capitalist country but, rather, in the Soviet Union: synthetic rubber. Its inventor had been doing research on the subject for decades; the employment of it in industry was rendered necessary by the shortage of natural rubber.

D. The tight limits of experimenting. Capitalism allows for hundreds or thousands of barren or barely fruitful attempts, so that, afterward, one out of the hundreds or thousands would succeed and bring immense success. In the socialist planned economy, actors are inclined to avoid risks. As a result, the application of revolutionarily significant innovations are more or less excluded, since those always mean a leap into the dark, as success is necessarily unpredictable. As far as followers are concerned, some economies follow up quickly, others slowly. The socialist economies belong to the group characterized by the slowest pace. They prefer to maintain the already known, old production procedures, and produce the old well-tried products; new technologies and new products have too many uncertain characteristics making the planning of the directives difficult.

E. There is no capital waiting to be utilized; investment allocation is rigid. Central planning is not miserly with the resources devoted to capital formation. The share of investment carved out from the total output is typically higher than in the capitalist economies. However, this enormous volume is appropriated ahead of time to the last penny. Moreover, most of the time over-allocation takes place; in other words, the ensemble of all project plans prescribes the requisition of more resources than the required amount to execute the plan. It never happens that unallocated capital is waiting for someone with a good idea. The allocators do not search for an entrepreneur waiting to step forward with a proposal for innovation. Flexible capital markets are unknown. Instead, the rigid and bureaucratic regulation of project activities takes place, and to devote capital resources to activities with possibly uncertain outcomes is unconceivable. No foolish minister of industry or factory manager could be found who would demand money for ventures admitting in advance that the money may be wasted and the innovation may not succeed. 26

#### The alt doesn’t solve---capital is dynamic and neutralizes internal threats---proven by Occupy.

#### Economic growth is responsible for drastic improvements in global living standards, and is the only path for future improvements.

Cowen 18, \*Tyler Cowen is a Holbert L. Harris Professor at George Mason University and Director of the Mercatus Center; (October 16th, 2018, “Stubborn Attachments: A vision for a society of free, prosperous, and responsible individuals”, <https://www.goodreads.com/en/book/show/31283667-stubborn-attachments>)

How good is growth, anyway ?

The history of economic growth indicates that, with some qualifications, growth alleviates misery, improves happiness and opportunity, and lengthens lives. Wealthier societies have better living standards, better medicines, and offer greater personal autonomy, greater fulfillment, and more sources of fun. While measured wealth does not exactly correspond to Wealth Plus, these two concepts have come pretty close to one another in the past, especially across the range of outcomes we have observed (as opposed to hypothetical thought experiments and counterfactuals).

We often forget how overwhelmingly positive the effects of economic growth have been. Economist Russ Roberts reports that he frequently polls journalists about how much economic growth there has been since the year 1900. According to Russ, the typical response is that the standard of living has gone up by around fifty percent. In reality, the U.S. standard of living has increased by a factor of five to seven, estimated conservatively, and possibly much more, depending on how we measure prices and the values of outputs over time, a highly inexact science.

The data show just how much living standards have gone up. In 1900, for instance, almost half of all U.S. households (forty-nine percent) had more than one occupant per room and almost one quarter (twenty-three percent) had over 3.5 persons per sleeping room. Slightly less than one quarter (twenty-four percent) of all U.S. households had running water, eighteen percent had refrigerators, and twelve percent had gas or electric lighting. Today, the figures for all of these stand at ninety-nine percent or higher. Back then, only five percent of households had telephones, and none of them had radio or TV. The high school graduation rate was only about six percent, and most jobs were physically arduous and had high rates of disability or even death. In the mid-nineteenth century, a typical worker might have put in somewhere between 2,800 and 3,300 hours of work a year; that estimate is now closer to 1,400 to 2,000 hours a year. 6

Until recently, polio, tuberculosis, and typhoid were common ailments, even among the rich. U.S. presidents George Washington, James Monroe, Andrew Jackson, Abraham Lincoln, Ulysses S. Grant, and James A. Garfield all caught malaria during their lives. Antibiotics and vaccines have existed for only a tiny fraction of human history, and it is no coincidence that they emerged in the wealthiest time period humanity has ever seen. There is also a strong and consistent relationship between wealth and rates of infant mortality; small children do best when they are born into wealthier countries, and that is because wealth supplies the resources to take better care of them.

As recently as the end of the nineteenth century, life expectancy in Western Europe was roughly forty years of age, and food took up fifty to seventy-five percent of a typical family budget. The typical diet in eighteenth-century France had about the same energy value as that of Rwanda in 1965, the most malnourished nation for that year. One effect of this deprivation was that most people simply did not have much energy for life.

In earlier time periods, most individuals performed hard physical labor, and a college or university education—or even a high school education—was a luxury. Leisure time has risen with economic growth. In 1880, about four-fifths of individuals’ discretionary time was spent working, according to economist Robert Fogel. Today we spend about fifty-nine percent of our time doing what we like, and that may rise to seventy-five percent by 2040. 8

The splendors of the modern world are not just frivolous baubles; they are important sources of human comfort and well-being. Imagine that a time traveler from the eighteenth century were to pay a visit to Bill Gates today. He would find televisions, automobiles, refrigerators, central heating, antibiotics, plentiful food, flush toilets, cell phones, personal computers, and affordable air travel, among other remarkable benefits. The most impressive features of Gates’s life, seen from the point of view of a person from the eighteenth century, are those shared by most citizens of wealthy countries today. My smartphone is as good as his. The very existence of an advanced civilization—the product of cumulative economic growth—confers immense benefits to ordinary citizens, including their ability to educate and entertain themselves and choose one life path over another. For further arguments along these lines, I recommend Steven Pinker’s recent book, Enlightenment Now: The Case for Reason, Science, Humanism, and Progress . 9

The economic growth of the wealthier countries benefits the very poor as well, though sometimes with considerable lags. The distribution of wealth changes over time, and not all growth trickles down, but as an overall historical average, the bottom quintile of an economy shares in growth. 10 You can see this by comparing the bottom quintile in, say, the United States to the bottom quintile in India or Mexico.

