# 1NC

### 1NC---Business Confidence---LIO

#### Growth thriving now---new antitrust crushes it---decks predictability and spills over.

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It has long been vogue among liberal advocates to champion expansion of government control over firms, their decisions, and internal workings. Perhaps no better present example can be found than in the area of antitrust, where the policy landscape looks eerily similar to the progressive view articulated 60 years ago, littered with a hodgepodge of proposals to “break up” large firms, prohibit all mergers and acquisitions, assign burdens of proof to the accused, and control the design of products. Today’s progressives offer much of the same medicine for what allegedly ails the modern economy. Senator Warren has proposed, for example, to “break up big tech” platforms such as Amazon, Apple, Facebook, and Google, and to make technology companies criminally liable for misinformation presented on their platforms.[ii] While the large and successful American tech firms—the envy of the global economy—make a convenient target for these proposals, do not be fooled. This wolf comes as a wolf. The modern progressive antitrust agenda is part of a broader, more radical program—self-described as Neo-Brandeisian Antitrust—to turn antitrust law upside down so that it may be weaponized to shape and plan all sectors of the economy.

These proposals, while unfortunate and misguided, draw heavily upon standard liberal orthodoxy that has tended to be largely suspect of markets and the agency of individuals. One can hardly be surprised to see a staunch progressive like Senator Warren or Bernie Sanders advocate greater government control over private life. Perhaps one even grows to expect it.

What is more surprising, however, is the company Senator Warren and the Neo-Brandeisian Antitrust movement have attracted with the siren call of using the antitrust laws to centrally plan the tech sector (among others things), and to achieve greater government control of the interactions between individuals and the technology we use in our daily lives. Stalwart conservatives like Senator Hawley, for example, among others, have offered policy proposals to “deal” with “Big Tech” that eerily mimic those of Senator Warren and the command and control left. Senator Hawley has proposed legislation that would rewrite Section 230 of the Communications Decency Act and usher in a quasi-Conservative Fairness Doctrine for the internet.[iii] Indeed, Hawley’s proposal would place the Federal Trade Commission in the Big Brother position of determining when a social media platform’s moderation decision was “designed to” or “motivated by an intent to” negatively impact a political party. Attorney General Barr has offered a similar refrain, announcing that antitrust is an appropriate tool to police political bias.[iv] And President Trump recently signed an executive order that directs the Federal Trade Commission to explore using its consumer protection authority to sue social media platforms for content moderation decisions.[v]

Without question, the emotional appeal undergirding these actions is understandable. Conservative voices and opinions too often face a stacked deck when dealing with technology companies and social media, in particular. And this bias against conservative voices has taken on new life in the Trump era. But the hallmark of conservative values has been to rightfully eschew government control over economic life and to value principle over expediency. What is at stake, however, with the current proposals to upend modern antitrust to address tech markets is more important than whatever fleeting satisfaction is gained from exacting policy revenge on firms perceived to squelch conservative voices and ideas. At stake are conservative commitments to the rule of law and the role of the judiciary—newly stocked with immense talent by the Trump administration—in preventing government expansion and overreach. And if we resign ourselves to transient political wins, and debase the belief that entrepreneurs rather than bureaucrats should shape technology markets, we risk not only undermining these great causes conservatives have championed for decades but also the enormous economic gains to Americans that arise in our highly competitive tech markets.

Readers less familiar with antitrust law may not understand its critical role in the conservative legal movement. Modern antitrust law—and its consumer welfare standard—is a complex product of powerful ideas, extant economic evidence, and jurists like Bork, Thomas, Scalia, Easterbrook, and Doug Ginsburg taking on the wobbly intellectual foundations of 1960s competition law. That their efforts were so successful in persuading their liberal counterparts on the Supreme Court and lesser federal courts to join in the dismantling of the stale and obsolete antitrust that was then the law of the land is powerful evidence of the force of their ideas. It is difficult to find an area of law where the conservative legal movement enjoyed as much success as quickly and with such resounding results.

No doubt it helped that yesteryear’s antitrust was intellectually bankrupt and an insult to the rule of law. It pursued an unfortunate amalgamation of contradictory doctrines, including undefined notions of populism, protection of individual industries, and reducing firm size, that could be used to justify nearly any result. For instance, antitrust law allowed the market-leading frozen pie manufacturer in Utah to successfully sue its three national-brand competitors for eroding its high market share through a series of price cuts—thereby preventing precisely the type of competition the law was intended to protect. Antitrust law was so unprincipled and incoherent at the time that it led Justice Potter Stewart to observe while reviewing a government suit to block a merger between two grocery stores with a combined market share of 7.5% that, “The sole consistency that I can find is that, in litigation under [the merger laws], the Government always wins.”[vi]

The conservative legal movement, powered by the intersection of economic analysis and law, brought the rule of law to the wild and untamed progressive antitrust vision of the 1960s. Grounding antitrust law in a disciplined and tractable framework not only promotes the rule of law while preventing arbitrary and capricious enforcement, it also creates a stable and predictable environment for private actors and firms to invest and innovate. Of course, no doctrine is perfect and today’s antitrust is not without its own flaws. But it is tethered to robust economic evidence and common-law developments that promote competitive outcomes and, like the common law, has built-in mechanisms to improve and evolve in response to empirical evidence. But the coherent and principled makeup of antitrust should not and cannot be taken for granted.

Proposals today that are attracting conservatives and liberals alike aim to unwind these gains in exchange for granting those who happen to have power in the government a dominant hand in controlling tech firms on the fleeting hope that the power will be deployed for the greater social good. We have experience with this approach to antitrust in the United States. It is what we used to do. And we know better. Shifting power from judges to regulators, and then allowing those regulators to pick winners and losers to achieve political and social goals, is a recipe for abandoning conservative commitment to the rule of law while simultaneously sacrificing economic growth and innovation. The price is too high, with little or nothing to offer those who value individual liberty, the rule of law, and economic growth. While progressive ideology is contiguous with increasing government control over economic and social interactions in technology markets for its own sake, conservative principles are not. The proposed bargain is also remarkably short-sighted. It should go without saying that empowering partisan regulators to enforce a Fairness Doctrine for conservatives is not likely to work out so well when the other side is in control.

Conservatives traditionally have been wary of proposals by liberals and other big government proponents seeking to substitute the judgment of regulators and bureaucrats for those of entrepreneurs and innovators. And rightfully so. Such proposals, even when well intentioned, risk making Americans worse off. Progressives and populists now seek to commandeer antitrust to usher in a new era of central planning in order to achieve social policy objectives that they could not accomplish otherwise. But at what cost? The risks are not trivial. Using antitrust to redesign tech companies and their products will undermine the competitive dynamics that have brought Americans countless modern benefits, including smartphones, fast and easy online shopping, on-demand ride hailing, easy-to-access streaming media, and a bevy of free services including email, maps, and video conferencing. It also will threaten the incredible economic growth and job creation that these companies have brought to America’s shores. And while politicians surely will make promises akin to, “if you like the digital platform you have, you’ll get to keep it,” it is all too clear that when you expand government discretion and limit judicial oversight, those in positions of power will increasingly impose their preferences on the broader society. Ask yourself, do you really want the government designing the iPhone?

The reality is that the U.S. digital economy is highly competitive and serves Americans well. Fueled by investment, innovation, and entrepreneurship, the digital economy has contributed substantially to America’s economic growth. According to the Bureau of Economic Analysis, the digital economy accounted for 6.9 percent of gross domestic product in 2017, growing at an annual rate of 9.9 percent since 1998 as compared to 2.3 percent for the economy overall.[vii] That economic growth has been driven by some of the world’s most successful tech companies, such as Amazon, Apple, Facebook, Intel, Google, and Microsoft, each of which calls the United States home. These firms are investing ever-increasing amounts on research and development to innovate new products and stay competitive. In fact, the United States leads the world in research and development spending, and tech companies lead in the United States—representing the nation’s top five spenders with investments totaling more than $75 billion in 2018.[viii] Tech companies rank second (behind the telecom sector) in U.S. capital expenditures, with Alphabet (Google’s parent company), Amazon, Apple, Facebook, Intel, and Microsoft together spending more than $45 billion in 2017.[ix] And these investment figures are only expected to continue to grow. These are hardly the actions of monopolists resting on their laurels, secure in belief that they are untouchable by competition.

And there is more good news. Tech has only touched a portion of the U.S. economy to date, meaning that there still are opportunities for tech companies to foster economic growth by transforming stagnant industries such as housing, transportation, manufacturing, and health care for the better. And where are the next generation of innovators and tech entrepreneurs calling home? The United States. Recognizing an economy that is dynamic and rewards creativity, venture capital investing has soared to record levels in the United States—surpassing $140 billion in 2018—providing startups with the capital necessary to innovate, compete, and grow.[x] Today the United States is home to half of all startups valued at more than $1 billion—so-called “unicorns”—outpacing every other country in the world by a wide margin.[xi]

Now, some conservatives chafe at recitations of facts and claim that technology companies exclusively benefit only the privileged. But this economic growth and investment have led to substantial benefits to ordinary American consumers and workers. You need only look to the numerous free services that tech has brought to consumers. Americans place significant value on these free services. One peer-reviewed study published by the National Academy of Sciences found that consumers would need to receive a yearly payment of $3,600 to give up free internet maps, $8,400 to give up free email, and $17,500 to give up free search engines.[xii]

Tech firms also have spurred change in long stagnant industries by developing new products that spark competition across quality, price, and other dimensions. Take for instance ride-sharing apps. Local cab companies long had a stranglehold on taxi services and saw little need to innovate or evolve. Ride-sharing apps like US-based Uber and Lyft disrupted the livery service industry by offering lower-cost and more convenient services. Cab companies have been forced to respond by offering easier payment methods and other innovative services that enhance the consumer experience. Proponents of using antitrust to restructure or even break up tech companies are unable to explain how their sweeping plans, however carefully scripted, would not undo the business models that made these services and their associated benefits possible. The burden should be on those seeking to use antitrust to remake the digital economy to demonstrate that the risk is justified. It is hard to believe how it could be.

The digital economy also has been an important source of job creation. According to one estimate, nearly 12 million people held tech jobs in the United States in 2018.[xiii] Today the largest U.S. tech companies have replaced the major American employers of the past. In just under two decades, Amazon, Apple, Facebook, Alphabet, and Microsoft have employed more than one million workers.[xiv] In 2016, Amazon became the fastest company to employ 300,000 Americans—surpassing Walmart and General Motors.[xv] Moreover, while the share of economic output going to workers has been declining steadily overall for many years both in the U.S. and globally, in the tech and telecom sectors the labor share has been steady and even has increased, suggesting improved worker welfare.[xvi]

But that is only part of the story. These major tech firms not only directly employ Americans, but through their investment and innovation, they have created entirely new markets that also have created millions of jobs. Take for instance the app economy—a more than $1 trillion global industry—that has created millions of U.S. jobs since Apple’s iPhone launched in 2007. According to one estimate, the U.S. had more than two million app-related jobs as of April 2019.[[xvii]](https://nationalaffairs.com/time-choosing-conservative-case-against-weaponizing-antitrust#_edn17) America’s large tech companies also benefit small businesses in yet another way: by connecting them to new markets that they could not access before. Today small businesses are able to take advantage of the major tech firms’ size and scale to grow domestically and compete globally with affordable and secure services.  
  
None of this is lost on Americans. While politicians in Washington have used the tech industry as a punching bag, most Americans would prefer that legislators focus on other industries, including most prominently health care, an industry in which competition suffers despite (or because of) significant government involvement.[[xviii]](https://nationalaffairs.com/time-choosing-conservative-case-against-weaponizing-antitrust#_edn18) In fact, a mere 17 percent of registered voters think that Congress should make regulating tech a top priority, placing it last among issues surveyed.[[xix]](https://nationalaffairs.com/time-choosing-conservative-case-against-weaponizing-antitrust#_edn19) That is likely in part because Americans generally trust tech firms and acknowledge the benefits they have brought to U.S. workers and consumers. One study found that Amazon, Google, and Netflix ranked as the most loved brands in the United States.[[xx]](https://nationalaffairs.com/time-choosing-conservative-case-against-weaponizing-antitrust#_edn20) Another study found that nearly 40 percent of Americans trusted Amazon and Google, which is striking given that only a mere 7 percent of Americans said they trusted the government.[[xxi]](https://nationalaffairs.com/time-choosing-conservative-case-against-weaponizing-antitrust#_edn21) It is no wonder that a majority of Americans oppose breaking up the largest tech companies: the result would be putting faith in the unlikely proposition that the government can do better.  
  
None of this means that the tech sector should be immune from antitrust scrutiny, that there are not serious economic issues facing American businesses and workers, or that certain tech platforms have shown an unmistakable bias against conservative viewpoints. Where anticompetitive conduct exists, it can and should be challenged under the existing antitrust laws and legal doctrines, which are more than capable of protecting competition in the digital economy. And the antitrust agencies are right to be vigilant against potential anticompetitive behavior by the major U.S. tech companies given their significant presence across key parts of the US economy.

But conservatives should be skeptical of attempts by politicians and bureaucrats to reorder economies simply to appease current animosity against tech firms and put at risk the substantial benefits they have brought to American consumers and workers. And that is precisely what recent radical proposals would do. These proposals include abandoning the consumer welfare standard that has helped make antitrust a coherent and principled body of law. Liberals instead seek to untether antitrust from the rule of law and return it to its Stone Age by reintroducing vague new “public interest” tests with multiple conflicting goals or by reestablishing arbitrary and obsolete market share thresholds—either of which would serve only to increase government discretion. Others have called to overturn unanimous and supermajority judicial precedent that are the foundations of the modern economic approach to antitrust. Still others seek to abandon the principle that it is the government and not business firms that bears the burden of proof of demonstrating the legality of free enterprise. These proposals require businesses to affirmatively prove to regulatory bodies that commercial conduct is not only not harmful but also that it is beneficial—beneficial to whom exactly is still unclear. And, of course, there have been calls to ban nearly all mergers, even those like Amazon’s acquisition of Whole Foods, which did not consolidate two rival companies and has brought customers lower prices and better services. These efforts inevitably will only be the starting point; and with no limiting principle will increase the government's authority to substitute its own judgement for those of entrepreneurs.

Conservatives long have believed in competition, markets, and the rule of law. The late Justice Scalia famously noted that antitrust’s signature statute, the Sherman Act, is “indeed the ‘Magna Carta of free enterprise’ … but it does not give judges carte blanche to insist that a monopolist alter its way of doing business whenever some other approach might yield greater competition.” The force of Justice Scalia’s admonition that the antitrust laws are not an appropriate vehicle for tinkering with the inner workings of private firms is even stronger when the tinkering is not even in furtherance of greater competition, but for political ends. Those core principles should not hastily be sacrificed now to achieve transient political satisfaction against America’s largest tech companies.

The tech sector is a centerpiece of the modern U.S. economy. America’s tech firms have innovated countless new products, created millions of U.S. jobs, and now are simultaneously envied and attacked by our counterparts abroad. As Ronald Reagan observed in 1964, the government rarely does anything as well or as economically as the private sector. And when the government does seek to control the economy it invariably does so through force or coercion of the people. An invitation to allow politicians and bureaucrats to use antitrust law to break up tech companies, to redesign digital products, or to moderate content for the “greater good” will end like most attempts at introducing just a little bit of liberal orthodoxy: the government’s discretion will grow and the people’s ability to check it will fade overtime until it is a figment of its former self. It is the camel’s nose under the tent. Now is the time for conservatives to choose whether they have a newfound faith in central planning or if they will recommit to principles of limited government and free markets.

#### Unpredictable shifts ruin business confidence and overall growth.

Sarah Chaney Cambon 21, Reporter on The Wall Street Journal's Economics Team, BA in Business Journalism from the University of North Carolina-Chapel Hill, “Capital-Spending Surge Further Lifts Economic Recovery”, Wall Street Journal, 6/27/2021, https://www.wsj.com/articles/capital-spending-surge-further-lifts-economic-recovery-11624798800

Business investment is emerging as a powerful source of U.S. economic growth that will likely help sustain the recovery.

Companies are ramping up orders for computers, machinery and software as they grow more confident in the outlook.

Nonresidential fixed investment, a proxy for business spending, rose at a seasonally adjusted annual rate of 11.7% in the first quarter, led by growth in software and tech-equipment spending, according to the Commerce Department. Business investment also logged double-digit gains in the third and fourth quarters last year after falling during pandemic-related shutdowns. It is now higher than its pre-pandemic peak.

Orders for nondefense capital goods excluding aircraft, another measure for business investment, are near the highest levels for records tracing back to the 1990s, separate Commerce Department figures show.

“Business investment has really been an important engine powering the U.S. economic recovery,” said Robert Rosener, senior U.S. economist at Morgan Stanley. “In our outlook for the economy, it’s certainly one of the bright spots.”

Consumer spending, which accounts for about two-thirds of economic output, is driving the early stages of the recovery. Americans, flush with savings and government stimulus checks, are spending more on goods and services, which they shunned for much of the pandemic.

Robust capital investment will be key to ensuring that the recovery maintains strength after the spending boost from fiscal stimulus and business reopenings eventually fades, according to some economists.

Rising business investment helps fuel economic output. It also lifts worker productivity, or output per hour. That metric grew at a sluggish pace throughout the last economic expansion but is now showing signs of resurgence.

The recovery in business investment is shaping up to be much stronger than in the years following the 2007-09 recession. “The events especially in late ’08, early ’09 put a lot of businesses really close to the edge,” said Phil Suttle, founder of Suttle Economics. “I think a lot of them said, ‘We’ve just got to be really cautious for a long while.’”

Businesses appear to be less risk-averse now, he said.

After the financial crisis, businesses grew by adding workers, rather than investing in capital. Hiring was more attractive than capital spending because labor was abundant and relatively cheap. Now the supply of workers is tight. Companies are raising pay to lure employees. As a result, many firms have more incentive to grow by investing in capital.

Economists at Morgan Stanley predict that U.S. capital spending will rise to 116% of prerecession levels after three years. By comparison, investment took 10 years to reach those levels once the 2007-09 recession hit.

Company executives are increasingly confident in the economy’s trajectory. The Business Roundtable’s economic-outlook index—a composite of large companies’ plans for hiring and spending, as well as sales projections—increased by nine points in the second quarter to 116, just below 2018’s record high, according to a survey conducted between May 25 and June 9. In the second quarter, the share of companies planning to boost capital investment increased to 59% from 57% in the first.

“We’re seeing really strong reopening demand, and a lot of times capital investment follows that,” said Joe Song, senior U.S. economist at BofA Securities.

Mr. Song added that less uncertainty regarding trade tensions between the U.S. and China should further underpin business confidence and investment. “At the very least, businesses will understand the strategy that the Biden administration is trying to follow and will be able to plan around that,” he said.

#### Growth solves numerous existential threats.

Zoë **Baird 20**, A.B. Phi Beta Kappa and J.D. from the University of California, Berkeley, Member of the Aspen Strategy Group, CEO and President of the Markle Foundation, Former Trustee at the Council on Foreign Relations and Partner in the law firm of O’Melveny & Myers, “Equitable Economic Recovery Is a National Security Imperative”, in Domestic and International (Dis)Order: A Strategic Response, Ed. Bitounis and King, October 2020, p. 89-90

Broadly shared economic prosperity is a bedrock of America’s economic and political strength—both domestically and in the international arena. A strong and equitable recovery from the economic crisis created by COVID-19 would be a powerful testament to the resilience of the American system and its ability to create prosperity at a time of seismic change and persistent global crisis. Such a recovery could attack the profound economic inequities that have developed over the past several decades. Without bold action to help all workers access good jobs as the economy returns, the United States risks undermining the legitimacy of its institutions and its international standing. The outcome will be a key determinant of America’s national security for years to come.

An equitable recovery requires a national commitment to help all workers obtain good jobs—particularly the two-thirds of adults without a bachelor’s degree and people of color who have been most affected by the crisis and were denied opportunity before it. As the nation engages in a historic debate about how to accelerate economic recovery, ambitious public investment is necessary to put Americans back to work with dignity and opportunity. We need an intentional effort to make sure that the jobs that come back are good jobs with decent wages, benefits, and mobility and to empower workers to access these opportunities in a profoundly changed labor market.

To achieve these goals, American policy makers need to establish job growth strategies that address urgent public needs through major programs in green energy, infrastructure, and health. Alongside these job growth strategies, we need to recognize and develop the talents of workers by creating an adult learning system that meets workers’ needs and develops skills for the digital economy. The national security community must lend its support to this cause. And as it does so, it can bring home the lessons from the advances made in these areas in other countries, particularly our European allies, and consider this a realm of international cooperation and international engagement.

Shared Economic Prosperity Is a National Security Asset

A strong economy is essential to America’s security and diplomatic strategy. Economic strength increases our influence on the global stage, expands markets, and funds a strong and agile military and national defense. Yet it is not enough for America’s economy to be strong for some—prosperity must be broadly shared. Widespread belief in the ability of the American economic system to create economic security and mobility for all—the American Dream— creates credibility and legitimacy for America’s values, governance, and alliances around the world.

After World War II, the United States grew the middle class to historic size and strength. This achievement made America the model of the free world—setting the stage for decades of American political and economic leadership. Domestically, broad participation in the economy is core to the legitimacy of our democracy and the strength of our political institutions. A belief that the economic system works for millions is an important part of creating trust in a democratic government’s ability to meet the needs of the people.

The COVID-19 Crisis Puts Millions of American Workers at Risk

For the last several decades, the American Dream has been on the wane. Opportunity has been increasingly concentrated in the hands of a small share of workers able to access the knowledge economy. Too many Americans, particularly those without four-year degrees, experienced stagnant wages, less stability, and fewer opportunities for advancement.