The richer economy can also do more to elevate the living standards of immigrants. Poor people who move to rich countries usually receive higher incomes and have better living conditions, and their children do better still. The richer the receiving country, the more new immigrants tend to benefit. Central American immigrants to the United States do better than Central American immigrants to Mexico or Nepalese immigrants to India. Immigrants also send remittances back home at a rate that far exceeds governmental foreign aid. Actual upward mobility in the United States far exceeds what the usual numbers indicate, because published statistics on upward mobility do not typically include a comparison with pre-immigration outcomes.

But the chain of benefits does not stop there. Migrants will often return to their home countries, bringing new skills and new business connections. Both India and Israel have developed vibrant technology and software scenes precisely because of their close ties with the start-up scene of the United States. English-language universities in English-speaking countries have trained many thousands of Asian students in science and engineering, again leading to new businesses and, eventually, higher economic growth in their home countries.

New medicines and technologies developed in wealthy nations also make their way to the rest of the world, as illustrated most conspicuously by the rapid spread of the cell phone and now the smartphone. One study predicts that if the leading twenty-one industrial countries were to boost their R&D by half a percentage point of GDP, U.S. output alone would grow by fifteen percent. But it doesn’t end there: output in Canada and Italy would grow by about twenty-five percent, and the output of all industrial nations would increase by 17.5 percent, on average. In the less economically developed countries, output would increase by about 10.6 percent on average. 11

Although these historical processes have often embodied unfairness and long lags of decades or more, economic growth has nonetheless brought wealth to the poor and elevated their status. The Greek city-states and the Roman Empire benefited from maritime trade across the Mediterranean; those regions in turn spread growth-enhancing institutions around Europe, Northern Africa, and the Middle East. The commercial revolution of the late Middle Ages and Renaissance reopened many of the trade routes of antiquity, and eventually human beings started to climb out of the Malthusian trap of very low per capita incomes at subsistence. The wealth of the West helped to enable the export miracles of the East Asian economies. Today, most poor countries seek greater access to wealthier Western and Asian markets, and flourish if they can achieve it. 12

For all the recent increases in inequality within individual nations, global inequality has declined over the last few decades, in large part because of growth in China and India. And the growth in these emerging nations was largely driven by earlier growth in the West and in East Asia. China, for instance, engaged in “catch-up” growth by adopting Western technologies and exporting to the wealthier nations. China has gone from being a quite poor nation to a “middle-income” nation with a sizable middle and upper class.

Although recent media coverage has focused almost exclusively on within-nation magnitudes, recent world history has been an extraordinarily egalitarian time. It is above all else a story about how global economic growth helps the poor. There has been a squeezing of the middle class in the wealthier nations, in part because of increasing global competition. Still, we have seen economic growth, aggregate wealth, and global income equality all rising together over the last twenty-five years. Many citizens in East Asia, South Asia, and Latin America have seen significant gains in their standard of living, and much of this has been a trickle-down effect from the earlier growth of the wealthier countries. Much of Africa is now following suit, bolstered in part by China’s demand for raw materials, and also by the spread of modern technologies such as affordable cell phones. 13

Sometimes extended periods of growth do not confer full or fair benefits to the poor or lower classes, for instance during the early phase of the British Industrial Revolution in the late eighteenth century. Still, the historical record suggests that it was better for Britain to push ahead with economic growth, as this eventually drove the greatest boost in living standards the world has ever seen. To be sure, there were probably better policies which, had they been adopted, would have distributed the benefits of growth more widely (e.g., fewer wars and Poor Law reform and free trade for the British). But even taking misguided policies into account, Britain fared better by pursuing economic growth rather than turning its back on the idea, even though significant real wage gains for the working class often did not arrive until the 1840s.

Nobel Laureate Amartya Sen has promoted the idea of “capabilities” as, if not quite a substitute for economic growth, then an alternative focus. Sen points out that our positive opportunities in life often matter more than the amount of cash in our bank accounts. He also notes that some parts of the world, such as the state of Kerala in India, have relatively good health and education indicators, even though their per capita incomes are relatively low.

Sen’s points are well taken, but they do not put a fundamental dent in the relevance of wealth, or, as I am calling it here, Wealth Plus. The significant benefits accrued from capabilities, such as health benefits, are accounted for in Wealth Plus, even if they are not properly represented in current GDP measures. In other words, Kerala is wealthier than some limited statistical measures imply. Wealth and good social outcomes are still strongly correlated on average, and this correlation is stronger over longer time horizons. For instance, if Kerala does not grow much in more narrow economic terms, it is unlikely to look so impressive in its social indicators fifty or one hundred years from now. Even today, Kerala manages as well as it does in large part because so many Keralans take jobs in wealthier countries, especially in the Gulf States, and send money back home. And compared to other Indian states, Kerala has an above-average measure of wealth, as well as above-average consumption expenditures, both of which are accounted for in traditional statistics. 14

The truth is that economic growth is the only permanent path out of squalor. Economic growth is how the Western world climbed out of the poverty of the year 1000 A.D. or 5000 B.C. It is how much of East Asia became remarkably prosperous. And it is how our living standards will improve in the future. Just as the present appears remarkable from the vantage point of the past, the future, at least provided growth continues, will offer comparable advances, including, perhaps, greater life expectancies, cures for debilitating diseases, and cognitive enhancements. Billions of people will have much better and longer lives. Many features of modern life might someday seem as backward as we now regard the large number of women in earlier centuries who died in childbirth for lack of proper care.