Since COVID-19 hit, millions have lost their jobs or income and are struggling to meet their basic needs—including food, housing, and medical care.1 The crisis has impacted sectors like hospitality, leisure, and retail, which employ a large share of America’s most economically vulnerable workers, resulting in alarming disparities in unemployment rates along education and racial lines. In August, the unemployment rate for those with a high school degree or less was more than double the rate for those with a bachelor’s degree.2 Black and Hispanic Americans are experiencing disproportionately high unemployment, with the gulf widening as the crisis continues.3

The experience of the Great Recession shows that without intentional effort to drive an inclusive recovery, inequality may get worse: while workers with a high school education or less experienced the majority of job losses, nearly all new jobs went to workers with postsecondary education. Inequalities across racial lines also increased as workers of color worked in the hardest-hit sectors and were slower to recover earnings and income than White workers.4

The Case for an Inclusive Recovery

A recovery that promotes broad economic participation, renewed opportunity, and equity will strengthen American moral and political authority around the world. It will send a strong message about the strength and resilience of democratic government and the American people’s ability to adapt to a changing global economic landscape. An inclusive recovery will reaffirm American leadership as core to the success of our most critical international alliances, which are rooted in the notion of shared destiny and interdependence. For example, NATO, which has been a cornerstone of U.S. foreign policy and a force of global stability for decades, has suffered from American disengagement in recent years. A strong American recovery—coupled with a renewed openness to international collaboration—is core to NATO’s ability to solve shared geopolitical and security challenges. A renewed partnership with our European allies from a position of economic strength will enable us to address global crises such as climate change, global pandemics, and refugees. Together, the United States and Europe can pursue a commitment to investing in workers for shared economic competitiveness, innovation, and long-term prosperity.

The U.S. has unique advantages that give it the tools to emerge from the crisis with tremendous economic strength— including an entrepreneurial spirit and the technological and scientific infrastructure to lead global efforts in developing industries like green energy and biosciences that will shape the international economy for decades to come.

### 1NC---Innovation CP

#### The United States federal government should

* create its own investment vehicles, including government-sponsored equity investment and venture capital to promote innovative technologies.
* create a “net assessment” process for evaluating investment that aligns government investments with national priorities
* substantially increase research in development in innovative technologies and scientific research
* scale the people pipeline into science and innovation careers
* increase commercialization of developed technologies by creating sandboxes to facilitate collaboration between the academy, industry, and government
* build national datasets (with privacy protections) for research purchases

Set 2

* develop risk mitigation measures, including grid and reactor resilience, moderation of cyber-attack response, and promotion of internet openness.

Set 3

* adopt reforms to patent law limiting patent holdup by SSO organizations as per the Lemley evidence;
* eliminate antitrust prohibitions on standard essential patent holders that engage in anticompetitive licensing practices

#### CP solves meaningful innovation better than the private sector alone---having small firms doesn’t matter if they have no capital.

Darby and Sewall 21 ([Christopher Darby, CEO of IQT, a not-for-profit investment firm working on behalf of the U.S. national security community, and Sarah Sewall](https://www.foreignaffairs.com/articles/united-states/2021-02-10/technology-innovation-wars#author-info), Executive Vice President for Policy at IQT. Sewall taught at the Harvard Kennedy School of Government, where she served as Director of the Carr Center for Human Rights Policy and directed the Program on National Security and Human Rights. Ph.D at Oxford University. From 2014 to 2017, she was U.S. Undersecretary of State for Civilian Security, Democracy, and Human Rights. March/April 2021, "The Innovation Wars," Foreign Affairs, https://www.foreignaffairs.com/articles/united-states/2021-02-10/technology-innovation-wars)

Since the early days of the Cold War, the United States has led the world in technology. Over the course of the so-called American century, the country conquered space, spearheaded the Internet, and brought the world the iPhone. In recent years, however, China has undertaken an impressive effort to claim the mantle of technological leadership, investing hundreds of billions of dollars in robotics, artificial intelligence, microelectronics, green energy, and much more. Washington has tended to view Beijing’s massive technology investments primarily in military terms, but defense capabilities are merely one aspect of great-power competition today—little more than table stakes. Beijing is playing a more sophisticated game, using technological innovation as a way of advancing its goals without having to resort to war. Chinese companies are selling 5G wireless infrastructure around the world, harnessing synthetic biology to bolster food supplies, and racing to build smaller and faster microchips, all in a bid to grow China’s power.

In the face of China’s technological drive, U.S. policymakers have called for greater government action to protect the United States’ lead. Much of the conventional wisdom is sensible: boost R & D spending, ease visa restrictions and develop more domestic talent, and build new partnerships with industry at home and with friends and allies abroad. But the real problem for the United States is much deeper: a flawed understanding of which technologies matter and of how to foster their development. As national security assumes new dimensions and great-power competition moves into different domains, the government’s thinking and policies have not kept pace. Nor is the private sector on its own likely to meet every technological need that bears on the country’s security.

In such an environment, Washington needs to broaden its horizons and support a wider range of technologies. It needs to back not only those technologies that have obvious military applications, such as hypersonic flight, quantum computing, and artificial intelligence, but also those traditionally thought of as civilian in nature, such as microelectronics and biotechnology. Washington also needs to help vital nonmilitary technologies make the transition to commercial success, stepping in with financing where the private sector will not.

AMERICA’S INNOVATION CHALLENGE

In the early decades of the Cold War, the United States spent billions of dollars dramatically expanding its scientific infrastructure. The Atomic Energy Commission, formed in 1946, assumed responsibility for the wartime labs that had pioneered nuclear weapons, such as the [Oak Ridge National Laboratory](https://www.nps.gov/mapr/oakridge.htm), the headquarters of the Manhattan Project, and went on to fund academic research centers, such as the Lawrence Livermore National Laboratory. The Department of Defense, founded in 1947, was given its own massive research budget, as was the National Science Foundation, established in 1950. After the Soviets launched the Sputnik satellite, in 1957, Washington created the National Aeronautics and Space Administration, or NASA, to win the space race, as well as what would become [the Defense Advanced Research Projects Agency](https://www.darpa.mil/about-us/darpa-history-and-timeline), which was tasked with preventing a future technological surprise. By 1964, research and development accounted for 17 percent of all discretionary federal spending.

Partnering closely with academia and companies, the government funded a large variety of basic research—that is, research without a specific end use in mind. The goal was to build a technological foundation, defined primarily as conventional and nuclear defense capabilities, to ensure the country’s security. The research proved astonishingly successful. Government investment spawned cutting-edge capabilities that undergirded the United States’ military superiority, from supersonic jets to nuclear-powered submarines to guided missiles. The private sector, for its part, got to capitalize on the underlying intellectual property, turning capabilities into products and products into companies. GPS-enabled technologies, airbags, lithium batteries, touchscreens, voice recognition—all got their start thanks to government investment.

Yet over time, the government lost its lead in innovation. In 1964, the U.S. government was spending 1.86 percent of GDP on R & D, but by 1994, that share [had fallen to 0.83 percent](https://www.nsf.gov/statistics/2018/nsb20181/report/sections/research-and-development-u-s-trends-and-international-comparisons/recent-trends-in-u-s-r-d-performance). During that same period, U.S. corporate R & D investment as a percentage of GDP nearly doubled. The numbers tell only half the story. Whereas much of the government’s R & D investment was aimed at finding new, game-changing discoveries, corporate R & D was mostly devoted to incremental innovation. The formula for growing revenue, the private sector realized, was to expand on existing products, adding functionality or making something faster, smaller, or more energy efficient. Companies focused on nearer-term technologies with commercial promise, rather than broad areas of inquiry that might take decades to bear fruit.

Increasingly, the most innovative R & D was taking place not in the labs of large corporations but at nimbler, privately funded startups, where venture capital investors were willing to tolerate more risk. Modern venture capital firms—partnerships that invest in early-stage companies—[first arose in the 1970s](https://salon.thefamily.co/a-brief-history-of-the-world-of-venture-capital-65a8610e7dc2), leading to early successes such as Apple and Microsoft, but it wasn’t until the dot-com bubble of the 1990s that this style of investment really took off. If the first phase of R & D outsourcing was from government labs to corporate America, this was the second phase: away from big businesses and toward small startups. Large companies began to spend less on internal R & D and more on what they called “corporate development,” or acquiring smaller, venture-backed companies with promising technologies.

The rise of venture capitalism created a great deal of wealth, but it didn’t necessarily further U.S. interests. Venture capital firms were judged by their ability to generate outsize returns within a ten-year window. That made them less interested in things such as microelectronics, a capital-intensive sector where profitability arrives in decades more so than years, and more interested in software companies, which need less capital to get going. The problem is that the companies receiving the most venture capital funding have been less likely to pursue national security priorities. When the American venture capital firm Accel [hit the jackpot](https://venturebeat.com/2013/11/24/in-the-land-of-angry-birds-my-trip-to-rovios-headquarters-photo-gallery/) by investing early in Rovio Entertainment, the Finnish video game company behind the mobile app Angry Birds, it may have been a triumph for the firm, but in no way did it further U.S. interests.

Over time, the U.S. government lost its lead in innovation.

Meanwhile, government funding of research [continued its decline](https://www.nsf.gov/statistics/2018/nsb20181/report/sections/research-and-development-u-s-trends-and-international-comparisons/recent-trends-in-u-s-r-d-performance) relative both to GDP and to R & D spending in the private sector. The Department of Defense retained the single biggest pot of federal research funding, but there was less money overall, and it became more dispersed across various agencies and departments, each pursuing its own priorities in the absence of a national strategy. As the best researchers were lured to the private sector, the government’s in-house scientific expertise atrophied. Once close relationships between private companies and Washington also suffered, as the federal government was no longer a major customer for many of the most innovative firms. U.S. agencies were rarely the first to buy advanced technology, and smaller startups generally lacked the lobbyists and lawyers needed to sell it to them anyway.

Globalization also drove a wedge between corporations and the government. The American market came to look less dominant in an international context, with the huge Chinese consumer market exerting a particularly powerful pull. Corporations now had to think of how their actions might look to customers outside the United States. Apple, for example, famously [refused to unlock](https://www.wired.com/story/the-time-tim-cook-stood-his-ground-against-fbi/) iPhones for the FBI, a decision that probably enhanced its brand internationally.

Further complicating matters, innovation itself was upending the traditional understanding of national security technology. More and more, technology was becoming “dual use,” meaning that both the civilian and the military sectors relied on it. That created new vulnerabilities, such as concerns about the security of microelectronic supply chains and telecommunications networks. Yet even though civilian technologies were increasingly relevant for national security, the U.S. government wasn’t responsible for them. The private sector was, and it was innovating at a rapid clip with which the government could barely keep pace. Taken together, all these trends have led to a concerning state of affairs: the interests of the private sector and the government are further apart than ever.

THE CHINESE JUGGERNAUT

The changes in American innovation would matter less if the world had remained unipolar. Instead, they occurred alongside the rise of a geopolitical rival. Over the past two decades, China has evolved from a country that largely steals and imitates technology to one that now also improves and even pioneers it. This is no accident; it is the result of the state’s deliberate, long-term focus. China has invested massively in R & D, with its share of global technology spending growing from under five percent in 2000 to over 23 percent in 2020. If current trends continue, China is expected [to overtake the United States](https://www.rdworldonline.com/global-rd-investments-unabated-in-spending-growth/) in such spending by 2025.

Central to China’s drive has been a strategy of “military-civil fusion,” a coordinated effort to ensure cooperation between the private sector and the defense industry. At the national, provincial, and local levels, the state backs the efforts of military organizations, state-owned enterprises, and private companies and entrepreneurs. Support might come in the form of research grants, shared data, government-backed loans, or training programs. It might even be as simple as the provision of land or office space; the government is creating whole new cities dedicated solely to innovation.

China’s investment in 5G technology shows how the process works in practice. Equipment for 5G makes up the backbone of a country’s cellular network infrastructure, and the Chinese company Huawei has emerged as a world leader in engineering and selling it—offering high-quality products at a lower price than its Finnish and South Korean competitors. The company has been buoyed by [massive state support](https://www.wsj.com/articles/state-support-helped-fuel-huaweis-global-rise-11577280736)—by The Wall Street Journal’s count, some $75 billion in tax breaks, grants, loans, and discounts on land. Huawei has also benefited from China’s Belt and Road Initiative, which provides generous loans to countries and Chinese companies to finance infrastructure construction.

Massive state investments in artificial intelligence have also paid off. Chinese researchers now publish more scientific papers in that field than American ones do. Part of this success is the result of funding, but something else plays a big role: access to enormous amounts of data. Beijing has fueled the rise of powerhouse companies that sweep up endless information about their users. These include Alibaba, an e-commerce giant; Tencent, which developed the all-purpose WeChat app; Baidu, which began as a search engine but now offers a range of online products; DJI, which dominates the consumer drone market; and SenseTime, which provides facial recognition technology for [China’s video surveillance network](https://www.nytimes.com/2019/04/14/technology/china-surveillance-artificial-intelligence-racial-profiling.html) and is said to be the world’s most valuable artificial intelligence company. As a matter of law, these companies are required to cooperate with the state for intelligence purposes, a broad mandate that is almost certainly used to force companies to share data for many other reasons.

Washington has monitored China’s technological progress through a military lens.

That information increasingly involves people living outside China. Chinese companies have woven a global web of data-gathering apps that collect foreigners’ private information about their finances, their search history, their location, and more. Those who make a mobile payment through a Chinese app, for example, could have their personal data routed through Shanghai and added to China’s growing trove of knowledge about foreign nationals. Such information no doubt makes it easier for the Chinese government to track, say, an indebted Western bureaucrat who could be convinced to spy for Beijing or a Tibetan activist who has taken refuge abroad.

China’s hunger for data extends to some of the most personal information imaginable: our own DNA. Since the COVID-19 pandemic began, BGI—a Chinese genome-sequencing company that began as a government-funded research group—has broken ground on some 50 new laboratories abroad designed to help governments test for the virus. China has legitimate reasons to build these labs, but it also has [an ugly record](https://www.nytimes.com/2019/02/21/business/china-xinjiang-uighur-dna-thermo-fisher.html) of forcibly collecting DNA data from Tibetans and Uighurs as part of its efforts to monitor these minorities. Given that BGI runs China’s national library of genomics data, it is conceivable that through BGI testing, foreigners’ biological data might end up in that repository.

Indeed, China has shown great interest in biotechnology, even if it has yet to catch up to the United States. Combined with massive computing power and artificial intelligence, innovations in biotechnology could help solve some of humanity’s most vexing challenges, from disease and famine to energy production and climate change. Researchers have mastered the gene-editing tool CRISPR, allowing them to grow wheat that resists disease, and have managed to encode video in the DNA of bacteria, raising the possibility of a new, cost-effective method of data storage. Specialists in synthetic biology have invented a new way of producing nylon—with genetically engineered microorganisms instead of petrochemicals. The economic implications of the coming biotechnology revolution are staggering: the McKinsey Global Institute has estimated the value of biotechnology’s many potential applications at up to [$4 trillion](https://www.mckinsey.com/~/media/McKinsey/Industries/Pharmaceuticals%20and%20Medical%20Products/Our%20Insights/The%20Bio%20Revolution%20Innovations%20transforming%20economies%20societies%20and%20our%20lives/MGI-Bio-Revolution-Report-May-2020.ashx) over the next ten to 20 years.

Like all powerful technologies, however, biotechnology has a dark side. It is not inconceivable, for example, that some malicious actor could create a biological weapon that targeted a specific ethnic group. On controversial questions—such as how much manipulation of the human genome is acceptable—countries will accept different degrees of risk in the name of progress and take different ethical positions. The country that leads biotechnology’s development will be the one that most profoundly shapes the norms and standards around its use. And there is reason to worry if that country is China. In 2018, the Chinese scientist [He Jiankui](https://www.sciencemag.org/news/2019/12/chinese-scientist-who-produced-genetically-altered-babies-sentenced-3-years-jail) genetically engineered the DNA of twin babies, prompting an international uproar. Beijing portrayed him as a rogue researcher and punished him. Yet the Chinese government’s disdain for human rights, coupled with its quest for technological supremacy, suggests that it could embrace a lax, even dangerous approach to bioethics.

THINKING BIGGER

Washington has monitored China’s technological progress through a military lens, worrying about how it contributes to Chinese defense capabilities. But the challenge is much broader. China’s push for technological supremacy is not simply aimed at gaining a battlefield advantage; Beijing is changing the battlefield itself. Although commercial technologies such as 5G, artificial intelligence, quantum computing, and biotechnology will undoubtedly have military applications, China envisions a world of great-power competition in which no shots need to be fired. Technological supremacy promises the ability to dominate the civilian infrastructure on which others depend, providing enormous influence. That is a major motivation behind Beijing’s support for high-tech civilian infrastructure exports. The countries buying Chinese systems may think they are merely receiving electric grids, health-care technology, or online payment systems, but in reality, they may also be placing critical national infrastructure and citizens’ data in Beijing’s hands. Such exports are China’s Trojan horse.

Despite the changing nature of geopolitical competition, the United States still tends to equate security with traditional defense capabilities. Consider microelectronics. They are critical components not only for a range of commercial products but also for [virtually every major defense system](https://www.sciencedirect.com/topics/chemistry/microelectronics), from aircraft to warships. Because they will power advances in artificial intelligence, they will also shape the United States’ future economic competitiveness. Yet investment in microelectronics has fallen through the cracks. Neither the private sector nor the government is adequately funding innovation—the former due to the large capital requirements and long time horizons involved and the latter because it has focused more on securing current supplies than on innovating. Although China has had a hard time catching up to the United States in this area, it is only a matter of time before it moves up the microelectronics value chain.

Another casualty of the United States’ overly narrow conception of security and innovation is 5G technology. By dominating this market, China has built a global telecommunications network that can serve geopolitical purposes. One fear is that Beijing could help itself to data running on 5G networks. Another is the possibility that China might sabotage or disrupt adversaries’ communications networks in a crisis. Most U.S. policymakers failed to predict the threat posed by Chinese 5G infrastructure. It wasn’t until 2019 that Washington [sounded the alarm](https://www.forbes.com/sites/zakdoffman/2019/09/08/trump-gets-shocking-new-huawei-warningfrom-microsoft/?sh=5e86e6a22aee) about Huawei, but by then, there was little it could do. U.S. companies had never offered an end-to-end wireless network, instead focusing on manufacturing individual components, such as handsets and routers. Nor had any developed its own radio access network, a system for sending signals across network devices that is needed to build an end-to-end 5G system like that offered by Huawei and a few other companies. As a result, the United States found itself in an absurd situation: threatening to end intelligence cooperation if close allies adopted Huawei’s 5G technology without having an attractive alternative to offer.

Digital infrastructure may be today’s battle, but biotechnology will likely be the next. Unfortunately, it, too, is not considered a priority within the U.S. government. The Department of Defense has understandably shown little interest in it. Part of the explanation for that lies in the fact that the United States, like many other countries, has signed a treaty renouncing biological weapons. Still, biotechnology has other implications for the Pentagon, from changing manufacturing to improving the health of service personnel. More important, any comprehensive assessment of the national interest must recognize biotechnology’s implications for ethics, the economy, health, and planetary survival.

Because so many of the gaps in U.S. innovation can be traced back to a narrow view of the national interest and which technologies are needed to support it, the Biden administration’s first step should be to expand that understanding. Officials need to appreciate both the threats and the opportunities of the latest technologies: the havoc that could be wreaked by a paralyzed 5G network or unscrupulous genetic engineering, as well as the benefits that could come from sustainable energy sources and better and more efficient health care.

The Biden administration’s second step should be to create a process for aligning government investments with national priorities. Today, federal funding is skewed toward military capabilities. This reflects a political reality: the Pentagon is the rare part of the government that reliably receives bipartisan budgetary support. Fighter jets and missile defense, for example, are well funded, whereas pandemic preparedness and clean energy get short shrift. But setting the right national technological priorities raises questions that can be answered only by making judgments about the full range of national needs. What are the most important problems that technology can help solve? Which technologies have the power to solve only one problem, and which might solve multiple problems? Getting the answers to such questions right requires taking a truly national perspective. The current method doesn’t do so.

A properly run process would begin with what national security professionals call a “net assessment”—in this case, an analysis of the state of global technological progress and market trends to give policymakers the information necessary to work from a shared baseline. To be actionable, the process would establish a handful of near- and long-term priorities. A compelling candidate for long-term investment, for instance, might be microelectronics, which are foundations for both military and civilian innovation but have difficulty attracting private investment dollars. Another long-term priority might be biotechnology, given its importance for the economy and the future of humanity. As for short-term priorities, the U.S. government might consider launching an international effort to combat disinformation operations or to promote 5G innovation. Whatever the specific priorities chosen, the important thing is that they be deliberate and clear, guiding the United States’ decisions and signaling its aspirations.

A MARKET MINDSET

Supporting those priorities is another matter altogether. The current approach—with the government funding only limited research and the private sector taking care of commercializing the results—isn’t working. Too much government-funded research remains locked in the lab, unable to make the leap to commercial viability. Worse, when it manages to leave U.S. government labs, it often ends up in foreign hands, depriving the United States of taxpayer-financed intellectual property.

The U.S. government will need to take a more active role in helping research make it to the market. Many universities have created offices that focus on commercializing academic research, but most federal research institutions have not. That must change. In the same spirit, the U.S. government should develop so-called sandboxes—public-private research facilities where industry, the academy, and the government can work together. In 2014, Congress did just that when it established Manufacturing USA, a network of facilities that conduct research into advanced manufacturing technologies. [A similar initiative for microelectronics has been proposed](https://www.aip.org/fyi/2020/lawmakers-propose-multibillion-dollar-semiconductor-rd-push), and there is no reason not to create additional sandboxes in other areas, too.

The U.S. government could also help with commercialization by building national data sets for research purposes, along with improved privacy protections to reassure the people whose information ends up in them. Such data sets would be particularly useful in accelerating progress in the field of artificial intelligence, which feeds off massive quantities of data—something that only the government and a handful of big technology companies currently possess. Success in synthetic biology, along with wider medical research, will also depend on data. Thus, the U.S. government should increase the quantity and diversity of the data in the [National Institutes of Health’s genome library](https://www.nih.gov/about-nih/what-we-do/nih-almanac/national-human-genome-research-institute-nhgri) and curate and label that information so that it can be used more easily.

All this help with commercialization will be for naught, however, if the startups with the most promising technologies for national security cannot attract enough capital. Some of them run into difficulties at the early and late stages of growth: in the beginning, they have a hard time courting investors willing to make high-risk bets, and later on, when they are ready to expand, they find it difficult to attract investors willing to write large checks. To fill the gaps at both stages, the U.S. government needs its own investment vehicles.

Too much government-funded research remains locked in the lab.

We work at the parent company of [In-Q-Tel](https://www.dhs.gov/science-and-technology/iqt), which offers a promising model for early-stage investment. Created in 1999 by the CIA, In-Q-Tel is an independent, not-for-profit firm that invests in technology startups that serve the national interest. (One early recipient of In-Q-Tel’s investment was Keyhole, which became the platform for Google Earth.) Now also funded by the Department of Homeland Security, the Department of Defense, and other U.S. agencies, In-Q-Tel identifies and adapts innovative technologies for its government customers. Compared with a federal agency, a private, not-for-profit firm can more easily attract the investment and technology talent required to make informed investments. There is every reason to take this model and apply it to broader priorities. Even just $100 million to $500 million of early-stage funding per year—a drop in the bucket of the federal budget—could help fill the gap between what the private sector is providing and what the nation needs.

For the later stage, policymakers could draw inspiration from the [U.S. International Development Finance Corporation](https://www.dfc.gov/media/press-releases/dfc-announces-direct-equity-request-applications), the federal agency responsible for investing in development projects abroad, which in 2018 was first authorized to make equity investments. A late-stage investment fund could be structured as an arm of that agency or as a fully independent, not-for-profit private entity funded by the government. Either way, it would provide badly needed capital to companies ready to scale up their operations. Compared with early-stage government support, late-stage government support would have to be greater, in the range of $1 billion to $5 billion annually. To expand the impact of this government investment, both the early- and the late-stage funds should encourage “sidecar” investments, which would allow profit-seeking firms and individuals to join the government in making, and potentially profiting from, technology bets.

Government-sponsored investment funds like these would not only fill critical gaps in private-sector investment; they would also allow taxpayers to share in the success of research their money has funded. Currently, most government funding for technology comes in the form of grants, such as the Small Business Innovation Research grants administered by the Small Business Administration; this is true even of some programs that are billed as investment funds. This means that taxpayers foot the bill for failures but cannot share in the success if a company makes it big. As the economist Mariana Mazzucato [has pointed out in these pages](https://www.foreignaffairs.com/articles/united-states/2020-10-02/capitalism-after-covid-19-pandemic), “governments have socialized risks but privatized rewards.”

Not-for-profit investment vehicles working on behalf of the government would have another benefit: they would allow the United States to play offense when it comes to technological competition. For too long, it has played defense. For example, it has banned the export of sensitive technology and restricted foreign investment that might pose a national security risk—even though these actions can harm U.S. businesses and do nothing to promote innovation. Supporting commercialization with government-sponsored equity investment will not be cheap, but some of the upfront costs would likely be regained and could be reinvested. There are also nonmonetary returns: investing in national priorities, including infrastructure that could be exported to U.S. allies, would enhance the United States’ soft power.

INNOVATION EVER AFTER

President Joe Biden has pledged to “build back better” and restore the United States’ global leadership. On the campaign trial, he laid out promising proposals [to promote American innovation](https://joebiden.com/made-in-america/). He called for dramatically boosting federal R & D spending, including some $300 billion to be focused on breakthrough technologies to enhance U.S. competitiveness. That is a good start, but he could make this drive far more effective if he first created a rigorous process for identifying top technological priorities. Biden said he supports “a scaled-up version” of the Small Business Innovation Research grants and has backed “infrastructure for educational institutions and partners to expand research.” Even greater opportunity lies in filling the gaps in private-sector investment and undertaking a long-overdue expansion of government support for commercialization.

On innovation, if the United States opts for just more of the same, its economy, its security, and its citizens’ well-being will all suffer. The United States will thus further the end of its global leadership and the unfettered rise of China. Biden has the right instincts. Yet in order to sustain its technological dominance, the country will have to fundamentally reenvision the why and how of innovation. Biden will no doubt be consumed with addressing domestic challenges, but he has spent much of his career promoting the United States’ global leadership. By revamping American technological innovation, he could do both.

#### Solves the cyber advantage.

Lewis 20 [James Andrew; 8/17/20; senior vice president and director of the Strategic Technologies Program at the Center for Strategic and International Studies; "Dismissing Cyber Catastrophe," https://www.csis.org/analysis/dismissing-cyber-catastrophe]

One major failing of catastrophe scenarios is that they discount the robustness and resilience of modern economies. These economies present multiple targets and configurations; they are harder to damage through cyberattack than they look, given the growing (albeit incomplete) attention to cybersecurity; and experience shows that people compensate for damage and quickly repair or rebuild. This was one of the counterintuitive lessons of the Strategic Bombing Survey. Pre-war planning assumed that civilian morale and production would crumple under aerial bombardment. In fact, the opposite occurred. Resistance hardened and production was restored.1

#### Reforming patent law to remove incentives and allowances for anticompetitive behavior solves and is less stifling than antitrust law.

Lemley ‘7, Mark A. - William H. Neukom Professor of Law at Stanford Law School and the Director of the Stanford Law School Program in Law, Science & Technology, as well as a founding partner of the law firm of Durie Tangri LLP ("Ten things to do about patent holdup of standards (and one not to)." BCL Rev. 48 (2007): 149. <https://www.bc.edu/content/dam/files/schools/law/bclawreview/pdf/48_1/06_lemley.pdf>) //S.He

B. Things the Law Can Do

Second, what might the law do to deal with patent holdup? As discussed below, the law can have antitrust get out of the way of SSO attempts to find the true costs of standards and allow discussion of royalty rates before a standard is set, limit abuse of continuation practice, make it harder to claim willful infringement in court, have courts consider all of the patent contributors to a standard in awarding damages, and limit injunctive relief.

1. Antitrust Law Help for Participants in SSOs

The first thing the law can do flows from the above discussions of SSO behavior. Antitrust law ought to get out of the way of a number of mechanisms discussed in Section A that permit SSOs to find out the true cost of a standard and encourage licensing negotiations over essential patents. Specifically, the law ought to permit SSO members the latitude to discuss royalty rates collectively before the standard is set. Antitrust law should even allow SSOs to impose a step-down royalty scheme, so long as there is not a hard cap such that the SSO won’t pay more than X dollars, regardless of how many patents are out there.

Now, antitrust law is justifiably nervous about people in an industry getting together to talk about price. But in this context, the parties are going to have to have these conversations individually or collectively anyway. I think it is far better to have these conversations ex ante, before the group adopts the standard. The only way to plausibly accomplish this is to do it within the context of the SSO. I note in this respect that paragraph 225 of the European Commission’s licensing guidelines, quite wisely, affirmatively permits the negotiation of royalty rates in SSOs before the standard is set.57 And Deborah Platt Majoras, the Chairman of the Federal Trade Commission, has suggested that the government is unlikely to pursue antitrust claims against SSOs that discuss price, though she made it clear that any such acts are subject to rule of reason scrutiny.58

This does not mean that antitrust law should impose no limits on such negotiations. We don’t want the SSO acting as a monolithic block to try to artificially drive down the price that patent owners can charge.59 One solution to this potential problem is to say that SSOs can impose such restrictions only with respect to other members of the group. SSOs should not be able to negotiate collectively with respect to outsiders, because then they really are going to have a concrete set of interests: they know they represent only potential defendants and that the outsider is a potential plaintiff. Further, such negotiations should only be permitted before or simultaneously with discussions about the technical merits of the standard, before the parties know what the standard is and therefore before they know for sure who is actually going to be the owner and who is going to be the licensee. Both of those limits reduce the risk of buyers’ cartel behavior—SSO decisions that artificially diminish the royalty charged.60

2. Limit Abuse of Continuation Practice

The remaining four solutions are not specific to SSOs, but involve reform of the patent law. All of the proposals I’ve offered so far will help, but they will work only for the subset of patent holdup problems that affect group-adopted industry standards, and only for the subset of patent owners that belong to SSOs already. They will not deal with problems created by the outsider, the person who decides to sit and wait and then brings his patents to bear. Solutions two through five are directed at these problems.

My second suggestion is to limit abuse of continuation practice in the U.S. patent system. To an outsider, one of the oddities of the U.S. patent system is that it is impossible for the PTO ever to finally reject a patent application.61 Patent applicants whose claims are rejected can come back to the PTO an unlimited number of times to try to persuade it to grant them a patent. Even if an applicant persuades the PTO to grant a patent, she may still come back and ask for better or broader claims.62 Now, I would not have thought, frankly, that restricting this practice was one of my more controversial proposals. There seem to be few good justifications for continuation practice. But there are a lot of people in the patent bar deeply committed to it. Some patent owners are committed because they get to use continuations to game the system. These owners wait and see what standards get adopted by SSOs and then redraft their patent claims around those standards. This is a particular problem in the IT sector because technology changes rapidly and unscrupulous patentees can use continuation practice to draft patent claims to cover things they had not thought of.

Other patent owners may support continuations for other reasons. For instance, they may be worried about shifts in technology. In the peculiar context of the pharmaceutical industry, there is minimal cost to using continuations, since the drug is unlikely to receive Food and Drug Administration approval for a substantial period of time anyway. But, even if there are reasons to retain them in some circumstances, limiting or eliminating abuse of continuations would help solve the broader holdup problem.

The initial draft of H.R. 2795, the Patent Reform Bill introduced in the U.S. House of Representatives in 2005, would have expressly granted the PTO the power to limit continuation practice.63 Although that provision is no longer in the current bill before Congress, the PTO itself has issued a Notice of Proposed Rulemaking that would limit applicants to one continuation as a matter of right, and permit further continuations only if the applicant could show a special need.64 Although this new rule would not eliminate abuse of continuations, if implemented it will be an important step towards curbing patent holdup.

3. Limiting Willfulness

My third suggestion is to make it harder to claim willfulness in patent law. We all have an intuitive understanding as laypeople of what it means to act willfully: to do something intentionally, knowing the consequences. Patent law’s legal standard for willfulness bears no resemblance to that lay understanding of the term “willfulness.” We should change the law so it does bear such a resemblance. We could limit willfulness to cases in which a defendant actually copied from the inventor, or at least cases in which the defendant knew of the existence of the patents when it adopted a technology.65 Right now, willfulness is mostly used in circumstances where the technology has been in existence for four or five years before the patent owner sends a letter to the developer alleging infringement.66 Suddenly, a company that independently developed the technology becomes a willful infringer, and potentially liable for treble damages. The result is another way that a patent owner can hold up an independent developer.

Alternatively, we could do what H.R. 2795 does.67 H.R. 2795 keeps a broad definition of willfulness, but makes it much harder to prove in court.68 It would prevent plaintiffs from even alleging willfulness until they’ve actually demonstrated infringement at trial, and would therefore change somewhat the dynamics of settlements made in the shadow of willfulness.69 At a minimum, we could prohibit a finding of willfulness on the part of SSO members unless they receive notice of the patent prior to the adoption of the standard.70

Such an approach might work best if coupled with some sort of registry or public disclosure of new standards, so that non-members of the SSO could learn of the standard and submit their patents.71 If members were not aware of the patent—if they made an investment decision not having any idea the patent is out there—then it is hard to call them willful infringers. This doesn’t mean that the SSO members aren’t infringers if they use the standard, and it doesn’t mean they won’t be liable for damages. It would mean, however, that SSO members couldn’t be found to be willfully infringing in adopting a standard so long as they tried to find out whether anyone had patents covering the standard. This, too, would encourage disclosure of essential patents, since patent owners who wanted to enforce their rights would also want to preserve their ability to seek treble damages.

4. Reasonable Royalty Rates and Damages Calculations

My fourth suggestion is that we fix the problem of definitions and proof in reasonable royalties and damages calculation. Carl Shapiro and I are studying the damages rules in royalty-stacking cases right now.72 For a variety of reasons, the royalty rates that courts actually award are surprisingly high to most people who negotiate royalties.73 The average royalty rate in a single-patent “reasonable royalty” damages case is around 13%.74 It varies a little by industry, but not as much as might be expected. In the IT industry, the average royalty rate is 7%, which is still much greater than what license negotiators in the field believe is the benchmark.75 Furthermore, damage royalties drop a little for component inventions, but, again, not much.76 If the patent is one of several components that have to be aggregated together, the court-ordered royalty drops by about 30%.77 This is less than we would expect it to drop if there were only two components in each component industry technology.78

In short, the data suggest that courts don’t calculate damages taking full account of the contributions that other people besides the patent owner have made to a defendant’s product.79 But they could. H.R. 2795 once again takes steps in this direction, requiring that a patent owner seeking damages based on the sale of a multicomponent invention demonstrate that the royalty is attributable to the patentee’s inventive contribution, as distinguished from all the other aspects of the product being sold.80 That requirement would help alleviate some of the holdup problem by reducing patent royalty rates in litigation, and therefore in licensing, to something approximating what it is that the patentee actually contributes.

5. Redefining Injunctive Relief

My final idea is one that has been overtaken by events: I think we ought to take seriously what the patent statute actually says about injunctive relief. The patent statute says that courts “may” grant injunctions “in accordance with principles of equity on such circumstances as they deem reasonable.”81 The U.S. Court of Appeals for the Federal Circuit, by contrast, had adopted a rule that district courts must grant injunctions regardless of the principles of equity, with one possible exception—public health—that is not applicable to most of the IT industry.82 Under that Federal Circuit rule, if you won a patent suit, you got an injunction. In my speech at the Owning Standards Symposium at Boston College in March 2006, I suggested this rule should change. And change it did.

The U.S. Supreme Court reversed the Federal Circuit rule in 2006 in eBay, Inc. v. MercExchange, L.L.C., holding that it contravened the patent code.83 The Court gave district courts the power to consider traditional principles of equity in deciding whether to grant injunctive relief.84 Courts can now consider the public interest, the balance of the hardships, and whether the patentee really needed injunctive relief or was merely using the threat of injunction to leverage its bargaining power.85 There are some early indications that district courts are taking this responsibility seriously, denying injunctive relief where nonmanufacturing patent owners seek it primarily to use as a bargaining lever.86 Denying such relief is the most powerful way to prevent patent holdup and realign the incentives in patent licensing negotiations.87 Applying equitable principles doesn’t mean eliminating patent injunctions. My guess is that the majority of infringement findings will still result in injunctive relief because the patentee is actually using the patent to exclude a competitor. But courts will be empowered in cases of holdup to remove the threat that induces defendants to settle for royalties far in excess of the patentee’s actual contribution.

### 1NC – Infrastructure DA

#### Infrastructure will pass but PC is vital

Sherman, 11-7 – Jake, Co-Founder of Punchbowl News, MA Columbia Journalism School, and longtime POLITICO reporter covering national politics with a focus on leadership and the politics of legislating. "This Week With George Stephanopoulos," ABC’s This Week via SEC Wire, p. Nexis – Iowa

ALEXANDER: Jake Sherman is the Co-Founder of Punchbowl News and an NBC News Contributor. Jake, good morning. These are some headlines the Democrats probably could have used about a week ago. OK, so the Senate, they passed this infrastructure bill August 10th. 88 days ago, the house finally delivered on it, last night. So, Democrats are finally doing a little celebrating. But it cost them a ton of political capital to get here. Did they get the win that they wanted? JAKE SHERMAN, NBC NEWS CONTRIBUTOR: Absolutely. I mean, these are the headlines, Peter, that they`ve been waiting for, for a long time. It just highlights some of the divisions in the Democratic Party, divisions that were going to come up whether it`s on this priority, or other priorities. But again, I mean, this is something that they`ve been waiting for, something that they`ve vowed to do something that as you guys know well. The President campaigned on, campaigned on this idea he could bring Congress together. Now, it`s very messy, it was very bumpy along the way. And we`ve covered every twist and turn of it but a huge victory, the President will be able to sign in the Rose Garden, if he chooses -- sign this bill in the Rose Garden with Republicans and Democrats behind him. WELKER: So, Jake, the first part of this is done, right? But there is a second bill, which the President wants to get passed his social safety net program $1.75 trillion dollars, progressives are saying basically, they trust the president to get it over the finish line moderates say they want to see the price tag first. Is there any guarantee this is going to get done? SHERMAN: Kristen, I think it is going to get done if I were a gambling man, but it`s going to be again, very messy. This bill is going to go to the Senate where it`s going to change a lot at the whims of Jim Henson and Kyrsten Sinema, two of the most difficult Democrats for a lot of the leadership to deal with and then it`s going to have to go back to the house. So, I would imagine we are many weeks, if not months from that being signed into law.

#### Antitrust decks PC and tanks agenda

Carstensen, 21 – Peter C. Carstensen is Chair in Law Emeritus, University of Wisconsin Law School. “The “Ought” and “Is Likely” of Biden Antitrust,” Concurrences, February, N° 1-2021 On-Topic The new US antitrust administration, <https://www.concurrences.com/en/review/issues/no-1-2021/on-topic/the-new-us-antitrust-administration-en#carstensen> – Iowa

12. But given a hostile judiciary, the agencies are likely to limit their challenges to the most obvious cases. Important cases will die on the courthouse steps without ever getting into court. To be sure, the agencies are less likely to waste time investigating minor marijuana mergers and to focus resources on more important matters. The emergent judicial demands for detailed proof of actual adverse competitive effects will limit the scope of what can be done. The resources to develop a major case in light of these expectations will be significant and so constrain the agencies further. Thus, while merger enforcement may see an uptick especially where the merger involves two major direct competitors in more than moderately concentrated markets, the incentives to pursue vertical or potential competition cases will be very limited. Similarly, despite the growing recognition of how dominant firms, especially in the high-tech arena, buy up nascent competitors, the current standards for merger analysis will make such challenges very unlikely.

13. Given the American Express decision, the burden of challenging anticompetitive vertical restraints is likely to deter the enforcers from following up on the Dentsply [89] and McWane [90] cases except, where, as in those cases, a clear monopoly existed. Given existing market concentrations in many industries, this will result in the continuation of a plethora of harmful restraints.

14. Similarly, despite bipartisan murmurs about competitive issues, the potential in a closely divided Congress that any major initiatives will survive is limited at best. In part the challenge here is how the Biden administration will rank its commitments. If it were to make reform of competition law a major and primary commitment, it would have to trade off other goals, which might include health care reform or increases in the minimum wage. It is likely in this circumstance the new administration, like the Obama administration’s abandonment of the pro-competitive rules proposed under the PSA, would elect to give up stricter competition rules in order to achieve other legislative priorities.

15. Another key to a robust commitment to workable competition is the choice of cabinet and other key administrative positions. Here as well, the early signs are not entirely encouraging. In selecting Tom Vilsack to return as secretary of agriculture, the president has embraced a friend of the large corporate interests dominating agriculture who has spent the last four years in a highly lucrative position advancing their interests. Given the desperate need for pro-competitive rules to implement the PSA and control exploitation of dairy farmers through milk-market orders, the return of Vilsack is not good news. Who will head the FTC and who will be the attorney general and assistant attorney general for antitrust is still unknown, but if those picks are also centrists with strong links to corporate America the hope for robust enforcement of competition law will further attenuate!

16. In sum, this is a pessimistic prognostication for the likely Biden antitrust enforcement agenda. There is much that ought to be done. But this requires a willingness to take major enforcement risks, to invest significant political capital in the legislative process, and to select leaders who are committed to advancing the public interest in fair, efficient and dynamically competitive markets. The early signs are that the new administration will be no more committed to robust competition policy than the Obama administration. Events may force a more vigorous policy—I will cling to that hope as the Biden administration takes shape.