#### Technological innovation successfully dematerializes growth.

McAfee 19, \*Andrew Paul McAfee, a principal research scientist at MIT, is cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management; (2019, “More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources and What Happens Next”, https://b-ok.cc/book/5327561/8acdbe)

There is no shortage of examples of dematerialization. I chose the ones in this chapter because they illustrate a set of fundamental principles at the intersection of business, economics, innovation, and our impact on our planet. They are:

We do want more all the time, but not more resources. Alfred Marshall was right, but William Jevons was wrong. Our wants and desires keep growing, evidently without end, and therefore so do our economies. But our use of the earth’s resources does not. We do want more beverage options, but we don’t want to keep using more aluminum in drink cans. We want to communicate and compute and listen to music, but we don’t want an arsenal of gadgets; we’re happy with a single smartphone. As our population increases, we want more food, but we don’t have any desire to consume more fertilizer or use more land for crops.

Jevons was correct at the time he wrote that total British demand for coal was increasing even though steam engines were becoming much more efficient. He was right, in other words, that the price elasticity of demand for coal-supplied power was greater than one in the 1860s. But he was wrong to conclude that this would be permanent. Elasticities of demand can change over time for several reasons, the most fundamental of which is technological change. Coal provides a clear example of this. When fracking made natural gas much cheaper, total demand for coal in the United States went down even though its price decreased.

With the help of innovation and new technologies, economic growth in America and other rich countries—growth in all of the wants and needs that we spend money on—has become decoupled from resource consumption. This is a recent development and a profound one.

Materials cost money that companies locked in competition would rather not spend. The root of Jevons’s mistake is simple and boring: resources cost money. He realized this, of course. What he didn’t sufficiently realize was how strong the incentive is for a company in a contested market to reduce its spending on resources (or anything else) and so eke out a bit more profit. After all, a penny saved is a penny earned.

Monopolists can just pass costs on to their customers, but companies with a lot of competitors can’t. So American farmers who battle with each other (and increasingly with tough rivals in other countries) are eager to cut their spending on land, water, and fertilizer. Beer and soda companies want to minimize their aluminum purchases. Producers of magnets and high-tech gear run away from REE as soon as prices start to spike. In the United States, the 1980 Staggers Act removed government subsidies for freight-hauling railroads, forcing them into competition and cost cutting and making them all the more eager to not have expensive railcars sit idle. Again and again, we see that competition spurs dematerialization.

There are multiple paths to dematerialization. As profit-hungry companies seek to use fewer resources, they can go down four main paths. First, they can simply find ways to use less of a given material. This is what happened as beverage companies and the companies that supply them with cans teamed up to use less aluminum. It’s also the story with American farmers, who keep getting bigger harvests while using less land, water, and fertilizer. Magnet makers found ways to use fewer rare earth metals when it looked as if China might cut off their supply.

Second, it often becomes possible to substitute one resource for another. Total US coal consumption started to decrease after 2007 because fracking made natural gas more attractive to electricity generators. If nuclear power becomes more popular in the United States (a topic we’ll take up in chapter 15), we could use both less coal and less gas and generate our electricity from a small amount of material indeed. A kilogram of uranium-235 fuel contains approximately 2–3 million times as much energy as the same mass of coal or oil. According to one estimate, the total amount of energy that humans consume each year could be supplied by just seven thousand tons of uranium fuel.

Third, companies can use fewer molecules overall by making better use of the materials they already own. Improving CNW’s railcar utilization from 5 percent to 10 percent would mean that the company could cut its stock of these thirty-ton behemoths in half. Companies that own expensive physical assets tend to be fanatics about getting as much use as possible out of them, for clear and compelling financial reasons. For example, the world’s commercial airlines have improved their load factors—essentially the percentage of seats occupied on flights—from 56 percent in 1971 to more than 81 percent in 2018.

Finally, some materials get replaced by nothing at all. When a telephone, camcorder, and tape recorder are separate devices, three total microphones are needed. When they all collapse into a smartphone, only one microphone is necessary. That smartphone also uses no audiotapes, videotapes, compact discs, or camera film. The iPhone and its descendants are among the world champions of dematerialization. They use vastly less metal, plastic, glass, and silicon than did the devices they have replaced and don’t need media such as paper, discs, tape, or film.

If we use more renewable energy, we’ll be replacing coal, gas, oil, and uranium with photons from the sun (solar power) and the movement of air (wind power) and water (hydroelectric power) on the earth. All three of these types of power are also among dematerialization’s champions, since they use up essentially no resources once they’re up and running.

I call these four paths to dematerialization slim, swap, optimize, and evaporate. They’re not mutually exclusive. Companies can and do pursue all four at the same time, and all four are going on all the time in ways both obvious and subtle.

Innovation is hard to foresee. Neither the fracking revolution nor the world-changing impact of the iPhone’s introduction were well understood in advance. Both continued to be underestimated even after they occurred. The iPhone was introduced in June of 2007, with no shortage of fanfare from Apple and Steve Jobs. Yet several months later the cover of Forbes was still asking if anyone could catch Nokia.