#### PC is vital to halting warming

Romm, 10-28-2021 – Tony Romm, Sean Sullivan and Tyler Pager, "Biden unveils revised spending plan, expecting Democrats to back it," Washington Post (original), SF Gate (republished), <https://www.sfgate.com/news/article/Biden-crafts-new-spending-package-aimed-at-16571097.php> -- Iowa

WASHINGTON - President Joe Biden on Thursday unveiled a new $1.75 trillion package to overhaul the country's health-care, education, climate and tax laws, muscling through a slew of policy disagreements and internecine political feuds that had stalled his economic agenda for months. The announcement marked a critical moment in Biden's tenure, prompting the president to pay a visit to Capitol Hill and call on Democrats to adopt the spending along with a second, roughly $1.2 trillion package to improve the country's roads, bridges, pipes, ports and Internet connections. "We spent hours and hours and hours over months and months working on this," Biden said in televised remarks. "No one got everything they wanted, including me, but that's what compromise is. That's consensus, and that's what I ran on." Biden's moves reflected a pivotal decision to assume ownership of the sweeping safety-net proposal in a new way. He is investing enormous political capital in the new plan, following days of intensive, secretive meetings with key lawmakers, and ratcheting up his warnings that gun-shy Democrats risk damaging him and the party if they do not get on board. "I don't think it's hyperbole to say that the [Democratic] House and Senate majorities - and my presidency - will be determined by what happens in the next week," he told House Democrats in a closed-door meetings, according to one person in the room, who spoke on the condition of anonymity because of the sensitivity of the discussions. The president added that he expected the framework to gain the Democrats' support, emphasizing the framework had 50 votes in the Senate and telling reporters, "Everyone's on board," as he arrived on Capitol Hill. The call to action appeared to galvanize some Democrats, and the $1.75 trillion framework soon generated praise - crucially from the party's moderate and liberal ranks. Even former president Barack Obama, who has largely stayed out of the day-to-day political battles, put out a statement in support of the framework, calling it a "giant leap forward." One of the longtime holdouts, Sen. Kyrsten Sinema, D-Ariz., quickly offered positive comments about the deal, but without committing to vote for it. "After months of productive, good-faith negotiations with President Biden and the White House, we have made significant progress on the proposed budget reconciliation package," Sinema said in a statement. "I look forward to getting this done, expanding economic opportunities and helping everyday families get ahead." Sen. Joe Manchin III, D-W.Va., the other centrist holdout, similarly offered little comment, saying only, "In the hands of the House" when asked about the new framework in the Capitol on Thursday. The proposal did contain some longtime Democratic priorities, including universal prekindergarten, new sums to combat climate change and additional taxes on the ultrawealthy. But it jettisoned other items, including a plan to provide paid leave to millions of Americans. The president made the cuts to satisfy Sinema and Manchin, who were concerned about overspending, though some liberal Democrats later said they had not given up fighting for those items. With a potential end to the logjam in sight, the framework prompted House Speaker Nancy Pelosi, D-Calif., to move toward holding a vote on the companion infrastructure bill as soon as Thursday. That plan had been held up by House liberals who insisted on seeing an acceptable version of the safety-net plan first. Pelosi cited the president's planned travel to two global summits this week as a reason for swift action, suggesting that Biden's credibility on the world stage would be undermined if his legislative agenda was mired down. But forcing a vote on the infrastructure bill appeared politically risky. Liberal-leaning lawmakers reaffirmed an earlier threat that they would not vote for it unless they were satisfied with the safety-net bill, and in a closely divided Congress, their votes are pivotal. Rep. Pramila Jayapal, D-Wash., who heads the Congressional Progressive Caucus, said she expected liberal lawmakers to "enthusiastically endorse" Biden's new plan and that ultimately "we intend to vote for both bills." But progressives also said they were determined to see the final version of the safety-net bill, not just an outline, before committing to the infrastructure bill. The House Rules Committee released legislative language, but progressives feared it could still be weakened. That prompted them to say they would only vote on the two bills - the infrastructure plan and the safety-net bill - in tandem, as part of a linked package. The timing of the votes remained uncertain as House members departed for the weekend. The architect of the original $3.5 trillion plan, Sen. Bernie Sanders, I-Vt., encouraged House Democrats to hold off on voting until "clear language" is finalized on the safety-net bill with the support of 50 senators. He said he continues to work to advance issues including a more robust expansion of Medicare, but he also described the $1.75 trillion compromise as transformational, saying it is "the kind of legislation [that hasn't] passed in Congress since the 1960s." Democrats are hopeful that another $100 billion will be included in the package for immigration measures, bringing its total cost to $1.85 trillion, but that money could be excluded for procedural reasons. The plan includes a provision for undocumented immigrants who arrived before 2010 to apply for a green card, a precursor to citizenship. The Senate parliamentarian has previously rejected such an item, but some Democrats view its inclusion as a placeholder of sorts, potentially to be replaced by a narrower measure that would provide protected status but not a path to citizenship. With details of the bill still to be filled in, it was far from clear whether the White House had fully locked in the deal. Biden, however, still projected confidence as he exited the roughly hour-long gathering with House Democrats. "I think we're going to be in good shape," he told reporters. Many of the components in the retooled blueprint originate in the proposals Biden put forward in the spring. The ideas correspond with promises the president and other Democratic candidates made in the course of the 2020 election, when Biden ran on a refrain to Build Back Better. But the policy framework that White House aides unfurled Thursday is a significant departure from the roughly $3.5 trillion that the president and many top party lawmakers initially sought. Many of the cuts reflected a deep ideological divide between Democratic liberals, who saw this as a fleeting chance to enact an ambitious agenda, and moderates, who repeatedly tried to dial back the spending. Left-leaning lawmakers led by Sanders initially hoped to leverage their rare - if razor-thin - majorities in the House and Senate to reshape broad swaths of the U.S. economy. In the earliest days of the debate, they had even envisioned a $6 trillion package that they likened to the Great Society and New Deal programs of generations past. But the party's liberal bloc ultimately had no choice but to scale back some of its ambitions to assuage Sinema and Manchin. The duo demanded steep spending cuts and other policy changes in exchange for their votes in the Senate, which is divided 50-50 between the parties and where Vice President Kamala Harris would break any tie. Thursday's new framework includes prekindergarten programs that White House aides described as part of the largest one-time education investment since the creation of public high school. The $1.75 trillion plan also includes new aid to help families afford child care and extends tax credits that millions of parents are receiving in the form of monthly checks. When it comes to health care, the White House plan expands Medicare to cover new hearing benefits. The plan would lengthen the life of tax credits that have helped roughly 9 million Americans afford health insurance purchased on the Affordable Care Act exchanges. And it would provide new tax credits to help roughly 4 million low-income people afford health insurance in a dozen states that have not expanded Medicaid under the ACA. The White House has endorsed roughly $555 billion to address climate change, including tax changes that officials said would help the country reach Biden's goal to halve carbon emissions by 2030. That part of the package is especially critical to the president as he takes part in a major global climate summit next week. In unveiling the details of its new spending plans, White House officials took great care to stress that the entire $1.75 trillion is financed in full. They aim to pay for the package through a variety of new tax policies, including newly proposed rules that require companies to pay a minimum 15% tax - seeking to address the fact some profitable, multinational corporations use creative accounting to lower their tax burdens to zero. The idea is a significant departure from the rate increases Biden initially sought as part of a campaign pledge to unwind the tax cuts enacted under President Donald Trump in 2017. The White House also backed off a plan to apply a new billionaires' income tax to roughly 700 Americans, including Amazon founder Jeff Bezos and Tesla founder and CEO Elon Musk. (Bezos owns The Washington Post.) Instead, they proposed a special 5% rate for Americans with income above $10 million and an additional 3% surtax for those above $25 million. A long slog still awaits lawmakers to turn their deal into a bill, then shepherd it through Congress, a fraught process where the Democrats' slim majorities still leave little room for political error. Pelosi has just a three-vote margin, and Senate Majority Leader Charles Schumer, D-N.Y., possesses only a tiebreaking advantage, meaning Democrats must stay together if they hope to deliver a package that Biden in recent days has described as transformational.

#### Warming causes extinction

Bryce, 20 – Emma, citing Nelson, Roman, and Kemp---Cassidy *Nelson* is Co-lead of the biosecurity team at Oxford), Sabin *Roman* earned a PhD in Complex Systems Simulation from the University of Southampton, and both Roman and Luke *Kemp* are research associates at the Cambridge University. "What Could Drive Humans to Extinction?" Real Clear Science, 7-27-2020, <https://www.realclearscience.com/articles/2020/07/27/what_could_drive_humans_to_extinction.html> -- Iowa

Nuclear war

An existential risk is different to what we might think of as a "regular" hazard or threat, explained Luke Kemp, a research associate at the Centre for the Study of Existential Risk at Cambridge University in the United Kingdom. Kemp studies historical civilizational collapse and the risk posed by climate change in the present day. "A risk in the typical terminology is supposed to be composed of a hazard, a vulnerability and an exposure," he told Live Science. "You can think about this in terms of an asteroid strike. So the hazard itself is the asteroid. The vulnerability is our inability to stop it from occurring — the lack of an intervention system. And our exposure is the fact that it actually hits the Earth in some way, shape or form."

Take nuclear war, which history and popular culture have etched onto our minds as one of the biggest potential risks to human survival. Our vulnerability to this threat grows if countries produce highly-enriched uranium, and as political tensions between nations escalate. That vulnerability determines our exposure.

As is the case for all existential risks, there aren't hard estimates available on how much of Earth's population a nuclear firestorm might eliminate. But it's expected that the effects of a large-scale nuclear winter — the period of freezing temperatures and limited food production that would follow a war, caused by a smoky nuclear haze blocking sunlight from reaching the Earth — would be profound. "From most of the modeling I've seen, it would be absolutely horrendous. It could lead to the death of large swathes of humanity. But it seems unlikely that it by itself would lead to extinction." Kemp said.

Pandemics The misuse of biotechnology is another existential risk that keeps researchers up at night. This is technology that harnesses biology to make new products. One in particular concerns Cassidy Nelson: the abuse of biotechnology to engineer deadly, quick-spreading pathogens. "I worry about a whole range of different pandemic scenarios. But I do think the ones that could be man-made are possibly the greatest threat we could have from biology this century," she said. As acting co-lead of the biosecurity team at the Future of Humanity Institute at the University of Oxford in the United Kingdom, Nelson researches biosecurity issues that face humanity, such as new infectious diseases, pandemics and biological weapons. She recognizes that a pathogen that's been specifically engineered to be as contagious and deadly as possible could be far more damaging than a natural pathogen, potentially dispatching large swathes of Earth's population in limited time. "Nature is pretty phenomenal at coming up with pathogens through natural selection. It's terrible when it does. But it doesn't have this kind of direct 'intent,'" Nelson explained. "My concern would be if you had a bad actor who intentionally tried to design a pathogen to have as much negative impact as possible, through how contagious it was, and how deadly it was.” But despite the fear that might create — especially in our currently pandemic-stricken world — she believes that the probability that this would occur is slim. (It's also worth mentioning that all evidence points to the fact that COVID-19 wasn't created in a lab.) While the scientific and technological advances are steadily lowering the threshold for people to be able to do this, "that also means that our capabilities for doing something about it are rising gradually," she said. "That gives me a sense of hope, that if we could actually get on top [of it], that risk balance could go in our favor." Still, the magnitude of the potential threat keeps researchers' attention trained on this risk.

From climate change to AI

A tour of the threats to human survival can hardly exclude climate change, a phenomenon that (is) already driving the decline and extinction of multiple species across the planet. Could it hurl humanity toward the same fate?

The accompaniments to climate change — food insecurity, water scarcity, and extreme weather events — are set to increasingly threaten human survival, at regional scales. But looking to the future, climate change is also what Kemp described as an "existential risk multiplier" at global scales, meaning that it amplifies other threats to humanity's survival. "It does appear to have all these relationships to both conflict as well as political change, which just makes the world a much more dangerous place to be." Imagine: food or water scarcity intensifying international tensions, and triggering nuclear wars with potentially enormous human fatalities.

This way of thinking about extinction highlights the interconnectedness of existential risks. As Kemp hinted before, it's unlikely that a mass extinction event would result from a single calamity like a nuclear war or pandemic. Rather, history shows us that most civilizational collapses are driven by several interwoven factors. And extinction as we typically imagine it — the rapid annihilation of everyone on Earth — is just one way it could play out.

### States

#### The fifty states and relevant territories ought to

#### substantially increase antitrust prohibitions on standard essential patent holders that engage in anticompetitive licensing practices.

#### create and abide by uniform, consistent guidelines and coordinate state antitrust cases in parallel fashion through the National Association of Attorneys General

#### increase funding and resources for enforcement of state antitrust laws,

#### The Supreme Court of the United States ought to not preempt state antitrust laws.

#### State antitrust enforcement is constitutional and solves.

First 01 (Harry First, Professor of Law, New York University School of Law, “Delivering Remedies: The Role of the States in Antitrust Enforcement,” *George Washington Law Review*, Vol. 69, Issues 5 & 6 (October/December 2001), pp. 1004-1041)

Of course, neither Illinois Brick, nor the parens patriae provision of the 1976 Act for that matter, spoke to the states' jurisdiction to enforce state antitrust law.5 1 State law antitrust enforcement had coexisted with federal enforcement from the time that the Sherman Act was passed and the constitutionality of such state law enforcement had long been accepted.52 Thus, it should not have been surprising that after Illinois Brick a number of states revisited their own state laws and enacted statutes permitting indirect purchaser suits under state antitrust law.53

The constitutionality of state indirect purchaser legislation was presented to the Supreme Court in California v. ARC America Corp., de- cided in 1989.54 Four states filed federal antitrust actions for damages they had suffered from an alleged nationwide conspiracy to fix the price of ce- ment. Because at least some of their damages were indirect, they appended to their federal cause of action state law claims under their indirect purchaser statutes.5 Following a settlement of all federal and state claims, the states sought to participate in the settlement fund.56 On objection from the direct purchasers, the district court denied the states' indirect purchaser claims to the settlement fund, holding that state indirect purchaser laws were pre- empted by virtue of Illinois Brick.5 7 The Supreme Court reversed. 58

Pointing to "the long history of state common-law and statutory reme- dies against monopolies and unfair business practices," the Court stated that it is "plain that this is an area traditionally regulated by the States. '59 Indeed, "Congress intended the federal antitrust laws to supplement, not displace, state antitrust remedies."0 That state law might impose liability beyond what federal law provides does not conflict with any federal policy that the Court identified in prior cases. Writing for a unanimous Court, Justice White stated:

When viewed properly, Illinois Brick was a decision construing the federal antitrust laws, not a decision defining the interrelationship between the federal and state antitrust laws. The congressional pur- poses on which Illinois Brick was based provide no support for a finding that state indirect purchaser statutes are pre-empted by federal law.

The Supreme Court's decision in ARC America capped fifty years of judicial and legislative development of the jurisdiction of state antitrust en- forcers. Under federal law the states can now seek money damages for federal antitrust violations that injure them or their citizens as direct purchasers. Under state law they can claim damages suffered from antitrust violations that harm them or their citizens as indirect purchasers (if state law provides for such recoveries). The states may also be able to use consumer protection or unfair competition statutes to require defendants who engage in anticompetitive conduct that harms consumers either to disgorge their profits or to provide restitution to their victims.62 Like anti-trust indirect purchaser claims, these state claims can either be brought individually in state court or included as supplemental claims to federal antitrust violations.

Beyond seeking damages, state enforcers are likewise able to use either federal or state courts to seek injunctive relief to prevent future violations. This includes the right to seek divestitures in merger cases and the right to seek structural relief in monopolization cases. So well accepted is the exercise of this right that its assertion now goes unchallenged by defendants. 63 And, finally, individual states' antitrust laws may contain criminal provisions or civil penalties, which the states can enforce in state court.64

Indeed, at least as a statutory matter, the jurisdictional tools available to the states exceed those available to the federal antitrust enforcement agencies. The Justice Department can sue for its proprietary injuries, but it al- most never does so,65 and it has not sought to assert a parens patriae right to sue for injury to U.S. citizens (nor could it likely do so in light of the 1976 Hart-Scott-Rodino Act).66 Federal law would also presumably prevent suit for damages to the U.S. government as an indirect purchaser. There are no civil penalties available for violations of the antitrust laws,67 and the disgorgement or restitution remedy has only rarely been invoked (by the Federal Trade Commission) and is of uncertain legality.68

Similarly, when compared to private enforcement, state antitrust enforcers have stronger jurisdictional tools. The main advantage is that although the federal parens patriae claim for damages under the Hart-Scott-Rodino Act has procedural protections similar to those provided under Rule 23 for class members, such actions need not meet Rule 23's requirements, such as commonality of claims or adequacy of representation. 69 These issues are, of course, major problems in antitrust class actions.70 On the injunction side, standing presents no problems for the states when they are seeking to protect either their economy in general, or the interests of their consumers; private litigants, however, may still face hurdles.71 And on the investigative side, the states generally have broad power to use compulsory process to investigate for possible antitrust violations prior to filing a suit (similar to federal investigative power72). Private plaintiffs, of course, lack this ability.

## Innovation Advantage

### Dominance High---1NC

#### American tech dominance is high. Only antitrust threatens it.

Abbott ’21 [Alden Abbott, Paul Redmond Michel, Adam Mossoff, Kristen Jakobsen Osenga, and Brian O’Shaughnessy; March 10; the Federal Trade Commission’s General Counsel (2018-2021), adjunct professor at George Mason University, J.D. from Harvard Law School, M.A. in economics from Georgetown University; Retired Chief Judge and United States Circuit Judge of the United States Court of Appeals for the Federal Circuit; Law Professor at George Mason University; Law Professor at the University of Richmond; chair of Dinsmore’s IP Transactions and Licensing Group; the Regulatory Transparency Project, “Aligning Intellectual Property, Antitrust, and National Security Policy,” https://regproject.org/wp-content/uploads/Paper-Aligning-Intellectual-Property-Antitrust-and-National-Security-Policy.pdf]

The U.S. government has recognized that “5G is a critical strategic technology [such that] nations that master advanced communications technologies and ubiquitous connectivity will have a long-term economic and military advantage.”8 The U.S. has had a substantial technological edge over our military and intelligence rivals in foundational R&D for 5G and other next-generation technologies. U.S. companies have long been leaders in the development of previous generations of core mobile standards (2G, 3G, 4G, and LTE). This technological leadership has made it possible for U.S. companies to ensure the security and integrity of the hardware and software products that make up the backbone of the U.S. telecommunication systems. This leadership must continue for the U.S. government to more effectively anticipate potential security risks and take the necessary steps to protect national security.9

Despite this history of clear technological leadership, there are causes for concern. First, a very small number of U.S. companies have made the investments in the overwhelming majority of the R&D necessary to develop 5G.10 Historically, U.S. companies have heavily invested in R&D, which has propelled the U.S. into leadership positions in critical standard development organizations working on foundational next-generation technologies like 5G.11 U.S. companies like Qualcomm play a significant and important role in this process through innovation, patenting, and standard setting, but they are not alone in the global community of high-tech companies.12 Backed by their nations’ leadership, Chinese and Korean companies have also invested heavily in developing the core technologies for 5G.13

The willingness of U.S. companies to invest in R&D is threatened, however. The development of 5G is a bit like a race, with the companies who develop the best technology coming out ahead. While U.S. companies are savvy and talented competitors in this race, aggressive and unwarranted use of antitrust law by U.S. regulators, as well as by foreign antitrust authorities, threatens to put obstacles in these companies’ paths and hinder their ability to lead.

#### The pandemic unleashed a massive amount of business dynamism, only in the U.S.---it’ll be durable

-- U.S. dynamism is up because of policy support given to small business that wasn’t present in other G7 economies

Simeon Djankov 21, Policy Director, Financial Markets Group, London School of Economics; and Eva (Yiwen) Zhang, Researcher, Peterson Institute for International Economics, 3/3/21, “US business dynamism rises,” <https://voxeu.org/article/us-business-dynamism-rises>

In 2020, the creation of US startups shot up by 24% relative to the previous year. This is the largest annual increase since business statistics started being collected in the US. Some of this boom in entrepreneurial activity is accounted for by the migration of businesses to online activity.

This business dynamism is unexpected. Vox columns written in early 2020 (e.g. Baker et al. 2020, Coibion et al. 2020, Sedláček and Sterk 2020, Calvino et al. 2020) recorded steep falls in entrepreneurial activity across G7 economies. In a recent paper (Djankov and Zhang 2021), we show that such falls were indeed the norm across advanced economies at the end of 2020. The US is an exception, fuelled by the government assistance provided to small businesses.

The focus on new entry is warranted, as research in the US shows that young firms tend to grow faster than incumbents (Haltiwanger et al. 2013). Haltiwanger et al. (2017) document that startups account for about 40% of aggregate growth in total factor productivity, 50% of aggregate output growth, and 60% of aggregate employment growth. Another important benefit of entrepreneurship is the ability of new firms to increase competition, thus reducing mark-ups (Djankov et al. 2002).

Still, the positive impact of these entrants on long-term economic growth should be taken with a grain of salt, as research shows that firms born during recessions not only start smaller but also tend to stay smaller in future years, even when the economy recovers (Sedláček and Sterk 2017). Also, the crisis has reshaped the outlook for many sectors, more so than previous crises have. Firms and workers have invested in years’ worth of digital transformation in just a few months (Baldwin 2020). This transformation is likely to result in significant further churning among businesses in the months and years to come.

### Link Turn—1NC

#### Applying antitrust to FRAND suppresses a range of innovations across emerging tech sectors. Only preserving the scope of patent law secures US tech leadership.

Leih & Teece ’18 [Sohvi & David J; Assistant Professor, Loyola Marymount University; Thomas Tusher Professor of Global Business, Haas School of Business, University of California at Berkeley, and Chairman, Berkeley Research Group; May 2018; “Introduction: Antitrust, Standard Essential Patents, and the Fallacy of the Anticommons Tragedy: Legal and Industrial Policy Concerns”; <https://btlj.org/data/articles2017/vol32/32_4/Leih_web.pdf>; Berkeley Technology Law Journal, Vol. 32, Issue 4; accessed 10/13/21; TV]

At the turn of the millennium, David Teece noted that fundamental changes in the global economy were changing the basis of competitive advantage.' These changes strip away traditional sources of competitive differentiation and expose a new foundation for wealth creation: the development, astute deployment, and utilization of intangible assets, of which knowledge, capabilities, and intellectual property are the most significant.2

The development of markets for knowhow and intellectual property has broken the traditional nexus between tangible and intangible assets. Previously, the principal business model firms employed for extracting value from inventive and creative activities was to both create and commercialize new ideas and technology. Firms bundled ideas, inventions, and the results of creative activities into tangible objects and offered them for sale to capture value from the creative idea. In the case of music, for example, a creative entity might sell records or CDs. For quite some time, as intellectual property regimes have strengthened, it has been possible to specialize in what one did well-either the tangible objects or the abstract ideas. In the case of an "idea" generator, the creators and inventors can simply license their ideas to other entities that are better equipped to implement the idea.

A system of properly designed and adequately enforced IP rights benefits not simply the creative individuals, groups, and organizations that generate intangible assets, but also consumers. New technologies such as artificial intelligence, machine learning, and automation **are becoming increasingly important**. Soon, robots will make robots, more products will be 3D-printed, and robots will deliver services. The work of creative and inventive people is going to be even more salient to the United States economy in the future. 3 As such, it is incredibly important to properly protect intellectual property rights. Otherwise, the inventive and creative activities-the lifeblood of economies-will decline or, at a minimum, be put at risk. Rights over intangible property must not be second-class**.**

At this critical junction in the evolution of our society and the economy, if policymakers and courts reward the production of tangible goods while shortchanging intangibles, they will be out of step with technological progress and the march of civilization. Creative and inventive people may have to revert to making a living by producing tangible assets within large, vertically-integrated firms. Such firms take ideas, embed them in objects, and then move them from the laboratory to the market. If a failure to enforce intellectual property relegates creative innovators to low-wage activities, the development of highly innovative small- and medium-sized enterprises will be stunted because they will not have the resources, capabilities, or passion to vertically integrate. Instead, large-scale vertically integrated firms-that pay low wages and experience lackluster growth with only modest levels of innovation-will populate the landscape.

This special issue of Berkeley Technology Law Journal is based on a special symposium, wherein the authors expressed deep concern that some legal scholars and economists who engage in debates about the patent system and FRAND licensing appear unfamiliar with, or do not consider, the empirical evidence (or lack thereof) on patent holdups and patent thickets that allegedly stifle innovation. They have mounted attacks on intellectual property-patents in particular-but typically have not stated the implicit assumptions in their theories. These critics frequently assert that patent holders too often engage in holdup, charge too much for a license to patent rights, and generally hinder the system of innovation itself through patent thickets.4 These arguments have gained momentum and even impacted court opinions. Maureen Ohlhausen, as acting chair of the FTC, recently noted, "U.S. and international antitrust agencies have lost their way in recent interventions in standard setting space . . . [which] threatens to upset the balance between patent holders' rights and consumers' access to technology." 5 Makan Delrahim, the U.S. Assistant Attorney General for the Antitrust Division of the Department of Justice, would seem to agree.6

The situation echoes the concerns of famous economist John Maynard Keynes that those "in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back." 7 More recently, Columbia University economist Paul Romer identified a "disturbing blind spot" in economics and explained that "the trouble is not so much that macroeconomists say things that are inconsistent with the facts. The real trouble is that other economists do not care."8 He further noted that "an indifferent tolerance of obvious error is ever more corrosive to science than committed advocacy of error." 9

Each contributor to this special issue is endeavoring not to fall into the trap Romer warned about. Indeed, reflecting similar concerns to Romer, our first contributor, Jonathan M. Barnett asks: "Has the Academy Led Patent Law Astray?"10 He questions the allegedly adverse effects of a strong patent system and examines the disconnect between theory and evidence on this subject." Bartnett determines that the assumptions underlying patent holdup and stacking models strip away the reality of sophisticated repeat players and standards evolution.1 2 He finds little evidence of thickets or holdup and stacking effects.' 3 He thus revisits the theoretical models used to support predictions of transactional blockages and harm to innovation.14

Barnett is also deeply critical of ongoing and proposed restrictions on injunctions." His assessment is that there are substantial social costs in substituting liability rules for property rules.1 6 He also notes that the patent ambush literature received widespread endorsement after early Rambus cases.' 7 Indeed, the FTC case against Rambus became the "poster child for patent holdup" even though, ironically, the "government lost . .. twice."" Barnett concludes that given Rambus's vindication, this is "not an especially compelling illustration of patent holdup."' 9

The predicament described resonates well with Romer's concerns mentioned earlier. Too many scholars have an "indifferent tolerance of obvious error." 20 Barnett points out that "the conceptual triplet" of stacking, holdup, and thickets, has "been presented in the context of stylized theoretical settings" but has never "matured into descriptively reliable statements about real-world markets." 2 1 He asserts that "remarkably, all available empirical evidence fails to confirm these ... theories." 22 The above are only a selection of Barnett's trenchant comments and conclusions. We intend them to pique the reader's interest in his Article and his call for courts and regulators to revisit recent decisions displacing property rules with liability rule protections.

Richard A. Epstein and Kayvan B. Noroozi follow Barnett's analysis with a more specific focus on standards-essential patents (SEPs). 2 3 They focus on similar issues to Barnett, but their Article is more specific to FRAND and mobile phones. They are highly cognizant of the changing economic landscape and the importance of intellectual property rights to the advancement of an emerging knowledge economy, where objects made by machines are ubiquitous and creative works generated by people are scarce. 24 Epstein and Noroozi are also acutely aware of how a wellfunctioning system of intellectual property and FRAND licensing has powered the highly dynamic mobile phone industry. 25 They recognize that the European Telecommunications Standards Institute (ETSI) and the FRAND framework support the powerful technologies underlying standards development that have enabled establishment and growth of a global mobile telecommunications industry.26

Epstein and Noroozi remind readers that standards are not just about interoperability rules. They note that new technologies enable new standards and orders-of-magnitude improvement in upload and download speeds on a limited spectrum, in addition to enhancing many other aspects of wireless performance. Innovators and implementers work together in standards development organizations (SDOs) to select new enabling technologies developed and tested by members and others. The best technologies get incorporated into new standards that are then made available to all, subject to a FRAND royalty contract. Implementers are third-party beneficiaries of the FRAND licensing contract. Epstein and Noroozi acknowledge that ETSI, the leading SDO in mobile phone technology, is the manifestation of what distinguished patent law expert Professor Robert Merges calls "an institution that lowers the cost of IPR exchange." 27

Epstein and Noroozi further contend that the historic high performance of the intellectual property rights (IPR) marketplace is put at risk once the bargain between innovator and implementer is revised or reinterpreted in ways that shortchange innovators upstream or downstream.28 They point to the first ETSI IPR rules of 1992, which included Most Favored Nation (MFN) and other provisions unpalatable to upstream innovators. 29 In 1994, when ETSI adopted a balanced approach that respected the patent rights of contributors to the SDO, innovation and concomitant standards development gained momentum. Epstein and Noroozi do recognize, however, that the balance that ETSI intended is not spelled out in detail but is left to the parties to negotiate.30 They note that in the context of deep heterogeneity of circumstances facing licensors and licensees, the nature of the exchange is "deliberately vague," allowing room for negotiation. 3 ' They see this as a virtue and not as "an invitation for courts to fill in the gaps or clarify the boundaries . . . ."32

Epstein and Noroozi draw attention to "an influential body of literature, led by Mark Lemley and Carl Shapiro, [that] has ... focused primarily on the risk of 'patent holdup' . . . while paying short shrift to the correlative risk of 'patent holdout' ... . They also note that "the principal focus of Lemley and Shapiro's work has been to discourage the availability of injunctions in the context of products that practice multiple patents . .. ."34 Citing to work by Robert Merges, Epstein and Noroozi maintain that "strong property rights rule[s] for patents facilitates contractual solutions ... whereas liability rules 'work against the flexible, voluntary institutions that are formed to overcome the costs faced by transactors'."35 They are critical of eBay, Inc. v. MercExchange, L.L. C.36 for having "jettisoned that subtle and flexible mixed remedial approach and instead reverted to a stark and simplistic opposition between 'property rules' and 'liability rules."' 37

Epstein and Noroozi vividly attack the "royalty stacking" paradigm and view it as nothing more than a "horror fiction." 38 They are likewise critical of recent court decisions that they see eroding the FRAND framework, including Apple v. Motorola39 and Microsoft v. Motorola.40 They worry that, under Microsoft, perhaps one can no longer make an offer outside of the FRAND range even as an opening bid; it must somehow be FRAND from the outset. Implementers, of course, like to make counteroffers; yet, the net effects of Microsoft and Apple are that "innovators are pressured to begin at FRAND, and only go lower." 4 1 Epstein and Noroozi raise concerns of a slippery slope under the nondiscriminatory component of FRAND, with each implementer trying to convert the nondiscriminatory term into a de facto most-favored licensee clause. The authors' concern appears to be that under the specter of Microsoft, Apple, and government antitrust intervention into leveraging activities, there is a drift towards litigation and a movement away from negotiated resolutions of licensing issues.42 The primary culprit is a misallocation of rights, as implementers in the United States now face virtually no credible injunction risk. Meanwhile, breach of contract, and breach of duty of good faith and fair dealing claims based on opening offers alone threaten upstream innovators.43

### 1NC – AT: Military

#### No military applications to date

Michael C. Horowitz 18, professor of political science and the associate director of Perry World House at the University of Pennsylvania. , May, "Artificial Intelligence, International Competition, and the Balance of Power – Texas National Security Review," Texas National Security Review, https://tnsr.org/2018/05/artificial-intelligence-international-competition-and-the-balance-of-power/

However, it is not yet clear how the invention of specific AI applications will translate into military power. Despite continuing investment, efforts to integrate AI technologies into militaries have been limited.39 Project Maven is the first activity of an “Algorithmic Warfare” initiative in the U.S. military designed to harness the potential of AI and translate it into usable military capabilities. Still, many investments in the United States and elsewhere are in early stages. As Missy L. Cummings writes: Autonomous ground vehicles such as tanks and transport vehicles are in development worldwide, as are autonomous underwater vehicles. In almost all cases, however, the agencies developing these technologies are struggling to make the leap from development to operational implementation.40 It is important to distinguish these potential technological innovations from military innovations. While military innovations are often linked to changes in technology,41 it is not always the case. Military innovations are significant changes in organizational behavior and ways that a military fights that are designed to increase its ability to effectively translate capabilities into power.42 The use of aircraft carriers as mobile airfields by the United States and Japan is a prototypical example. While AI could potentially enable a number of military innovations, it is not a military innovation itself, and no applications of AI have been used in ways that would count as a military innovation at this point. Because AI research and technology are still in their early stages, usage of AI in warfare is not even yet analogous to the first use of the tank in World War I, let alone effective use of combined arms warfare by the Germans in World War II (the military innovation now known as blitzkrieg). This limits analyses about how narrow AI might one day affect the balance of power and international politics. Most research on technology and international politics focuses on specific, mature technologies, such as nuclear weapons, or on military innovations.43 Since AI is at an early stage, examining it requires adapting existing theories about military technology and military innovation.44

#### No China/Russia war impacts – alliances and nuclear deterrence check.

#### No transition wars – new tech doesn’t change balance of power.

Lanoszka 19 – Alexander Lanoszka, Political Science Professor at the University of Waterloo. [How Emerging Technologies Might Affect Baltic Security, in *The Return of Deterrence: Credibility and Capabilities in a New Era*, eds. William G. Braun III, Stéfanie von Hlatky, and Kim Richard Nossal]

The Baltic Countries and Emerging Technologies

So where does this leave the Baltic countries? The discussion above suggests that in the foreseeable these emerging technologies will marginally enhance Russia’s military capabilities while the United States will gradually and cautiously adopt them. The local balance of power will remain largely static. For one, Russia already enjoys a massive military advantage over the Baltic countries, with or without autonomous weapons. For another, these emerging technologies do not alter how the Baltic countries receive an Article 5 commitment from their NATO partners. Any military activity that triggers this clause of the Washington Treaty could lead to escalatory dynamics that Russia would prefer to avoid. As for the Baltic countries, capabilities remain underdeveloped. Having already embraced digital technologies for its governance, Estonia has been the most advanced of the three Baltic countries in thinking about AI. In March 2018 the Estonian government announced the development of a national strategy towards AI.53 It will also contemplate how to address AI in its legal structures, with one subject being the provision of a special legal status conferred upon robots.

Military robotics and AI could be leveraged for various purposes in the Baltic context. In the long-term, military robots might compensate for the lack of available manpower that Estonia, Latvia, and Lithuania might face in the future due to high emigration, low birthrates, and low immigration. As Mick Ryan argues, “it is possible that a technologically advanced country with a smaller population could build a significant advantage using AI-based military systems and fielding large numbers of robotic warfighters.”54 Such systems — redolent of many Hollywood films — remain a distant possibility. In the medium term, military robotics and AI could serve logistical as well as intelligence, surveillance, and reconnaissance (ISR) purposes.

In the more immediate term, however, AI would be most useful for early warning, especially with respect to the monitoring of social media, energy flows, or even encrypted communications between Russia and sources inside the Baltic countries. Consider how AI could help bolster Baltic defences in such a way as to defeat, if not to prevent, some of the tactics that Russia used against Ukraine in its annexation of Crimea in early 2014. Recall that so-called “little green men” — military personnel bearing no insignia or other identifying marks — suddenly appeared in Crimea manning checkpoints, clearing areas, and intimidating members of the local population in the run-up to the independence referendum that Russia used to lend legitimacy to its effort. The Baltic countries fear that Russia might attempt something similar against them, not least because — especially in the case of Estonia and Latvia — their populations contain Russian-speakers who may sympathize with the Kremlin enough to do its bidding.55 One measure that they have taken is to practice retaking sites from paramilitary forces of unknown origin.56

AI is useful for such situations because the Baltic countries have home-field advantage. As such, they can amass data on certain environments and sites most at risk of being targeted by Russia. Such data could thus be used to understand regular patterns of behaviour of individual contained within those environments, thereby offering earlier detection and warning in the event that something untoward or irregular is happening. Of course, this technology is not impervious to countermeasures. Algorithms could be vulnerable to a battery of malicious queries by adversaries, leading those very algorithms to make faulty or bad predictions.57

As for 3D printing, the Baltic countries could benefit in at least two ways. To begin with, observers believe that because they face such a massive imbalance of power, the Baltic countries should not prepare their armed forces for fighting set-piece battles with the Russian military. Instead, they should prepare to wage an insurgency campaign designed to make themselves difficult to swallow and to occupy.58 Because 3D printing might reduce supply chains, violent organizations may be able to make their own weapons or weapons parts. 3D printed guns have so far proven to be unreliable, but as one Deloitte report warns, 3D printing “can help terrorist groups not only acquire new weapons or capabilities, but also allow them to do so more rapidly and stealthily than before, across a wider range of locations.”59 This can apply equally to insurgent groups, with such capabilities being homemade firearms and improvised explosive devices. 3D printers are not impervious to countermeasures, however. A RAND study cautions that 3D printers — if they are connected to the global internet — can be susceptible to sabotage if a malicious actor hacks into the system and encodes a flaw into the designs of a product that would be printed.60 Moreover, if Russia could mass firepower and saturate hostile environments by using killer robots, then the advantage gained from 3D printing weapons could be offset. Finally, 3D printing could allow forward deployed forces — like the NATO battlegroups stationed on Baltic territory as part of the alliance’s “Enhanced Forward Presence” — to buy more time before reinforcements arrive. They can replenish themselves “on the spot” without relying too much on supply chains and logistical tails. Such additional time could help if Russian aerial and naval assets located in Kaliningrad complicate NATO efforts to enter, and to move within, the theater of operations if war were to erupt.61

Conclusion  
Some security analysts argue that the introduction of emerging technologies on the battlefield will have a transformational impact on international security. Military robots, AI, and additive manufacturing (3Dprinting) could allow non-state or weak actors to level the playing field with more powerful countries. Yet the preceding discussion suggests that a more tentative attitude is appropriate. In the long-term, the impact of these technologies could be dramatic. However, in the foreseeable future at least, the changes generated by these technologies will be gradual, if not modest. Their significance for Baltic regional security will remain limited despite Russian investments in military robotics and AI. Nevertheless, AI holds some promise for the Baltic countries, especially if it enables them to improve their early warning capabilities so as to thwart “little green men” scenarios.

This essay offers some policy implications for NATO to consider. First, the United States, the Baltic countries, and their fellow allies should be mindful of how these emerging technologies might affect interoperability. If progress in robotics, AI, and 3D printing will be more evolutionary than revolutionary, then the development of these technologies could produce further capability gaps between the United States and its NATO allies. Buying American might help prevent a greater widening of those gaps, but European countries — especially those in the Baltic region — will need to invest in their own research and development (R&D) so that they can tailor these technologies to their own needs.62 Indeed, capability gaps could develop between the Baltic countries. Since Estonia may already be ahead of the curve, Latvia and Lithuania could find themselves lagging too far behind. Capability gaps could create gaps in coverage if AI has the potential for enhancing early warning.

Second, because AI draws on deep learning methods to improve prediction, more data would allow for a more robust understanding of trends and behaviour patterns. NATO’s new Baltic-focused regional command could provide a clearinghouse of the data drawn from individual allies. Of course, European allies have already agreed to a Declaration of Cooperation on AI in order to share information and to foster research and development links. Yet the regional command can focus on the peculiarities of the Baltic security economy and exploit economies of scale. This regional command can offset the risk of stove piping between the three NATO Centers of Excellence in the Baltic countries. The one in Riga focuses on strategic communications; the one in Tallinn addresses cyber security; and the one in Vilnius is dedicated to energy security. Although these centers of excellence should preserve their specialisations, they admittedly work on overlapping areas and AI is most effective when algorithms crunch the largest amount of relevant data possible. Indeed, another advantage of data sharing and aggregation is to reduce the possibility of bias and to improve the quality of algorithms.

Third, emerging technologies offer no “absolute weapon,” since countermeasures are possible. This could be both good news and bad news. For example, if Russia leans too heavily on military robotics, then it would face new problems that manned systems might not have to confront. Latvia has many forests, but it also has marshes and swamps like the Teiči State Reserve in its east. This terrain would already be difficult for military robots to overcome without further intervention. Russian RPAs might also be vulnerable to man-portable air-defence systems. If Russia comes to rely on AI for military purposes, then it might be susceptible to hacking and manipulation. NATO should also heed these issues. Hence the importance of regional cooperation: no one country should find itself a potential weak link that can be exploited.

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#### AFF has to change Sherman, Clayton, or FTCA

Kendall Kuntz 21, J.D. Candidate at The University of Maryland Francis King Carey School of Law, “Can the Courts and New Antitrust Laws Break Up Big Tech?,” 2/23/21, https://www.law.umaryland.edu/Programs-and-Impact/Business-Law/JBTLOnline/Break-Up-Big-Tech/

There are three core antitrust laws in effect today: the Sherman Act, the Clayton Act, and the Federal Trade Commission Act. These three antitrust laws attempt to protect market competition for the benefit of consumers. The Sherman Act outlaws monopolies and contracts that unreasonably restrain trade. The Clayton Act prohibits mergers and acquisitions that substantially lessen competition or create a monopoly. Lastly, the Federal Trade Commission Act bans “unfair methods of competition” and “unfair or deceptive acts or practices.” Antitrust laws are not established to punish success, but are focused on preventing anticompetitive effects, exclusionary practices, reduced consumer choice, and hindered innovation.

#### Antitrust cannot be regulation.

Babette Boliek 11, Associate Professor of Law at Pepperdine University School of Law, “FCC Regulation versus Antitrust: How Net Neutrality is Defining the Boundaries,” Boston College Law Review, Vol. 52, 2011, pg 1627-1686.

Jurisdiction over Internet access provision is not the first confrontation between these particular government agencies; in fact, they have clashed many times. 2 But it is the current iteration of the FCC's "net neutrality" regulations that has generated the latest contest. Roughly defined, net neutrality encompasses principles of commercial Internet access that include equal treatment and delivery of all Internet applications and content.3 For some, net neutrality stands further for the proposition that Internet access operators should not be permitted to provide different qualities of service for certain application providers (e.g., guaranteed speeds of transmission), even if those application providers can freely choose their desired quality of service. 4 Net neutrality has reinvigorated what may be described as an underlying interagency tug of war that reaches deep within, and far beyond, the communications industry.

Although the two regimes share a commonality of purpose-to protect consumers and to promote allocative efficiencies in production-the two have quite distinct, predominately opposing, means of securing social benefits. As Justice Stephen Breyer stated when serving as a judge on the U.S. Court of Appeals for the First Circuit, although regulation and the antitrust laws "typically aim at similar goals-i.e., low and economically efficient prices, innovation, and efficient production methods" -regulation looks to achieve these goals directly "through rules and regulations; [but] antitrust seeks to achieve them indirectly by promoting and preserving a process that tends to bring them about."5 The battle between these two regimes may be broadly summarized in a single issue thusly: in the face of the industry-specific regulator, what is (or what should be) the role of antitrust law?6

Antitrust law preserves the process of competition across all industries by condemning anticompetitive conduct when it occurs. In contrast, industrial regulation by its nature is a public declaration that, in a given industry, market forces are too weak or underdeveloped to produce the consumer benefits that are realized in competitive marketsregulated industries are carved out from the rest of the economy and are subject to proactive, regulatory intervention that goes above and beyond antitrust enforcement measures.7 Not surprisingly, regulatory agencies were historically created as substitutes for market forces in the few markets that, by the nature of the product or technology, were natural monopolies or severely prone to monopoly.8 In the vast major ity of markets, however, the antitrust law is the default government control, designed to supplement market forces to inhibit or prevent the growth of monopoly.