Innovation is not steady and predictable like the orbit of the Moon or the accumulation of interest on a certificate of deposit. It’s instead inherently jumpy, uneven, and random. It’s also combinatorial, as Erik Brynjolfsson and I discussed in our book The Second Machine Age. Most new technologies and other innovations, we argued, are combinations or recombinations of preexisting elements.

The iPhone was “just” a cellular telephone plus a bunch of sensors plus a touch screen plus an operating system and population of programs, or apps. All these elements had been around for a while before 2007. It took the vision of Steve Jobs to see what they could become when combined. Fracking was the combination of multiple abilities: to “see” where hydrocarbons were to be found in rock formations deep underground; to pump down pressurized liquid to fracture the rock; to pump up the oil and gas once they were released by the fracturing; and so on. Again, none of these was new. Their effective combination was what changed the world’s energy situation.

Erik and I described the set of innovations and technologies available at any time as building blocks that ingenious people could combine and recombine into useful new configurations. These new configurations then serve as more blocks that later innovators can use. Combinatorial innovation is exciting because it’s unpredictable. It’s not easy to foresee when or where powerful new combinations are going to appear, or who’s going to come up with them. But as the number of both building blocks and innovators increases, we should have confidence that more breakthroughs such as fracking and smartphones are ahead. Innovation is highly decentralized and largely uncoordinated, occurring as the result of interactions among complex and interlocking social, technological, and economic systems. So it’s going to keep surprising us.

As the Second Machine Age progresses, dematerialization accelerates. Erik and I coined the phrase Second Machine Age to draw a contrast with the Industrial Era, which as we’ve seen transformed the planet by allowing us to overcome the limitations of muscle power. Our current time of great progress with all things related to computing is allowing us to overcome the limitations of our mental power and is transformative in a different way: it’s allowing us to reverse the Industrial Era’s bad habit of taking more and more from the earth every year.

### 2AC---Cap Good---War

#### Growth increases stability and disincentivizes conflict and expansionism---decline causes war.

Szayna et al 17, Research department director of the Defense and Political Sciences Department and a senior political scientist at the RAND Corporation. He has over 30 years of experience in national security policy and defense analysis. From 1997 to 2011 he served as associate director of the Strategy, Doctrine, and Resources Program in RAND's Army Research Division. His research has focused on aspects of strategic planning for the U.S. armed forces, post-conflict stability and reconstruction operations, and coalition interoperability. He gave testimony for the U.S. House of Representatives and has been a keynote speaker at a number of defense conferences. Szayna received a B.A. in history and philosophy from Villanova University and an M.A. in international relations from Claremont Graduate School. Also Angela O’Mahony, Jennifer Kavanagh, Stephen Watts, Bryan Frederick, Tova C. Norlen, Phoenix Voorhies. (“Conflict Trends and Conflict Drivers: An Empirical Assessment of Historical Conflict Patterns and Future Conflict Projections”. 2017. https://www.rand.org/pubs/research\_reports/RR1063.html)

There are a number of factors that could lead to discontinuous changes in this metric. For example, a global economic downturn could lead to sharp reductions in development aid that could threaten any improvements in governance that had been made with the benefit of that assistance. Alternatively, a major jump in global energy costs could induce widespread fiscal crises similar to those of the 1970s and 1980s, ultimately leading to reduced state capacity. The branch scenario in red projects essentially no improvements in state capacity over the period in question, so larger changes would entail the rapid erosion of the capacity of states that are already relatively capable. Such changes are certainly possible, but they would constitute an example of nonlinear disruptive change. On balance, our projection is that state capacity is likely to continue to improve, which will tend to exert a downward pressure on the likelihood of intrastate conflict. Prevalence of Consolidated Democracies Consolidated democracies are less likely to fight one another and to be involved in internal conflict. While this correlation is clear, the mechanism by which democracies reduce conflict is more contested. The literature on interstate conflict has focused on the greater transparency and consistency of democratic regimes that allow them to credibly commit to peaceful solutions to disputes and the possibility that domestic norms and greater political accountability may make democratic states less likely to pursue violent conflicts.8 There are fewer arguments that the greater ability of consolidated democracies to resolve grievances within the political system leads to less intrastate conflict.9 We note, however, that partial democracies or the process of democratization itself may not be particularly peaceful and may even be associated with an increase in conflict.10 Given the importance of consolidated democracy in the literature on conflict, there is already a great deal of work in the academic literature on measurement of democracy. Several aggregate measures of democracy have been developed that include the competitiveness of elections; the state’s respect for civil, political, and minority rights; and freedoms of the press and religion. The most widely used measure of consolidated democracy, and the one we employ, comes from the Polity project. By coding a wide range of regime characteristics, such as political 8 Arend Lijphart, Democracies: Patterns of Majoritarian and Consensus Government in Twenty-One Countries, New Haven, Conn., and London: Yale University Press, 1984; Peter Liberman, Does Conquest Pay? The Exploitation of Occupied Industrial Societies, Princeton, N.J.: Princeton University Press, 1996; Charles Lipson, Reliable Partners: How Democracies Have Made a Separate Peace, Princeton, N.J.: Princeton University Press, 2003. 9 Håvard Hegre, Tanja Ellingsen, Scott Gates, and Nils Petter Gleditsch, “Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816–1992,” American Political Science Review, Vol. 95, No. 1, March 2001, pp. 33–48; Christian Davenport, State Repression and the Domestic Democratic Peace, New York, N.Y.: Cambridge University Press, 2007. 10 Hegre et al., 2001; Lars-Erik Cederman, Kristian Skrede Gleditsch, and Simon Hug, “Elections and Ethnic Civil War,” Comparative Political Studies, Vol. 46, No. 3, 2012, pp. 387–417. 49 competition and constraints on the executive, an aggregate “Polity score” is produced, ranging from –10 to 10. Values of 6 or higher are typically used to identify the presence of a democracy, with a more conservative measurement of 8 or higher often used to identify consolidated democracies. We use this metric to calculate the percentage of all states that are consolidated democracies, with the historical values denoted by the black line in Figure 3.2. Figure 3.2. Prevalence of Consolidated Democracies SOURCE: Historical data: Monty G. Marshall and Keith Jaggers, Polity IV Data Set [Computer file; version p4v2012], College Park, Md.: Center for International Development and Conflict Management, University of Maryland, 2002; projections calculated by authors. We projected the baseline scenario by fitting a trend line to the historical data and calculating the future values.11 This projection is represented in the figure by the gray line. We calculated the two branch scenarios as one standard deviation above and below the baseline projection; they are shown in the figure by the blue and red lines, respectively. Discontinuous growth in the prevalence of democracies could result from various tippingpoint effects. If a high percentage of the world’s population were governed through democracy, other forms of government may come to be seen as illegitimate, and greater international pressure may be brought to bear to remove them. Within the time frame of our study, a dramatic reversal in the prevalence of consolidated democracies appears to be less likely. The reversion of 11 The trend line was fit using a generalized linear model linked to a binomial logit function. The resulting projections are therefore bounded between 0 and 1 (in this case, 0 and 100 percent). The model used in Figure 3.2 has a Pearson statistic (1/df) of .0037, suggesting a high degree of fit with the data. 50 consolidated democracies to autocracies historically has been extremely rare and is unlikely in the absence of extreme economic decline, the conquest of democracies by more powerful autocracies, or both. Either of these potential paths is likely to lead directly to increases in future conflict levels as well. Degree of Ethnic and Sectarian Polarization The academic literature generally agrees that a high level of ethnic and sectarian polarization is not sufficient by itself to cause conflict either within or between states. However, there is also agreement that in the intrastate context, where group mobilization occurs along ethnic lines, identity can become a significant contributing factor for violence, especially when strengthened by socioeconomic and sociopolitical grievances. Consequently, we identified the degree of ethnic and sectarian polarization as one of the primary factors likely to affect the level of intrastate conflict in the future. Evidence also shows that while ethnicity may not lead to conflict by itself, it may work to prolong conflicts and increase the intensity of violence in those conflicts that are already occurring.12 Such effects will most likely be strengthened if ethnic groups are deliberately disadvantaged by the state or if they are territorially based and have secessionist or separatist demands.13 Scholars tend to agree that ethnic and sectarian polarization, while a strong predictor for increased levels of intrastate conflict, is not a strong driver for conflicts between states. However, if regional and international actors become involved in intrastate conflicts, or if conflicts spread across borders, such polarization could also affect levels of interstate conflict. Such a scenario is especially likely where ethnic kin-groups in neighboring states become involved with secessionist movements.14 Quantifying ethnic and sectarian polarization is inherently difficult. While various measures have been tried, such as linguistic differences (e.g., ethno-linguistic fractionalization) or religious preferences, they are often criticized for not capturing the cleavage that gives rise to political mobilization. For example, different ethnic groups may share the same religion, and one ethnic group may speak multiple languages. It can also be difficult to determine when certain identities in a society are increasing in salience, and when they are becoming less relevant. One prominent 12 Rajat Ganguly and Raymond Taras, Understanding Ethnic Conflict: The International Dimension, Longman Publishers, 2002; Fearon and Laitin, 2003; and Daniel Bar-Tal, “Sociopsychological Foundations of Intractable Conflicts,” American Behavioral Scientist, Vol. 50, No. 11, 2007. 13 Gurr, 1970; Stephen M. Saideman, and William R. Ayres, “Determining the Causes of Irredentism: Logit Analyses of Minorities at Risk Data from the 1980s and 1990s,” Journal of Politics, Vol. 62, No. 4, November 2000, pp. 1126–1144; Monica Duffy Toft, The Geography of Ethnic Violence: Identity, Interests, and the Indivisibility of Territory, Princeton, N.J.: Princeton University Press, 2003. 14 John A. Vasquez, and Brendan Valeriano, “Territory as a Source of Conflict and a Road to Peace,” in Jacob Bercovitch, Viktor Kremenyuk, and I. William Zartman, eds., The Sage Handbook of Conflict Resolution, Los Angeles, Calif.: SAGE, 2009, pp. 193–209. 51 attempt to quantify relevant ethnic identities is the Minorities at Risk data set at the University of Maryland, which identifies minority groups by their “at risk” status—that is, by the extent to which they are disadvantaged in their relationships with other groups in the state in which they reside. However, the Minorities at Risk data identify such “at risk” groups somewhat subjectively, and the project does not claim to be comprehensive. An alternative, objective measure is to look for the degree of formal discrimination against ethnic, religious, or linguistic groups. The creation or removal of official laws providing for formal discrimination can help to identify states where identity-based grievances may become more or less salient. For capturing the degree of ethnic and sectarian polarization, therefore, we looked at the percentage of states with formal discrimination against minorities, where such minority groups make up at least 5 percent of the state’s population. We used the Ethnic Power Relations data set (EPR), which tracks the extent of access to state power for all politically relevant ethnic groups in every country of the world from 1946 to 2013. It includes annual data on more than 733 groups and codes the degree to which their representatives held executive-level state power—from total control of the government to being formally barred from holding political office. While the disadvantage of such a proxy may be that it potentially fails to capture some of the unofficial social discrimination that can lead to group mobilization, the advantage is that it allows for a more objective measure of sectarian tension. The overall levels of ethnic or sectarian polarization in the figure below may therefore be understated, but we can have more confidence in the general trend line than we could with more subjective data sources. We projected the baseline scenario by fitting an exponential trend line to the available historical data and calculating the future values.15 The projection is shown by a gray line in Figure 3.3. We calculated the two branch scenarios as one standard deviation above and below the baseline projection; they are shown by a red and blue line, respectively. 15 The exponential trend line fit to the data has the equation: y = 0.3098e-0.012x. The trend line has a high degree of fit with the data, with an R² of 0.85. 52 Figure 3.3. Percentage of States with Discriminated Minorities SOURCE: Historical data: Andreas Wimmer, Lars-Erik Cederman, and Brian Min, “Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data set,” American Sociological Review, Vol. 74, No. 2, 2009, pp. 316–337; projections calculated by authors. Discontinuous change in this variable may occur as a result of several factors. Historically, ethnic and sectarian factors often have increased in relevance after the breakup of larger states and empires, including the breakup of the Soviet Union in the early 1990s, or the end of colonialism in the 1960s. The breakup of other large, multiethnic states in the future could result in a similar outcome. Extremely high levels of resource stress because of population pressures also could prompt increased ethnically based conflict within states. Ethnic and sectarian polarization and grievances are latent in many societies, and may become politically important in order to mobilize groups to violence under conditions of severe resource or economic privation. Rate of Economic Growth Economic growth affects the prevalence of conflict in several ways. While territorial expansion traditionally has been a major cause of interstate war, states with higher levels of economic development may be less motivated to pursue such expansion because of the lower relative value of land inputs in an industrialized economy. Moreover, their reliance on international capital markets may increase the potential costs of disruptions from serious 53 international crises.16 At the intrastate level, economic growth (if broadly shared) reduces grievances, bolsters the capacity of the state to handle security challenges, and increases the population’s opportunities for licit employment, thus raising the opportunity costs of participating in rebellions or insurgencies.17 Growth benefits that accrue along ethnic or sectarian lines, however, might increase the potential for intrastate conflict, as discussed in the previous section, and sharp declines in the rate of economic growth could be associated with an increased risk of internal conflict as well.18 Therefore, there are at least two different concepts that any operationalization of this factor should attempt to capture: the overall level of economic development and changes in the rate of economic growth. Over the short term, wealthy countries tend to remain wealthy and poor countries tend to remain poor, and their degree of wealth may have a strong effect on their overall likelihood of being involved in conflict. In addition, sharp declines in the rate of growth for a range of states may increase their likelihood of intrastate conflict in particular.