Again, although the goals of the two regimes may be similar, the means by which each can achieve those goals are in opposition. Therefore, the threshold determination of which industries are to be singled out for industry-specific regulation, and to what degree, is of vital importance as it simultaneously determines the predominance of the regulator versus the antitrust authority in securing the social good.

#### Overly broad definitions of regulation distort literature and outcomes. Regulation and antitrust are clearly distinct.

Mariateresa Maggiolino 15, Associate Professor of Commercial Law at Bocconi University, “The regulatory breakthrough of competition law: definitions and worries,” Chapter 1 in *Competition Law as Regulation*, 2015, pages 3-26.

As a consequence, our current perception of economic regulation cannot be anything but wide and far-reaching21 – so wide and farreaching that even competition law can be soundly characterized as a piece of economic regulation. For instance, it can be deemed as a market-harnessing mechanism that, in the interest of the public, realizes a form of legal control on businesses.22 Thus, to argue that current competition law is today taking the shape of a piece of economic regulation does not make much sense. In order to talk about ‘the regulatory breakthrough’ of competition law, we need to put aside any description of what happened in the de-regulation era, as well as any resulting broad and multiform notion of economic regulation. We need to consider a narrower, more specific and detailed conceptualization – in fact, a historically determined conceptualization – of what economic regulation is.

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2.2 Competition Law as a Liquid Concept Notwithstanding the few US and EU provisions that directly associate competition law with anticompetitive arrangements and monopolistic conduct, our conception of what competition law is has changed over time according to the different goals that policy makers and scholars have assigned to it.23 Think, for example, of the rules applied to monopolistic conduct. During different periods, both US courts and EU antitrust institutions have interpreted and enforced them as if competition law was called to: (i) protect small businesses against the ‘dictatorship’ of big, concentrated and vertically integrated businesses; (ii) ensure fairness, justice, equity and redistribution; (iii) guarantee the process of competition; (iv) preserve economic welfare; and, in the sole case of the European Union, (v) support the creation of the Single Market.24 More generally, over the past fifty years or so antitrust scholars and practitioners have been divided between those who think that competition law can be used aggressively to achieve perfectly competitive markets and those who believe that, in practice, competition law can make only a modest contribution to the goal of protecting effective competition.25 Indeed, competition law provisions are so flexible and open-ended that they can mirror – and indeed have mirrored – the cultural insights as well as the political concerns and values of our social and political communities.26 For example, the transatlantic past preference for the welfare of small businesses (and, hence, for dominant firms’ rivals) was fed by the laissez faire alarm about bigness as such, the economic misconception that good business performances rest only with non-concentrated markets, and by the concern that economic power concentration would impair free markets and democracy.27 Likewise, the currently dominant idea according to which competition law consists of a set of legal rules that aims at preventing those business practices that may harm economic welfare – never mind whether total or consumer welfare28 – can be traced back to the neoliberal programme that the Chicago School embraced in the 1970s.29 In sum, competition law is a liquid concept. Therefore, in order to conceptualize the regulatory breakthrough of current competition law we must, first, assume that there exists a form of competition law – perhaps just a theoretical one – whose shape has nothing to do with a piece of economic regulation, and, second, verify that the shape of current competition law is taking on some regulatory contours. Further, if we want to explain the alarm that this regulatory transformation of competition law is producing, we must also show whether and how competition law loses something important when it is poured into a ‘regulatory container’3. THE POSSIBLE REGULATORY CONTOURS OF COMPETITION LAW Behavioural and social phenomena are often understood ‘in terms of a purposeful selection of facts from a far wider range of ways of looking at things’.30 Therefore, in order to grasp the terms under which competition law can become a regulatory enterprise – or a more regulatory enterprise – the following paragraphs go to the antipodes. They briefly consider and compare two extreme species of economic regulation and competition law, that is to say: (i) those sector-specific, rate-and-entry pieces of economic regulation that the US government actually ‘enforced’ in the United States until the end of the 1960s; and (ii) the notion of competition law that the Chicago School ‘theorized’ at the beginning of the 1970s. Indeed, these heterogeneous examples of economic regulation and competition law are optimal ‘sparring partners’ to reveal the possible lines along which competition law can assimilate to, or differentiate itself from, a piece of economic regulation. 3.1 Government ‘Actionism’ and Sector-Specific, Rate-and-Entry Regulations Since the second half of the 19th century and, in particular, for the period from the 1930s to the 1970s, in the United States the term ‘economic regulation’ was often used to denote what we today call command and control regimes.31 By using rigid rules backed by administrative enforcement and penal sanctions, independent governmental agencies presided over firms’ market actions in many sectors, such as trucking, airlines, telephone services, electricity, radio, television and natural gas. These agencies could prohibit certain forms of conduct, but also demand some positive actions by, say, prescribing the goods and services to be rendered, indicating the market to be served, deciding when plants needed to be built or modernized or determining how much should be invested in developing new technologies. Furthermore, those independent agencies could lay down conditions for entry into a sector, by determining which firms or individuals (or types thereof) were allowed to engage in which activities, and by controlling not only the quality of a production technique or of a service, but also the allocation of input and output, as well as the prices charged to consumers, or the profits made by enterprises. In brief, by the end of the 1960s the regulatory programmes implemented in the United States required independent authorities to act for a better future – i.e. to promote economic welfare, economic growth and the public interest – by imposing on firms what conduct to undertake and by taking in advance manifold detailed decisions on the market equilibria that these independent authorities believed were to be achieved. These programmes were made up of proscriptions as well as prescriptions, whereby public agencies were entitled to fully decide, manage and control private affairs.32 3.2 Neoliberalism and Chicagoan Conception of Competition Law At the beginning of the 1970s, the Chicagoan conception of competition law was totally defiant of government ‘actionism’. Because of its support for neoliberalism, the Chicago School called for the abolition of competition law, by endorsing full faith in the automatic free-market system it maintained that the government was the problem and not the solution. Then, if competition law was to be somehow tolerated, antitrust enforcers were to play a very residual role. They had to prohibit the sole business practices that harmed the competitive status quo, i.e. that produced a negative impact on the ‘natural functioning’ of the market.33 Further, enforcers had to identify the ‘natural functioning’ of the market by looking at the performance of total welfare, i.e. in full accordance with the main teachings of mainstream economics,34 and without pandering to political ideals or specific interests. In addition, and here, too, in order to limit government ‘actionism’, the Chicago School wanted antitrust enforcers to intervene only when there was no risk of making false positive mistakes. Therefore, they had to take their ‘hands off’ of any case, such as the monopolization cases, where the alleged harmful effects were somehow questionable and speculative. Also, just to control the negative consequences that could follow a wrong intervention, their remedies had to consist in mere cease-and-desist orders and injunctions,35 as the traditional US model of private enforcement envisaged.36 In brief, the overall conceptualization that the Chicago School made of competition law was thought to limit as much as possible the interference of public powers in private affairs. The neoliberal programme, indeed, assumed that the market mechanism made up of preferences, choices, transactions and contracts was alone capable of guaranteeing economic welfare, individuals’ self-determination and the aggregate sum of subjective value satisfactions.3 3.3 So Far, So Close In the light of the above terms of comparison, we can elicit many of the conditions under which the shape of competition law can acquire some regulatory contours. In general, the ‘regulatory metamorphosis’ of competition law happens – or starts happening – when competition law changes its goals, that is to say, when it does not limit itself to protecting total welfare, but pursues political and social aims, or even an economic goal other than the mere protection of the market’s ‘natural functioning’. For example, antitrust law may work to set the stage for better market equilibria and for higher levels of competition – it can work to maximize total and/or consumer welfare. In the latter scenario, then, antitrust law changes for another reason – because it modifies its targets. It focuses not only on those business practices that can harm total welfare, but also on the structure of the markets at stake, on the existing distribution of incentives and legal entitlements, on the spread of information and on business practices that do not maximize total and consumer welfare.38 In other words, a form of competition law that pursues different goals also puts the spotlight on different economic variables. When antitrust enforcers modify their targets, they accordingly use different tools and approaches – they impose not only bans, but also positive obligations establishing what economic agents should do in order to set the stage for better market equilibria.39 They abandon a mere ex post, backward-looking and facts-based attitude focused on the protection and the restoration of the status quo, to endorse a more ex ante, forward-looking and theory-laden position aimed at fostering market development.40 In brief, competition law may experience a regulatory breakthrough as long as it moves away from the minimalist archetype of the Chicago School – away from its goals, targets, tools and approaches. Or, at least, this is the ‘theoretical framework’ into which a regulatory transformation of competition law can be inserted. 4. THE TERMS OF THE PRESENT ‘REGULATORY METAMORPHOSIS’ OF COMPETITION LAW The above theoretical map of what might give a regulatory mould to competition law does not necessarily mean that such a transformation is actually taking place. Indeed, the mere existence of this theoretical map does not necessarily imply that this transformation has ever taken place – the Chicagoan notion of antitrust law is still influencing the US and EU practice, but it has never been fully endorsed, especially in the European Union. Therefore, one could argue that competition law has always been a sort of regulatory enterprise. However, this is not the place to make such a historic analysis. Moreover, this is not the place to discuss the many circumstances in which current US antitrust law and EU competition law look like a piece of economic regulation – the following chapters are devoted to thoughtful analysis of this twofold subject. Nevertheless, some clear facts suggest that today’s competition enforcers – and especially the EU Commission – are available to play a more active role in promoting the maximization of economic welfare (i.e. in pursuing a different goal), by affecting not only business conduct, but also market structures, the existing economic incentives, and the given legal entitlements (i.e. by targeting different variables). Hoping to set the stage for better market equilibria (i.e. endorsing a more ex ante approach), current antitrust enforcers are now more willing than they were in the past to ‘negotiate’ the content of their decisions (i.e. they are less subordinate to the results coming from the adversarial system) and to use sophisticated economic models41 to make educated guesses about future market developments (i.e. they are liable to be more theory-laden and to carry their assessment into the long run). Not by chance, indeed, do expressions such as ‘competition promotion’, ‘negotiated remedies’, ‘forward-looking decisions’, ‘market reorganization’ and ‘continuous monitoring’ belong to the vocabulary of today’s antitrust enforcers.42 For example, consider what the EU Commission does in duty-to-deal cases such as the Microsoft saga.43 In these cases, for the sake of what the Commission considers to be the public interest, it decides how to reshape property rights and distribute the incentives to compete and innovate among the players of the industries at stake. Thus, in duty-to-deal cases the Commission clearly acts as a regulator: it establishes where to drive markets on the basis of specific economic theories, such as the defensive leverage theory;44 it endorses a clear forward-looking perspective; and it imposes not only equitable relief and cease-and-desist orders, but also positive obligations impinging on structural variables. In so doing, the Commission takes into account the ‘industrial identities’ of the involved firms, that is to say, their history of meritorious competitive acts, whether they were previous state monopolists, or whether they deserve their market position or their intellectual property rights.45 In addition, consider the more frequent commitment decisions. They grant a great regulatory leeway to antitrust enforcers.46 Indeed, in issuing commitment decisions the EU Commission – not unlike the US agencies that adopt consent decrees – works as a mediator between the parties, knowing their diverse interests and facilitating the negotiation and conciliation of their opposite positions. Finally, do not forget that, according to some scholars, any antitrust agency or authority that adjudicates a case adopting the rule of reason is actually acting as a regulator that substitutes its economic evaluations for those of entrepreneurs. Namely, establishing whether a restriction is reasonable entails, inter alia, considering whether there could be a less restrictive alternative, that is to say, making an educated guess about how best to achieve a better market equilibrium: by using the option chosen by the entrepreneur or by using another option that the antitrust agency or authority envisages.47 In sum, there is room to argue that current competition law does not have the shape of the Chicago archetype. And this creates a sort of alarm. 5. THE REASSURING NATURE OF THE CHICAGO ARCHETYPE Probably, antitrust scholars are very fascinated by the Chicagoan notion of competition law because they were trained during the years of the Chicago bandwagon. Probably – and this is my personal belief – their diffidence towards a more ‘regulatory approach’ to competition law arises from the reassuring nature of Chicago antitrust, i.e. from the fact that the Chicago concept of competition law shelters – or seems to shelter – enforcers from the risk of enjoying too much discretion. Let me briefly elaborate the details of the argument. Basically, regulators enjoy a great leeway. They can establish (or interpret) what the public interest is and what rules could help to pursue it.48 Yet, information asymmetries as to present market scenarios, as well as limited knowledge as to possible and future market developments, inexorably affect regulators’ ability not only to identify what the optimal market equilibrium should be, but also to determine what changes to market structure, initial endowments and original entitlements should be continuously promoted so as to accommodate the dynamic achievement of this equilibrium. Therefore, regulators may make mistakes in defining (or interpreting) their goals and in elaborating and applying the rules that, over time, should allow these goals to be accomplished. In addition, the very same ignorance that increases the risk of making mistakes exposes regulators to another twofold risk – that of being manipulated and that of making value choices to the detriment of individuals’ self-determination. For example, technocrats themselves may try to influence the notion of public interest in order to preserve or expand their power and jurisdictional turf. In this way, they can deepen their intervention into the affairs of the regulated enterprises and control issues and firms more than necessary.49 Or, looking for better information to draw up and enforce their rules, regulators can be captured50 – they may fall under the spell of the regulatees and, thus, consider some rules to be in the public interest, although in fact these rules fulfil the interest of specific groups of firms.51 And even away from these species of manipulations, since regulators have no objective standard to establish what the public interest is and what rules could help in pursuing it, their decisions may, however, side with specific visions of the world. Their decisions are not neutral – they are value choices, at least partially. In contrast – and in a very reassuring way – the Chicago conception of competition law would have antitrust enforcers act like mere technicians who, by doing only what the economic technique tells them to do, can stay away from any form of discretion and are thus sheltered from mistakes, manipulations and conflicts of interests and values. Namely, suppose that the market is a cosmos – i.e. a ‘natural, spontaneous and necessary’ order governed by universal, unchangeable and objective rules that technicians may know and calculate.52 Assume, then, that economics is the domain of these rules – it is like a hard science that describes what the ‘natural’ functioning of the market is. In the light of these assumptions, as long as antitrust law ‘translates’ these economic rules into the legal realm – as the Chicago School wanted it to do – the risk of making mistakes is low and there is little room for manipulations, conflicts of interests and diverse political views.53 In other words, as long as antitrust enforcers pursue the protection of total welfare by forbidding the sole business practices that mainstream economics say harm it, their approach and tools are so tailored to the evil to be removed that they are little suited for anything else. True, one could argue that economics does not always supply definitive answers to be easily translated into the antitrust realm. Consider, for example, the case of antitrust decisions dealing with the duration and scope of monopolies and IPRs. Economics does not know where to strike the proper inter-temporal balance between creating and disseminating the incentives to compete and innovate. In such a situation, hence, the lack of an economic rule to be translated into the legal field could open the gate to mistakes, manipulations and value choices. To rebut this argument the Chicago School would argue that in those cases antitrust enforcers must take their hands off any negotiation or any other intrusive decision envisaging what the public interest could be. In the absence of any clear-cut economic rule to be translated into the antitrust realm, leaving things as they are, leaving markets free to polish themselves, should be the best way to limit the risks of prosecuting harmless conduct, of being at the mercy of a specific group of interests and of espousing a particular vision of the world. In brief, the less, the better. By conditioning antitrust enforcement to what mainstream economics teaches, and by supporting the ‘hands-off approach’ any time economics is not capable of formulating precise economic rules to qualify business behaviour, the Chicago archetype claims to limit as much as possible enforcers’ discretion and, as a consequence, the risks of making mistakes, of being manipulated, and of making value choices. In other words, the more competition law limits itself to replicate the most certain teachings of economics, the more it becomes a safe game – i.e. a matter of ‘truth’ – and this is something that no form of regulation, and no form of a more regulatory approach to competition law, can ever be.54 Yet, this narrative is misleading. 6. DEBUNKING THE REASSURING NATURE OF THE CHICAGO ARCHETYPE It may actually happen – as the Chicago School maintains – that some economic rules (and their layman rehashes) offer a true description of how markets work. In this case, anchoring antitrust law to economics really limits enforcers’ discretion as well as the consequences that this discretion is said to bring about in terms of mistakes, manipulations and value choices. Yet, even setting aside the case of economic rules that are too sophisticated to offer a realistic description of how competition develops,55 there are economic rules that, though correct and sound, depend so much on some detailed hypotheses that they do not offer one single applicable conclusion for the specific antitrust case at stake.56 Moreover, as seen above in the discussion about the duration and scope of monopolies and IPRs, there are cases where no economic rule can definitively establish what the ‘natural functioning’ of the market is. Hence, in these two cases, any antitrust decision translating one of those economic rules into the legal field is no longer a matter of pure technique.57 When there is no single and definitive economic rule to implement, antitrust enforcers also enjoy discretion – an amount of discretion that, notably, even the Chicagoan ‘hands-off approach’ cannot manage in a technical way. Indeed, the Chicagoan ‘hands-off approach’ shelters the system from manipulation because it does not leave any room for negotiation. Yet, it is not error-free, because if the natural course of the market is unknown, leaving things as they are can be as wrong as changing them. Moreover, the ‘hands-off approach’ is not value-free for at least two reasons. First, assuming that false positive mistakes are more serious than false negative mistakes means siding with the (neoliberal) belief that markets can refine themselves better than any government action can. Second, when dealing with a specific case, leaving things as they are may mean siding with specific interests and values – those interests and values that the particular status quo at stake reflects. For example, the choice not to impose a duty to deal on monopolists holding IPRs endorses two questionable theses – that judges and antitrust administrative authorities cannot second guess (IP) legislators’ choices, and that the overall level of innovation increases leaving the lead to dominant IP holders rather than to tiny followers. Besides, to test the neutrality claim of the Chicago School against more radical observations,58 it must be acknowledged that, as such, the ‘existing competitive status quo’ that Chicagoan competition law is intended to protect (in this case, by using the ‘hands-off approach’) is not neutral – it does reflect a mixture of value choices and political decisions. Indeed, competitive equilibrium is not simply ‘given’, like flowers and electromagnetic forces may be. Each competitive equilibrium results from the combination of many building blocks, such as individual preferences and the willingness to pay,59 which are determined in large part by the original distribution of wealth and legal entitlements that, in turn, result from many political choices, social pressures, and legal rules.60 Therefore, it cannot be neglected that markets move from, and result in, scenarios that are not value-free and neutral.61 As a consequence, if the competitive status quo is not neutral, a fortiori, the Chicagoan decision not to modify it is likewise not neutral. The latter is a political choice – to say the least, it is a conservative choice – that, as such, must submit to comparison with alternative options, i.e. with other, more progressive approaches.62 To be sure, the Chicago conception of competition law may well choose to protect the status quo without paying any attention to the possibility of changing it. In addition it may also choose – as is commonly recalled – to say nothing about the ways prosperity is used or distributed, arguing that those are matters for other pieces of law. Yet, in doing so, the Chicago notion of competition law cannot hide the political value of its choices. Notwithstanding the ostensibly neutral and technical set of principles that it uses, the foundations of the Chicago approach are politically determined. More, we cannot believe that these choices are more neutral than the ones underpinning some pieces of economic regulations. Hence, since the reassuring nature of the Chicago conception of competition law is questionable, we cannot use it to justify our alarm towards the alleged regulatory breakthrough of contemporary competition law.

7. CONCLUSION

As often happens when we are confronted with complex social phenomena, the boundaries of the definitions that we use to address those phenomena are blurred. Therefore, in order to understand what we really mean when we talk about the ‘regulatory breakthrough’ of present competition law, we need to clarify the exact meaning of the terms ‘economic regulation’ and ‘competition law’. This chapter has explored the scope of these two labels and, using two specific forms of economic regulation and competition law as benchmarks, developed two theses. First: we do not err if we argue that competition law acquires ‘regulatory contours’ whenever its goals, targets, tools and approaches distance themselves from those of the Chicago archetype. Second: the main concerns about this ‘regulatory breakthrough’ are rooted in a fallacy – that, in contrast with economic regulation and any sort of regulatory conception of competition law, only the Chicago archetype guarantees neutrality. In fact, the chapter has shown that the Chicagoan theorization of competition law as well as the Chicagoan recipes to support it are value-laden, just as are any other kind of competition law and any example of economic regulation.

#### CP avoids perception of economy-wide spillover. It’s the opposite of the plan--it resolves fears by signaling that regulated industries are the exception.

Dr. Babette E.L. Boliek 14, Ph.D. in Economics from the University of California, Davis, J.D. from the Columbia University School of Law, Professor of Law at Pepperdine University, “Antitrust, Regulation, and the "New" Rules of Sports Telecasts”, Hastings Law Journal, 65 Hastings L.J. 501, February 2014, Lexis

I. The Current Relationship of Antitrust, Regulation, and Sports Broadcast

As noted, antitrust and industry-specific regulation are two distinct means to achieve much the same social goal - to protect consumers and encourage efficiencies in production and distribution. 38 However, the two regimes are by no means interchangeable, and the choice between them is itself imbued with certain social policy preferences. 39

[FOOTNOTE] As then-Chief Judge Stephen Breyer stated, while regulation and the antitrust laws "typically aim at similar goals - i.e., low and economically efficient prices, innovation, and efficient production methods," regulation looks to achieve these goals directly "through rules and regulations; [but] antitrust seeks to achieve them indirectly by promoting and preserving a process that tends to bring them about." Town of Concord, Mass. v. Bos. Edison Co., 915 F.2d 17, 22 (1st. Cir. 1990). [END FOOTNOTE]

Antitrust law is an enforcement regime that preserves competition across all private industries by condemning anticompetitive conduct only after it occurs. 40 In contrast, industrial regulation is inherently a social admission that, in a given industry, market forces are too weak to produce the consumer benefits that are realized in competitive markets. 41 Therefore, regulated industries are an exception to the economy at large and are subject to preemptive, regulatory rule that may actively engineer industry conduct far beyond that permitted under antitrust law. 42

#### CP solves better---the latest systematic evidence proves that public R&D results in better innovation than the private sector---AND, no spending DA.