### 2AC---Sustainability

#### Their ev has a few warrants:

#### 1---Deforestation---wrong.

Song et al. ’18 (Xiao-Peng; Department of Geographical Sciences, University of Maryland; Matthew C. Hansen, Stephen V. Stehman, Peter V. Potapov, Alexandra Tyukavina, Eric F. Vermote & John R. Townshend; August 8th; *Global land change from 1982 to 2016*; Nature volume 560, pages 639–643 (2018); MSCOTT)

Land change is a cause and consequence of global environmental change1,2. Changes in land use and land cover considerably alter the Earth’s energy balance and biogeochemical cycles, which contributes to climate change and—in turn—affects land surface properties and the provision of ecosystem services1,2,3,4. However, quantification of global land change is lacking. Here we analyse 35 years’ worth of satellite data and provide a comprehensive record of global land-change dynamics during the period 1982–2016. We show that—contrary to the prevailing view that forest area has declined globally5—tree cover has increased by 2.24 million km2 (+7.1% relative to the 1982 level). This overall net gain is the result of a net loss in the tropics being outweighed by a net gain in the extratropics. Global bare ground cover has decreased by 1.16 million km2 (−3.1%), most notably in agricultural regions in Asia. Of all land changes, 60% are associated with direct human activities and 40% with indirect drivers such as climate change. Land-use change exhibits regional dominance, including tropical deforestation and agricultural expansion, temperate reforestation or afforestation, cropland intensification and urbanization. Consistently across all climate domains, montane systems have gained tree cover and many arid and semi-arid ecosystems have lost vegetation cover. The mapped land changes and the driver attributions reflect a human-dominated Earth system. The dataset we developed may be used to improve the modelling of land-use changes, biogeochemical cycles and vegetation–climate interactions to advance our understanding of global environmental change1,2,3,4,6.

#### 2---Soil---innovation solves

Kassam 16

Amir, Amir Kassam is the moderator of the Global Conservation Agriculture Community of Practice (Global CA-CoP) communication platform hosted by the Food and Agriculture Organization (FAO) of the United Nations, Rome, 6/16/16 (“Reversing agricultural land degradation worldwide”, <http://drylandsystems.cgiar.org/content/reversing-agricultural-land-degradation-worldwide>, Accessed 3/13/19)//DG

No-till conservation agriculture systems are now spreading globally in all continents at the combined annual rate of 10 million hectares, and in 2013 they covered some 160 million hectares of annual rainfed and irrigated cropland, corresponding to about 11% of global annual cropland. Some 50% of land under conservation agriculture is in the developing countries, particularly in Latin America and Asia. More recently, the practice has begun to take hold and spread in Africa and the Near East, as farmers and their communities learn how to overcome constraints. Conservation agriculture is also being applied to perennial crops in orchard systems involving olives, vines and fruit trees; in plantation systems with oil palm, cocoa, tea, coffee, rubber and coconut; and in agroforestry systems.