Jones 7-14-21 (Benjamin F. Jones, PhD (2003) in Economics from Massachusetts Institute of Technology, Gund Family Professor of Entrepreneurship and Professor of Strategy at the Kellogg School of Management at Northwestern University and research associate at the National Bureau of Economic Research, Senior Economist for Macroeconomics, White House from 2010-2011, 7-14-2021, “Science and Innovation: The Under-Fueled Engine of Prosperity,” Aspen Institute Economic Strategy Group, <https://www.kellogg.northwestern.edu/faculty/jones-ben/htm/Science%20and%20Innovation%20_%20Underfueled%20Engine%20of%20Prosperity.pdf>)

5. Conclusion

Science and innovation investments are central to the national interest. These investments can create higher standards of living, longer and healthier lives, and an increasingly competitive workforce. They can support national resilience in the face of crises, like the global pandemic, and they can sustain national leadership in the world, including on economic, political, and security dimensions. Given these potential benefits, this paper has considered whether the United States invests enough in science and innovation, and specifically whether greater public support is warranted. We have asked several related questions: What are the arguments for or against a public role in the science and innovation system? What is the evidence? How are we doing? What policy changes do we need?

A primary case for public action sees new ideas – the fruits of science and innovation -- as “public goods” that the private sector will underprovide. Meanwhile, skeptical perspectives emphasize the regularity of failed R&D efforts, doubt the capacity for successful public investment, and question the role of science and domain experts in driving practical and important advances. After laying out these different perspectives and illuminating them with examples, the paper turned to systematic evidence, including the very latest evidence. The conclusions from systematic evidence are clear. The social returns to R&D investments are enormous and greatly in excess of the private returns. Public investments in science appear closely aligned with public use, and domain experts are the primary drivers of breakthroughs in both science and marketplace innovation. In short, the U.S. science and innovation system as it stands delivers far more than its resource costs, and we underinvest in science and innovation to an enormous degree. For every $1 we invest, we conservatively receive $5 in benefit. Effectively, the public has at hand an extraordinary machine to benefit human progress and the national interest, yet we fail to use this machine anywhere close to its full capacity.

To meet the national interest, policy can adapt in first-order, high-return ways. This paper has emphasized three poles of action to reap the rewards: (1) scaling funding resources; (2) scaling the people pipeline into science and innovation careers; and (3) making diverse investments across the landscape of opportunities. These investments promise to raise our standard of living, accelerate progress against disease, increase the competitiveness of the American workforce, solve for national and global crises, and secure the nation’s leadership in the world.

#### Empirics prove – R&D is just as likely to catalyze competition as antitrust.

Kovacic ’20 [William E.; 2020; Global Competition Professor of Law and Policy, George Washington University Law School; George Mason Law Review, “Competition Policy Retrospective: The Formation of the United Launch Alliance and the Ascent of SpaceX,” vol. 27; KP]

A second timely aspect of a review of the ULA transaction is the light it sheds on the many forms of government intervention that constitute a nation's competition policy. The prosecution of antitrust cases is but one way by which governments can help foster competition and stimulate business rivalry.26

Footnote starts.

Economists R. Shyam Khemani and Mark Dutz have developed the distinction between "antitrust" and a broader notion of "competition policy." See R. Shyam Khemani &Mark A. Dutz, The Instruments of Competition Policy and Their Relevance for Economic Development, in REGULATORY POLICIES AND REFORM: A COMPARATIVE PERSPECTIVE 16 (Claudio R. Frischtak ed., 1995). Antitrust agencies have come to realize that, in executing their own mandates, it is valuable to complement a law enforcement program with the application of non-litigation tools such as advocacy before other government agencies, preparaing reports, and convening public hearings. See More Than Law Enforcement:TheFTC'sManyTools-AConversationwithTimMurisandBobPitofsky,72ANTITRUST L.]. 773, 777-78 (2005).

Footnote ends.

Perhaps most important, the ULA episode illustrates the power of public procurement policy-including the funding of private sector research and development and the acquisition of goods and services-to influence the course of competition. 27 A key part of the ULA story is how government agencies (first NASA and later the DOD) used their funding and purchasing decisions to facilitate entry into the space launch services market by SpaceX and other private firms.2' Through policies that can be correctly characterized as procompetitive, the government purchasers helped catalyze new entry that transformed a sector seemingly destined to be the province of two firms or a single survivor. NASA, in particular, experimented with a new business model to inject more rivalry into the launch services sector. The ULA experience provides inspiration to ask how government procurement policy could achieve similar results in other concentrated sectors of the US economy.

#### Arora evidence goes definitively neg---it says that university research is key and that it’s essential to find ways to diffuse it out of the lab, which only the CP solves---private sector doesn’t give the right financial incentives

Ashish 1ac Arora et al. 20, Senior Associate Dean for Strategy. Rex D. Adams Professor of Business Administration, Fuqua School of Business, Duke University; Sharon Belenzon, Professor, Strategy, Fuqua School of Business, Duke University. Research Associate, National Bureau of Economic Research; Andrea Patacconi, Professor, Strategy, Norwich Business School; Jungkyu Suh, PhD, Business, Duke University, "The Changing Structure of American Innovation: Some Cautionary Remarks for Economic Growth," Innovation Policy and the Economy, Vol. 20, 2020, NBER.

7 Conclusion

During the so-called Golden Age of American Capitalism, large corporate labs were important loci of research, and important sources of scientific and technical advances. At the start of the period, the university research sector was small (certainly compared to the current period) and uneven in quality. Over time, university research grew, bolstered by significant support from the federal government. This period also coincided with (and perhaps this was more than a coincidence) incumbent firms enjoying significant market power but restrained by aggressive anti-trust actions.

Despite the apparent successes, corporate research, and the large corporate labs in particular, fell out of favor with investors, and eventually, also with managers. The focus shifted to university research, and startups, often venture funded, that aimed to capitalize on the scientific and technical advances in university labs. Corporations turned to sourcing ideas and inventions from the outside, hoping to combine it with their downstream development and commercialization abilities.

These hopes have not been fully realized, at least not yet. Even as this division of innovative labor has progressed, so have the challenges it faces become more evident. University research is different from corporate research: it is less likely to be mission-driven. Its smaller scale and greater disciplinary focus mean that university research typically produces insights which then need further development and integration to produce commercializable inventions. This requirement of converting insight to product has proved more onerous and challenging than commonly appreciated.

It seems unlikely that corporate research will rediscover its glory days. The boost in employment of data scientists, machine learning experts, and even economists, in large firms would appear to prognosticate a different future. We disagree. For some time, quick wins from low-hanging fruit (such as optimizing auction or advertising formats) may cover up the problem, but the fundamental challenge of managing long-run research inside a for-profit corporation remains a formidable one. Put differently, although there are significant efficiency gains that companies have realized from hiring data scientists and economists, there are only a handful of cases of significantly new markets created from such efforts, and incumbent firms continue to rely on outside inventions to fuel their growth. In the longer run, therefore, university research will remain the principal source of new ideas for such inventions. And therefore the ongoing economic experiments of discovering efficient ways to translate scientific insights in universities into technical advances that eventually manifest in productivity growth will remain crucial to our future prosperity.

#### Government R&D can’t solve growth or innovation

Terence Kealey 21. Professor of clinical biochemistry at the University of Buckingham. "Federal Science Funding Won't Accomplish Anything the Private Sector Can't Do Better". Cato Institute. 6-16-2021. https://www.cato.org/commentary/federal-science-funding-wont-accomplish-anything-private-sector-cant-do-better

A bipartisan group led by Senate Majority Leader Chuck Schumer (D-N.Y.) wants to counter China with legislation to dramatically increase government funding of pure science (science that is mainly concerned with theory rather than practical applications). They call their bill the U.S. Innovation and Competition Act. But if they really want to spur innovation and competition, they should be trying to slash science subsidies, not increase them.

The most potent criticisms of the government funding of science have come from government agencies themselves. The first came in 1969 when the Office of the Director of Defense Research and Engineering analyzed 700 research “events” that had led to the development of 20 weapons systems—finding that only two of those events were in pure science.

Then the Congressional Budget Office (in both 1991 and 1998) and the Bureau of Labor Statistics (2007) reviewed the entire academic literature, finding that study after study showed that the research projects that governments funded had failed, on average, to generate profits: in contrast, the research projects that the private sector funded were, overall, highly profitable.

Finally, in 2003 the Organisation of Economic Cooperation and Development, on studying the growth rates of the 21 leading world economies between 1971 and 1998, found that whereas levels of privately funded R&D correlated strongly with national rates of economic growth, there was no positive impact on GDP per capita from publicly‐​funded research and development.

Government funding of science isn’t just ineffective; it crowds out private sector success. When the government subsidizes a company’s science, or when the government pays for a research program, that company or that program will benefit. But the economy at large will suffer, because scientists have been pulled out of the projects the market was trying to fund.

Many view government funding of science as a foregone conclusion. But while the federal government has long funded so‐​called “mission research,” such as the Coast Survey (1807), it didn’t start to fund pure science until 1950, when it established the National Science Foundation (NSF).

The blueprint for the NSF was provided by American engineer Vannevar Bush. In his “linear” or “pipeline” model, he proposed there were both military and market failures in pure science: Only if the government funded pure science would U.S. technology flourish. In the ensuing years, much federally funded research has proven him wrong.

This is a tough story to propagate because the vested interests are aligned. The universities and the scientists lobby for governments to give them money on their own terms; industry lobbies for subsidies; and governments enjoy distributing research money, as the Medicis once did to Galileo. But the data show that these schemes will not benefit the economy.

Advocates for government funding of science will point to the many good things it has helped produce, including the internet. Vast funds for research will indeed yield good things, but the government studies cited above show that the costs of that research merely equal the benefits. In stark contrast, the costs of private research are dwarfed by their benefits. The plural of anecdote is not data; and if we are to get policy right, we should look to systematic cost‐​benefit studies, not anecdotes.

After the Soviets launched Sputnik in 1957, the federal government hugely increased its funding of research. Yet rates of growth in U.S. GDP per capita did not rise, and rates of productivity growth actually fell. That implies that government funding of research crowded out more useful work

#### The plan IS the uncertainty that their evidence talks about---abruptly switches policy under a new president---their ev isn’t reverse causal.

1ac Syrett 19 [Timothy, partner at WilmerHale, is an intellectual property and antitrust litigator. “The FTC’s Qualcomm Case Reveals Concerning Divide with DOJ on Patent Hold-Up”. 6/28/19. https://www.ipwatchdog.com/2019/06/28/ftcs-qualcomm-case-reveals-concerning-divide-doj-patent-hold/id=110764/]

The DOJ’s turn away from its long-held position on the risks of patent hold-up is a cause for serious concern.

First, it is bad policy. In explaining the DOJ’s about-face, Delrahim has referred to a “so-called ‘hold-up’ problem in the context of SSOs” and contended that concerns with hold-up “rely on models devoid of economic or empirical evidence that hold-up is a real phenomenon.” But the DOJ’s prior recognition of the risks of patent hold-up was well supported.

U.S. courts have long recognized that SEPs pose a hold-up threat. In 2007, for example, the Third Circuit observed that “[t]o guard against anticompetitive patent hold-up, most [standards development organizations] require firms supplying essential technologies for inclusion in a prospective standard to commit to licensing their technologies on FRAND terms.” Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 313 (3d Cir. 2007). More recently, the Ninth Circuit explained that “[t]he development of standards . . . creates an opportunity for companies to engage in anti-competitive behavior” and that “[u]sing that standard-development leverage, the SEP holders are in a position to demand more for a license than the patented technology, had it not been adopted by the SSO, would be worth.” Microsoft Corp. v. Motorola, Inc., 795 F.3d 1024, 1031 (9th Cir. 2015); see also, e.g., Ericsson, Inc. v. D-Link Sys., Inc., 773 F.3d 1201, 1209 (Fed. Cir. 2014) (“SEPs pose two potential problems that could inhibit widespread adoption of the standard: patent hold-up and royalty stacking”).

As to the economics of patent hold-up, the DOJ observed in a 2015 business review letter that the “economic bargaining model underlying claims of hold-up has been studied extensively and applied to the standard-setting context,” citing scholarship dating back decades. That conclusion echoed the views of the DOJ and FTC in their 2007 report that patent hold-up is simply a “variant of the classic ‘hold-up problem’.” The DOJ also noted in its 2015 letter that “litigated cases demonstrate the potential for hold up when owners of RAND-encumbered standards-essential patents make royalty demands significantly above the adjudicated RAND rate” and provided examples where licensors’ demands were on the order of about 170 to 230 times what courts determined were RAND rates.

Recognition of the dangers of hold-up is thus well supported as a matter of law and economics. To be sure, if competitors collude in an SSO to fix the terms on which they will license technology, antitrust enforcement would be appropriate. But simply because one can envision the possibility of an alternative form of anticompetitive conduct relating to standard setting does not mean that the DOJ should simply ignore the well-documented existence of another form of harm.

Second, the DOJ’s abrupt shift away from over a decade of guidance on hold-up creates uncertainty for the many industries that rely on standards. While the shift in policy has been cast as being motivated by a concern for fostering innovation, it threatens to have the opposite effect. Companies planning investments in standardized products now face greater uncertainty about whether they can count on established rules, particularly as articulated in the DOJ’s business review letters, to safeguard their ability to license SEPs on FRAND terms.

#### It’s about costs! CP solves.

Morton 16 [Fiona Scott Morton, Theodore Nierenberg Professor at Yale School of Management. Carl Shapiro, Former Director of the Institute of Business and Economic Research at UC Berkeley, Professor of the Graduate School at the Haas School of Business and the Department of Economics at the University of California at Berkeley. “Patent Assertions: Are We Any Closer to Aligning Reward to Contribution?”. 2016. https://www.journals.uchicago.edu/doi/full/10.1086/684987#\_i22]

However, our overall conclusions regarding SEPs are more mixed. Policy and legal changes that have reduced the ability of SEP owners to engage in patent holdup appear to have stalled out, especially as regards reform of the IPR rules at SSOs other than the IEEE. If so, this could have important effects on innovation and efficiency. For example, the “Internet of Things” is a new and growing area where royalty stacking and patent holdup appear to be very real dangers. Devices of all sorts, from thermostats to railroad cars to refrigerators, are being given connectivity using standards developed by SSOs. The price of those chips, and whether the IP contained in them costs $5 or $0.50 or $0.005, will determine the nature of new applications and the rate of adoption.

Failure to prevent patent holdup relating to tomorrow’s information technology and communications standards is likely to cause significant social welfare loss in the years ahead. If new and more effective private solutions relating to standard setting do not emerge to promote innovation and protect consumers, antitrust enforcement is one of the only remaining remedies that seems feasible.

V. Conclusions

Over the past five years, the rewards provided to patent owners in the United States have become more closely matched with the value of the technology they contribute. When rewards and contributions are aligned, economic efficiency is promoted because investments into developing new technologies are commensurate with benefits. These changes have come from legislation, the federal courts, and policy statements and enforcement actions by regulators of various types. However, at this juncture, we see a substantial gap persisting between the ability of some patent owners to monetize their patents and the contributions provided by the technology underlying those patents. With the “Internet of Things” poised to create economic growth, this is a problem worthy of further research and policy attention.

## Case

#### Innovation is high because of large firms.

Thomas A. Lambert 20, Wall Chair in Corporate Law and Governance and Professor of Law at the University of Missouri School of Law, J.D. from the University of Chicago, “The Case Against Legislative Reform of U.S. Antitrust Doctrine,” University of Missouri School of Law Legal Studies Research Paper No. 2020-13, 05-12-2020, https://ssrn.com/abstract=3598601

Reduced Investment in Innovation? Proponents of reforming the antitrust laws have also pointed to reductions in the level of venture capital investment as indicative of a market power crisis in the U.S. Such investment slowed somewhat after 2015 (though it appears to have rebounded),27 and some venture capitalists have referred to a “kill zone” around dominant technology firms.28 The claim is that big technology firms either usurp small firms’ innovations or use their power over platforms to force smaller firms that need access to those platforms to sell out at a bargain price. Venture capitalists are less inclined to invest if such outcomes are likely, and innovation therefore suffers.

The evidence, however, does not support the view that lax U.S. antitrust is reducing innovation. Eleven of the top sixteen global spenders on research and development are U.S. firms,29 and six of those—Amazon, Alphabet, Intel, Microsoft, Apple, and Facebook—are “Big Tech” firms that have been accused of acting like monopolists. Moreover, the U.S. is home to half (178 of 356) of the world’s so-called “unicorn” companies—i.e., private companies valued at greater than $1 billion. China ranks second with 90, and all of Europe contains a fraction of that number. The U.S. also far outpaces Europe in terms of venture capital spending, with 10,777 investments in 2019 worth $136.5 billion compared to Europe’s 5,017 deals worth $36.3 billion. Finally, the fact that large American technology firms are purchasing smaller producers of complementary products or technologies in no way implies that the incentive to innovate is thereby reduced. Many start-ups are organized with the goal of being bought out by a larger firm; a buy-out option allows the initial investors in a company to enjoy a return on their investment without the company’s having to incur the significant cost of a public offering.

#### No resource wars.

Vestby ’18 [Vestby, Ida Rudolfsen, and Halvard Buhaug; 5-18-18; Doctoral Researcher at the Peace Research Institute Oslo; doctoral researcher at the Department of Peace and Conflict Research at Uppsala University and PRIO; Research Professor at the Peace Research Institute Oslo (PRIO); Professor of Political Science at the Norwegian University of Science and Technology (NTNU); and Associate Editor of the Journal of Peace Research and Political Geography; “Does hunger cause conflict?” Prio, https://blogs.prio.org/ClimateAndConflict/2018/05/does-hunger-cause-conflict/]

It is perhaps surprising, then, that there is little scholarly merit in the notion that a short-term reduction in access to food increases the probability that conflict will break out. This is because to start or participate in violent conflict requires people to have both the means and the will. Most people on the brink of starvation are not in the position to resort to violence, whether against the government or other social groups. In fact, the urban middle classes tend to be the most likely to protest against rises in food prices, since they often have the best opportunities, the most energy, and the best skills to coordinate and participate in protests.

Accordingly, there is a widespread misapprehension that social unrest in periods of high food prices relates primarily to food shortages. In reality, the sources of discontent are considerably more complex – linked to political structures, land ownership, corruption, the desire for democratic reforms

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and general economic problems – where the price of food is seen in the context of general increases in the cost of living. Research has shown that while the international media have a tendency to seek simple resource-related explanations – such as drought or famine – for conflicts in the Global South, debates in the local media are permeated by more complex political relationships.

#### No emerging tech impact.

Pinker et al. ’20 [Steven; PhD, Professor of Psychology @ Harvard; Stuart Russell, Professor of Computer Science @ UC Berkeley; Lucas Perry; “Steven Pinker and Stuart Russell on the Foundations, Benefits, and Possible Existential Threat of AI”; June 29th, 2020; https://futureoflife.org/2020/06/15/steven-pinker-and-stuart-russell-on-the-foundations-benefits-and-possible-existential-risk-of-ai/]

Lucas Perry: Now that’s quite a beautiful picture of the future. There’s a lot of existential hope there. The other side to existential hope is existential risk. Now this is an interesting subject, which Steve and you, Stuart, I believe have disagreements about. So pivoting into this area, and Steve, you can go first here, do you believe that human beings, should we not go extinct in the meantime, will we build artificial superintelligence? And does that pose an existential risk to humanity?

Steven Pinker: Yeah, I’m on record as being skeptical of that scenario and dubious about the value of putting a lot of effort into worrying about it now. The concept of superintelligence is itself obscure. In a lot of the discussions you could replace the word “superintelligence” with “magic” or “miracle” and the sentence would read the same. You read about an AI system that could duplicate brains in silicon, or solve problems like war in the Middle East, or cure cancer.  It’s just imagining the possibility of a solution and assuming that the ability to bring it about will exist, without laying out what that intelligence would consist of, or what would count as a solution to the problem.

So I find the concept of superintelligence itself a dubious extrapolation of an unextrapolable continuum, like human-to-animal, or not-so-bright human-to-smart-human. I don’t think there is a power called “intelligence” such that we can compare a squirrel or an octopus to a human and say, “Well, imagine even more of that.”

I’m also skeptical about the existential risk scenarios. They tend to come in two varieties. One is based on the notion of a will to power: that as soon as you get an intelligent system, it will inevitably want to dominate and exploit. Often the analogy is that we humans have exploited and often extinguished animals because we’re smarter than them, so as soon as there is an artificial system that’s smarter than us, it’ll do to us what we did to the dodos. Or that technologically advanced civilizations, like European colonists and conquistadors subjugated and sometimes wiped out indigenous peoples, so that’s what an AI system might do to us. That’s one variety of this scenario.

I think that scenario confuses intelligence with dominance, based on the fact that in one species, Homo sapiens, they happen to come bundled together, because we came about through natural selection, a competitive process driven by relative success at capturing scarce resources and competing for mates, ultimately with the goal of relative reproductive success. But there’s no reason that a system that is designed to pursue a goal would have as its goal, domination.