No-till conservation agriculture is one of the best climate-smart solutions to combat land degradation and desertification. It is also the best practical approach to pursue the goals of sustainable agriculture to maximize productivity with resilience and harness a wide range of ecosystem services to improve rural livelihoods, and food and nutrition security almost everywhere.

What we have learned in recent years is that farmers are willing to take greater control of their futures by experimenting with and adopting radically new and innovative practices such as conservation agriculture in order to build sustainable agricultural livelihoods in the face of climate change and other critical challenges related to food and nutrition security. However, mass transformation to no-till conservation agriculture requires the engagement of the whole society, including the farmers themselves and the public, private and civil society actors.

#### 3---Oceans---they’re fine

McAfee 19, \*Andrew Paul McAfee, a principal research scientist at MIT, is cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management; (2019, “More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources and What Happens Next”, https://b-ok.cc/book/5327561/8acdbe)

The situation with water pollution is more mixed. As we saw in chapter 9, some countries are still dumping huge amounts of plastic and other garbage into their rivers. This trash then flows into the oceans, which are a commons for the whole planet. Here again the divide between developed countries and developing ones is sharp. Poverty pollutes, while affluence cleans up from its prior mistakes via public awareness and responsive government. A clear example of this is the effort by both government and industry in the United States to clean up the country’s lakes, ponds, streams, and rivers after the passage of 1972’s Clean Water Act. Economists David Keiser and Joseph Shapiro brought together 50 million pollution readings from 170,000 sites across the country and concluded that “water pollution has declined dramatically over time and that the Clean Water Act… contributed to this decline.”

After ocean acidification and plastic trash, nitrogen pollution might well be the most serious problem facing the world’s waters. Nitrogen fertilizer that isn’t absorbed by crops can wash into rivers and oceans. There it causes a number of harms including large “dead zones” of oxygen-poor water that can suffocate fish and other marine life. VI As we saw in chapter 2, the Industrial Era saw massive increases in the amount of nitrogen fertilizer used around the world. This means that the amount of nitrogen pollution also increased.

The problem is a serious one, but there are two hopeful signs. First, as shown in chapter 5, the United States (which remains a farming powerhouse) is now post-peak in its total use of nitrogen and other fertilizers even as its agricultural output grows. As the two horsemen of tech progress and capitalism continue to gallop, this will be the case for more and more countries. The second hopeful sign is that responsive government can make a large difference in fertilizer use. Between 2005 and 2015 the Chinese government taught more than 20 million small farmers about efficient use of fertilizer. The results of this intervention were impressive: average yields across all crops increased by about 10 percent, while total application of nitrogen decreased by about 15 percent. These two examples show that neither pollution of water nor anything else is a fixed price that must be paid for human prosperity.

# 1AR

### 2AC---AT: Galetovic

#### Galetovic ignores mitigating factors and contradicts supported theory.

Siebrasse 19, \*Norman Siebrasse is a Professor of Law at the University of New Brunswick. His research focuses on patent law, particularly pharmaceutical patent law, patent remedies, and the intersection of intellectual property law and commercial law; (July 2019, “Holdup, Holdout, and Royalty Stacking: A Review of the Literature”, https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader)

The most important recent study is that of Galetovic et al. ([2015](https://www.cambridge.org/core/product/identifier/9781108594981%23EMT-rl-1/type/BOOK_PART/core-reader#BIBe-r-139)), which examines SEPs in particular. They examine two empirical implications of the SEP holdup hypothesis. First, if holdup in the standards context is slowing the rate of innovation, then products that are highly reliant upon SEPs will experience slower rates of decrease in quality-adjusted prices than similar products that do not. Second, they consider the quasi-natural experiment resulting from the 2006 Supreme Court of the United States decision in eBay Inc. v. MercExchange, LLC,[233](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1395) which made it more difficult for SEP holders to obtain injunctions against infringers than for the holders of non-SEP patents. They find no evidence of SEP holdup on either test. With respect to the comparison between industries, they find:

[P]roducts that are SEP-reliant have experienced faster price declines than any other good in the Consumer Price Index (CPI) over the past 16 years … The prices of SEP-reliant products have fallen at rates that are not only fast relative to a classic holdup industry, they are fast relative to other patent-intensive products that benefit from Moore’s Law but are not SEP-reliant.[234](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1396)

On the second test, they use a difference in differences specification to test whether quality-adjusted prices fall faster in SEP-reliant industries after eBay, while controlling for industry and year effects. Their analysis does not allow them to reject the null hypothesis that eBay did not differentially affect SEP-reliant industries.

These results imply that holdup is not systemically impeding innovation in SEP-reliant industries. There are two caveats to these results that are potentially relevant to remedial issues. First, they do not claim that individual firms never attempt to engage in behavior that can be characterized as holdup.[235](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1397) Courts may wish to respond to individual instances of holdup, even if it is not a systemic problem.

Secondly, they do not take issue with the view that the theoretical conditions for holdup exist in SEP-reliant industries, which suggests that it is some mitigating mechanism that explains their results. One possibility is that systemic holdup has been avoided as a result of structural factors such as the prevalence of ex ante bargaining or repeat play mechanisms. On the other hand, we have seen that it is sometimes suggested that it is legal constraints, such as the FRAND commitment, that mitigate the effect of holdup. That hypothesis is broadly consistent with the result that the prices of SEP-reliant products have fallen at rates that are fast relative to other patent-intensive products that are not SEP-reliant. It is more difficult to reconcile with the result that eBay has had no observable effect on holdup, but it is possible that eBay was effectively anticipated in the context of SEPs. That is, it may be that even before eBay, implementers understood that the FRAND commitment meant what it said and that they would be able to use standards subject to the FRAND commitment without fear of being held up by injunctions or excessive royalties.

From a remedial perspective, it matters what the particular mechanism might be. If structural factors are at play, this would suggest that the courts should be relatively reluctant to withhold injunctive relief to a successful patentee. On the other hand, if it is the FRAND commitment that is avoiding holdup in SEP-reliant industries, the results of Galetovic et al. ([2015](https://www.cambridge.org/core/product/identifier/9781108594981%23EMT-rl-1/type/BOOK_PART/core-reader#BIBe-r-139)) show that the FRAND system is working, but it might suggest that the courts should continue to apply the FRAND principles relatively aggressively in order to ensure that the system keeps working. This might also suggest that the courts should apply a similar reluctance to grant injunctions even in respect of patents that are not FRAND committed, if the potential for holdup is otherwise present. The other side of that coin is that it is also possible that the FRAND commitment has been applied too aggressively, resulting in an inadequate incentive to invent. There appear to be no systemic studies addressing that possibility, though it is likely too soon for incentive effects to have manifested themselves.

3 Royalty Stacking

Galetovic & Gupta ([2017](https://www.cambridge.org/core/product/identifier/9781108594981%23EMT-rl-1/type/BOOK_PART/core-reader#BIBe-r-138)) empirically investigate royalty stacking, and the Cournot complements problem in particular, in the world mobile wireless industry, focusing on third generation (3G) and fourth generation (4G) wireless cellular standards defined by the third generation partnership project (3GPP). Their paper draws on the fact that the number of SEP holders and the number of SEPs have grown dramatically over the life of this technology: “During the last 20 years the number of SEP holders for 3G and 4G standards grew from 2 in 1994 to 130 in 2013 and the number of SEPs rose from fewer than 150 in 1994 to more than 150,000 in 2013.”[236](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1398) Cournot complements theory implies that with the increase in the number of SEP holders, royalty stacking would have gotten worse. In particular, they note that the price of phones should increase or (if quality increases demand) at least stagnate; that margins of SEP holders and downstream manufacturers will fall; and that the number of device manufacturers will decrease and industry concentration will rise. They find none of these effects. On price, for example, they find that “between 1994 and 2013 and controlling for technological generation, the real average selling price of a device fell between −11.4% to −24.8% per year. Moreover, the introductory average selling price of successive generations fell.”[237](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1399) They also find no trend in margins, and that industry concentration fell.[238](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1400) There are many other variables that might also affect the price of phones. Most obviously, the quality of phones has increased, raising willingness to pay, and manufacturing costs have probably decreased, and other factors such as incomes, substitute prices, and downstream intensity of price competition have also changed.[239](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1401) However, in their model, such changes cannot explain the price decrease and other observed effects, because when stacking is severe, the stacked royalty will increase to extract any benefit from cost reductions or increased demand.[240](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1402)

Galetovic & Gupta portray these results as indicating that royalty stacking has not been a systemic problem in the wireless industry, despite the large number of SEP owners. This raises a puzzle: How is this result to be reconciled with Cournot complements theory? The general Cournot complements model developed by Galetovic & Gupta ([2017](https://www.cambridge.org/core/product/identifier/9781108594981%23EMT-rl-1/type/BOOK_PART/core-reader#BIBe-r-138)) shows that “even with a modest number of SEP holders, the effect of royalty stacking on output is severe and eventually, output collapses.”[241](https://www.cambridge.org/core/books/patent-remedies-and-complex-products/holdup-holdout-and-royalty-stacking-a-review-of-the-literature/98A2C16F10DB52E2070E2DA92B197DDC/core-reader#FN-fn-1403) As they observe, the modern wireless industry has a large number of complementary inputs in the form of SEPs, held by independent owners. This implies that the market should “nearly disappear” and yet, as they also observe, the modern wireless industry is very healthy.

Galetovic & Gupta do not attempt to resolve this puzzle. As discussed above, the Cournot complements problem might be mitigated or solved by wide-scale price coordination, perhaps through patent pools, or possibly by specific pricing strategies or practices, but it is not obvious that such factors can explain the apparent lack of royalty stacking in the wireless industry. If Galetovic & Gupta’s basic results are replicated, it is of pressing interest to explain why the wireless industry is so robust, as this might shed entirely new light on the Cournot complements problem. While Galetovic & Gupta present their work as challenging the claim that royalty stacking is a problem in complex product industries such as cellular phones, their work can also be seen as a challenge to Cournot complements theory itself.

1. 9*. See* Lemley, *supra* note 4, at 1954. [↑](#footnote-ref-1)
2. *. See* Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, 29 (1991). [↑](#footnote-ref-2)
3. . For arguments that innovation is the most important economic efficiency and should count as the most powerful pro-competitive justification, see Michael A. Carrier, *Resolving the Patent-Antitrust Paradox Through Tripartite Innovation*, 55 VAND. L. REV. (forthcoming 2003); Michael A. Carrier, *Unraveling the Patent-Antitrust Paradox*, 150 U. PA. L. REV. 761, 80015 (2002). [↑](#footnote-ref-3)
4. . The presence of SSOs in industries with the greatest potential for bottlenecks warrants antitrust deference in a way that deference on account of the balancing of “competing interests” the authors claim is undertaken by SSOs does not. *See* Teece & Sherry, *supra* note 1, at 1985. [↑](#footnote-ref-4)
5. . This example assumes an open SSO. For the dangers of closed SSOs excluding competitors, see *supra* notes 76-77 and accompanying text. [↑](#footnote-ref-5)