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This goes back to our earlier discussion that the ability to achieve a goal is distinct from what the goal is.

It just so happens that in products of natural selection, the goal was winning in reproductive competition. For an artifact we design, there’s just no reason that would be true. This is sometimes called the orthogonality thesis in discussions of existential risk, although that’s just a fancy-schmancy way of referring to Hume’s distinction between our goals and our intelligence.

Now I know that there is an argument that says, “Wouldn’t any intelligence system have to maximize its own survivability, because if it’s given the goal of X, well, you can’t achieve X if you don’t exist, therefore, as a subgoal to achieving X, you’ve got to maximize your own survival at all costs.” I think that’s fallacious. It’s certainly not true that all complex systems have to work toward their own perpetuation. My iPhone doesn’t take any steps to resist my dropping it into a toilet, or letting it run out of power.

You could imagine if it could be programmed like a child to whine, and to cry, and to refuse to do what it’s told to do as its power level went down. We wouldn’t buy one. And we know in the natural world, there are plenty of living systems that sacrifice their own existence for other goals. When a bee stings you, its barbed stinger is dislodged when the bee escapes, killing the bee, but because the bee is programmed to maximize the survivability of the colony, not itself, it willingly sacrifices itself. So it is not true that by definition an intelligent system has to maximize its own power or survivability.

But the more common existential threat scenario is not a will to power but collateral damage. That if an AI system is given a single goal, what if it relentlessly pursues it without consideration of side effects, including harm to us? There are famous examples that I originally thought were spoofs, but were intended seriously, like giving an AI system the goal of making as many paperclips as possible, and so it converts all available matter into paperclips, including our own bodies (putting aside the fact that we don’t need more efficient paperclip manufacturing than what we already have, and that human bodies are a pretty crummy source of iron for paperclips).

Barely more plausible is the idea that we might give an AI system the goal of curing cancer, and so it will  conscript us as involuntary guinea pigs and induce tumors in all of us, or that we might give it the goal of regulating the level of water behind a dam and it might flood a town because it was never given the goal of not drowning a village.

The problem with these scenarios is that they’re self-refuting. They assume that an “intelligent” artifact would be designed to implement a single goal, which is not true of even the stupid artifacts that we live with. When we design a car, we don’t just give the goal of going from A to B as fast as possible; we also install brakes and a steering wheel and a muffler and a catalytic converter. A lot of these scenarios seem to presuppose both idiocy on the part of the designers, who would give a system control over the infrastructure of the entire planet without testing it first to see how it worked, and an idiocy on the part of the allegedly intelligent system, which would pursue a single goal regardless of all the other effects. This does not exist in any human artifact, let alone one that claims to be intelligent. Giving an AI system one vaguely worded, sketchy goal, and empowering it with control over the entire infrastructure of the planet without testing it first seems to me just so self-evidently moronic that I don’t worry that engineers have to be warned against it.

I’ve quoted Stuart himself, who in an interview made the point well when he said, “No one talks about building bridges that don’t fall down. They just call it building bridges.” Likewise, AI that avoids idiocies like that is just AI, it’s not AI with extra safeguards. That’s what intelligence consists of.

#### Monocultures are inevitable and irresolvable – their ev – Iowa reads blue

Charles Duan 19, Director of Technology and Innovation Policy, R Street Institute, Washington, D.C., “Of Monopolies and Monocultures: The Intersection of Patents and National Security,” Santa Clara High Technology Law Journal, vol. 36, no. 4, 2020/2019, pp. 369–406

It is widely recognized that a monoculture is unavoidable in at least one respect: Most connected devices will need to conform to technical standards. 177 5G, for example, is a technical standard developed by a private industry consortium called 3GPP. 178 A flaw in any such standard would render all mobile devices implementing the standard vulnerable to an identical attack. 179 Avoiding these sorts of systemic flaws in standards requires rigorous development, analysis, and testing of the standard in the development process, which in turn requires ensuring that as many firms as possible, especially firms that share basic American values, are involved in the development of those standards.180 Thus, the necessary standardization of information and communication technologies is perhaps the most important reason why a competitive communication technology market is essential to cybersecurity and national security.

#### The alternative isn’t collapse, it’s just slightly less beneficial than competition

Charles Duan 19, Director of Technology and Innovation Policy, R Street Institute, Washington, D.C., “Of Monopolies and Monocultures: The Intersection of Patents and National Security,” Santa Clara High Technology Law Journal, vol. 36, no. 4, 2020/2019, pp. 369–406

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. 9 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.16 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."1 63 This research confirms that competition is more conducive to cybersecurity.

#### No cyber impact.

Lewis ’20 [James Andrew; 8/17/20; senior vice president and director of the Strategic Technologies Program at the Center for Strategic and International Studies; "Dismissing Cyber Catastrophe," https://www.csis.org/analysis/dismissing-cyber-catastrophe]

More importantly, there are powerful strategic constraints on those who have the ability to launch catastrophe attacks. We have more than two decades of experience with the use of cyber techniques and operations for coercive and criminal purposes and have a clear understanding of motives, capabilities, and intentions. We can be guided by the methods of the Strategic Bombing Survey, which used interviews and observation (rather than hypotheses) to determine effect. These methods apply equally to cyberattacks. The conclusions we can draw from this are:

Nonstate actors and most states lack the capability to launch attacks that cause physical damage at any level, much less a catastrophe. There have been regular predictions every year for over a decade that nonstate actors will acquire these high-end cyber capabilities in two or three years in what has become a cycle of repetition. The monetary return is negligible, which dissuades the skilled cybercriminals (mostly Russian speaking) who might have the necessary skills. One mystery is why these groups have not been used as mercenaries, and this may reflect either a degree of control by the Russian state (if it has forbidden mercenary acts) or a degree of caution by criminals.

There is enough uncertainty among potential attackers about the United States’ ability to attribute that they are unwilling to risk massive retaliation in response to a catastrophic attack. (They are perfectly willing to take the risk of attribution for espionage and coercive cyber actions.)

**[MARKED Around HERE I THINK BUT I DON’T WANNA REOPEN SPEECH DOC]**

No one has ever died from a cyberattack, and only a handful of these attacks have produced physical damage. A cyberattack is not a nuclear weapon, and it is intellectually lazy to equate them to nuclear weapons. Using a tactical nuclear weapon against an urban center would produce several hundred thousand casualties, while a strategic nuclear exchange would cause tens of millions of casualties and immense physical destruction. These are catastrophes that some hack cannot duplicate. The shadow of nuclear war distorts discussion of cyber warfare.

State use of cyber operations is consistent with their broad national strategies and interests. Their primary emphasis is on espionage and political coercion. The United States has opponents and is in conflict with them, but they have no interest in launching a catastrophic cyberattack since it would certainly produce an equally catastrophic retaliation. Their goal is to stay below the “use-of-force” threshold and undertake damaging cyber actions against the United States, not start a war.

This has implications for the discussion of inadvertent escalation, something that has also never occurred. The concern over escalation deserves a longer discussion, as there are both technological and strategic constraints that shape and limit risk in cyber operations, and the absence of inadvertent escalation suggests a high degree of control for cyber capabilities by advanced states. Attackers, particularly among the United States’ major opponents for whom cyber is just one of the tools for confrontation, seek to avoid actions that could trigger escalation.

The United States has two opponents (China and Russia) who are capable of damaging cyberattacks. Russia has demonstrated its attack skills on the Ukrainian power grid, but neither Russia nor China would be well served by a similar attack on the United States. Iran is improving and may reach the point where it could use cyberattacks to cause major damage, but it would only do so when it has decided to engage in a major armed conflict with the United States. Iran might attack targets outside the United States and its allies with less risk and continues to experiment with cyberattacks against Israeli critical infrastructure. North Korea has not yet developed this kind of capability.

the national level, as well as the local companies that are likely to take these directions as top priorities. We can expect a similar trajectory for China’s AI policies. Historically, the Chinese government has been open-minded towards technology development. When a new technology comes out, the government will give it the benefit of doubt and let it grow, rather than stifle it with policy or endless debates. Also, the environment in China is more conducive to fast launch and iteration. There is a general belief that it is better to launch something and then get it approved later. This allows Chinese businesses to generate real data at scale, which in turn allows technology to improve over a shorter period of time, particularly once AI is introduced into the equation. For example, while in the US, truckers’ unions are petitioning the Department of Transportation to delay autonomous truck testing, in China, the Xiong’an New Area, a planned smart city development southwest of Beijing, is being designed from the ground up with full autonomy in mind. Various highway authorities are willing to develop road augmentation, special lanes, or move warehouses near highway exits, all to facilitate faster deployment of autonomous trucks. We also see major initiatives in cities, following the central government’s call to action. Shanghai, Nanjing, Wuhan, and Tianjin are but a few of the cities coming out with their own AI initiatives. As with past policies, much of the resources will be applied at the provincial and city government levels. The types of resources may include subsidies for top talent (especially overseas talent); guidance for top VC funds, with the government playing the role of limited partner (LP) but offering some of its upside to the general partners (GPs) of the funds; special programs for top AI companies and start-ups (free rent, subsidy for local hiring, housing and private school for top talents); and technical awards for companies and individuals. Finally, the US, EU, and China will also compete to be out in front on developing a regulatory regime around AI technologies and applications. The National Plan’s explicit recognition of the need for regulatory, legal, and ethical principles for AI development and use represents an uncommonly foresighted approach. Of course, the government’s approach to AI regulation, ethics, and economic adjustment will reflect Beijing’s broader model of governance and ideology. Given its preference for a state-centric approach to international issues, for example, it is possible China will launch an initiative via the UN to establish first an automation/AI-related “code of conduct,” or basic regulatory approach, followed by a special committee on the topic and eventually an oversight body operating within a UN framework. Such an initiative would put China at the forefront of developing a global approach to these issues. Beijing has attempted a similar approach on cybersecurity issues, which it argues have a global impact and require a global regulatory response.

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#### Decline turns the case---agencies will cease enforcement during the downturn

Anika Dandekar 21, Political Science at University of California, San Diego, “Politics of Antitrust Enforcement: The Influence of Ideology and Party Control on Regulatory Behavior”, Senior Thesis, 3/29/2021, https://polisci.ucsd.edu/undergrad/departmental-honors-and-pi-sigma-alpha/A.Dandekar\_Senior-Honors-Thesis.pdf

1.3.3 Bureaucratic Approach

Some scholars have tried to explain varying antitrust by changing makeup or preferences of regulatory agencies themselves.

Some suggest that the agencies respond to external factors. Amacher et al. (1985) examined FTC enforcement of the Robinson- Patman Act and found that it was influenced by economic conditions, decreasing during business contractions and increasing during periods of expansion. They suggested that this means "the FTC moves to cushion producer losses" during hard economic times, but transfers "wealth to consumers" during economic upswings. Lewis-Beck (1979) found that while small increases in the division's budget did not reduce anticompetitive behavior, a major increase in the division's budget might significantly stem merger activity because of a "threshold effect”.

#### aff unravels confidence and innovation – antitrust is worse than holdup

Barnett ’19 [Jonathan; Spring; Law Professor at the University of Southern California; Michigan Technology Law Review, “Article: Antitrust Overreach: Undoing Cooperative Standardization In The Digital Economy,” Vol. 25]

In this Article, I show that this argument has things exactly backward: patents and patent licenses support the standardization mechanisms that have driven the exceptional success of the smartphone markets. It is regulators' top-down interventions, rather than the bottom-up network of voluntarily negotiated licensing agreements, that threaten to unravel this remarkable market-driven mechanism for incentivizing innovation, standardization, and dissemination of new technologies across a wide array of products and services for end-users.

The regulatory and academic near-consensus 10 relies on a false factual premise that leads to misguided policy. The factual premise is mistaken because there is simply no compelling empirical evidence to support regulators' claims that even the largest patent owners widely engage in "patent holdup" or "royalty stacking," or even have rational incentives to do so. 11Consistent with the exceptional growth of the smartphone industry, all empirical studies have reached relatively modest estimates of the total royalty burden typically borne by device manufacturers. 12The policy conclusion is mistaken because it ignores the basic fact that a secure legal foundation of property rights and contract is a necessary predicate to induce innovators to undertake high-cost, high-risk R&D and then disclose the results in a standard-setting process over which no individual firm exerts unilateral control. If that legal predicate is no longer satisfied, firms that currently specialize in innovation are likely to reduce R&D activities, withdraw from standard-setting activities, or construct closed innovation environments in which firms monetize R&D through proprietary hardware and software products. All those outcomes are almost certainly inferior relative to the status quo.

#### Antitrust is worse

Barnett ’18 [Jonathan, Ronald A. Cass, Richard A. Epstein, Douglas H. Ginsburg, Gus Hurwitz, David J. Kappos, Paul Michel, Adam Mossoff, Kristen Osenga, David J. Teece, and Joshua D. Wright; February 22; Professor at the USC Gould School of Law; Dean Emeritus of the Boston University School of Law; Law Professor at New York University; Senior Circuit Judge, United States Court of Appeals for the District of Columbia Circuit, Law Professor at George Mason University; Law Professor at the University of Nebraska; Former Under Secretary of Commerce and Director of the United States Patent & Trademark Office; Retired Chief Judge of the United States Court of Appeals for the Federal Circuit; Law Professor at George Mason University; Professor at the University of Richmond School of Law; Thomas W. Tusher Professor in Global Business at the University of California at Berkeley; Former Commissioner of the Federal Trade Commissioner, Law Professor at George Mason University; IP Watchdog, “Apply Evidence-based Approach to Antitrust Law Equally to Innovators and Implementers,” https://www.ipwatchdog.com/2018/02/22/evidence-based-application-antitrust-law/id=93755/]

As judges, former judges and government officials, legal academics and economists who are experts in antitrust and intellectual property law, we write to express our support for your recent announcement that the Antitrust Division of the Department of Justice will adopt an evidence-based approach in applying antitrust law equally to both innovators who develop and implementers who use technological standards in the innovation industries.

We disagree with the letter recently submitted to you on January 24, 2018 by other parties who expressed their misgivings with your announcement of your plan to return to this sound antitrust policy. Unfortunately, their January 24 letter perpetuates the long-standing misunderstanding held by some academics, policy activists, and companies, who baldly assert that one-sided “patent holdup” is a real-world problem in the high-tech industries. This claim rests entirely on questionable models that predict that opportunistic behavior in patent licensing transactions will result in higher consumer prices. These predictions are inconsistent with actual market data in any high-tech industry.

It bears emphasizing that no empirical study has demonstrated that a patent-owner’s request for injunctive relief after a finding of a defendant’s infringement of its property rights has ever resulted either in consumer harm or in slowing down the pace of technological innovation. Given the well understood role that innovation plays in facilitating economic growth and wellbeing, a heavy burden of proof rests on those who insist on the centrality of “patent holdup” to offer some tangible support for that view, which they have ultimately failed to supply in the decade or more since that theory was first propounded. Given the contrary conclusions in economic studies of the past decade, there is no sound empirical basis for claims of a systematic problem of opportunistic “patent holdup” by owners of patents on technological standards.

Several empirical studies demonstrate that the observed pattern in high-tech industries, especially in the smartphone industry, is one of constant lower quality-adjusted prices, increased entry and competition, and higher performance standards. These robust findings all contradict the testable implications of “patent holdup” theory. The best explanation for this disconnect between the flawed “patent holdup” theory and overwhelming weight of the evidence lies in the institutional features that surround industry licensing practices. These practices include bilateral licensing negotiations, and the reputation effects in long-term standards activities. Both support a feed-back mechanism that creates a system of natural checks and balances in the setting of royalty rates. The simplistic models of “patent holdup” ignore all these moderating effects.

Of even greater concern are the likely negative social welfare consequences of prior antitrust policies implemented based upon nothing more than the purely theoretical concern about opportunistic “patent holdup” behavior by owners of patented innovations incorporated 2 into technological standards. For example, those policies have resulted in demands to set royalty rates for technologies incorporated into standards in the smartphone industry according to particular components in a smartphone. This was a change to the longstanding industry practice of licensing at the end-user device level, which recognized that fundamental technologies incorporated into the cellular standards like 2G, 3G, etc., optimize the entire wireless system and network, and not just the specific chip or component of a chip inside a device.

#### Chilling Link---antitrust applies to all industries, so there’s no way to limit the plan’s scope AND firms and lawyers are risk-averse and think this is true---the result is fear of liability that scales back investment.

Thomas Nachbar 19, Professor of Law at the University of Virginia School of Law, JD from the University of Chicago Law School, AB in History and Economics from the University of Illinois, “Book Review: Heroes and Villains of Antitrust”, The Antitrust Source, 18-6 Antitrust Src. 1, June 2019, Lexis

Since Adam Smith, the argument of so-called free-market intellectuals has not been that markets are perfect but rather that they are comparatively better at solving problems than governments. Part of the argument is that, in most cases, market forces will drive a firm that has adopted an inefficient practice to shift to a more efficient one, lest it lose more business than it gains from the practice. But if antitrust law outlawed a practice, there is no potential for the market to correct--the practice once outlawed would remain outlawed. n54 And because antitrust law applies to all industries, a practice outlawed for one firm or industry would be outlawed for all firms in all industries, or be interpreted as such by risk-averse firms and their risk-averse lawyers--not to mention the treble damages that the liable antitrust defendant would have to pay.

[FOOTNOTE] n55 See Credit Suisse Sec. (USA) LLC v. Billing, 551 U.S. 264, 284 (2007) ("In sum, an antitrust action in this context is accompanied by a substantial risk of injury to the securities markets and by a diminished need for antitrust enforcement to address anticompetitive conduct."); Bell Atl. Corp. v. Twombly, 550 U.S. 544, 546 (2007) ("It is one thing to be cautious before dismissing an antitrust complaint in advance of discovery, but quite another to forget that proceeding to antitrust discovery can be expensive.") Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 414 (2004) ("Mistaken inferences and the resulting false condemnations 'are especially costly, because they chill the very conduct the antitrust laws are designed to protect.'") (quoting Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594 (1986)). [END FOOTNOTE]

#### ‘Antitrust now’ is rhetoric. It’ll be light-touch and easily thwarted by litigation, unenforced due to regulatory capture and previous admins, AND foiled by partisanship.

Silverman ’21 [Jacob; July 9; Staff writer and Author; The New Republic, “Biden Wants to Tame Big Tech with a Thousand Paper Cuts,” <https://newrepublic.com/article/162940/biden-executive-order-big-tech-monopoly>]

On Friday, the White House [announced](https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/09/fact-sheet-executive-order-on-promoting-competition-in-the-american-economy/) a potentially important, if modest, effort to further tamp down the power of the technology industry. This time the instrument is an executive order—the kind of wide-ranging declaration that often gets called “sweeping” or “major,” though its efficacy may take years to gauge—that covers everything from competition in the economy to drug prices to reforming a tech sector that is defined by a handful of seemingly unstoppable titans. Offering a mix of general recommendations, requests for action from other government agencies, and new administration policies, the Executive Order on Promoting Competition in the American Economy may be just what our overconsolidated economic system needs. But in tackling the power of a tech sector that has not only wrested control of the economy but remade it in its own data-hungry image, the Biden administration is still throwing pebbles at its enemy’s parapets. The tech industry has had 20 years to establish a stranglehold over our personal data, attention, and consumer choice. To tackle these problems, we need more, much more.

Despite promising to take on the power of Big Tech, President Joe Biden and his administration have so far taken a cautiously incrementalist approach. He’s [appointed tough industry critics](https://www.nytimes.com/2021/06/15/technology/lina-khan-ftc.html) like Lina Khan to be commissioner of the Federal Trade Commission, but he has yet to name a head of the Justice Department’s antitrust division, a key role for any future enforcement action. In Congress, Democrats have introduced six smallish antitrust bills, but their path out of the House is [murky](https://www.cnbc.com/2021/06/24/-big-tech-antitrust-debate-odd-alliances-form-and-party-fractures-show.html), as ongoing disputes between [Republicans](https://www.cnbc.com/2021/07/07/house-republicans-lay-out-tech-antitrust-agenda.html) and Democrats over how to fight this legislative battle mean that the final bills could look much different than they did in committee—if they make it to a floor vote at all. (It doesn’t help that some Silicon Valley–adjacent Democratic politicians, like Representative Ted Lieu and Representative Ro Khanna, have been less than supportive of the bills.)

As federal and congressional leadership lag, states have forged ahead, with dozens of attorneys general coming together in lawsuits like one, filed this week, accusing Google of [anti-competitive practices](https://www.vox.com/recode/2021/7/7/22567656/google-play-store-states-antitrust-suit-letitia-james-utah-new-york-north-carolina). Other ongoing antitrust suits include one [against Amazon](https://www.washingtonpost.com/technology/2021/05/25/dc-ag-antitrust/) over pricing issues; another lawsuit (this one with DOJ participation) [against Google](https://www.justice.gov/opa/pr/justice-department-sues-monopolist-google-violating-antitrust-laws); and two others against Facebook that a judge recently threw out. In this proliferating legal war against Big Tech—premised on a lack of competition and companies’ abusing their monopoly status—any of these cases could yield billion-dollar fines for one of the tech giants. But fines are easily paid. Whether these suits can lead to meaningful reform, to breaking up companies and redirecting business practices away from the current dominant model of user surveillance and bulk data collection—that is far less clear. As with proposed legislation in the House, bipartisan legal efforts may be sundered on the altar of competing partisan priorities, with Republicans focusing on [alleged censorship](https://newrepublic.com/article/162299/josh-hawley-gops-fake-war-big-tech) and Democrats more focused on [economic competition and user rights](https://newrepublic.com/article/160646/biden-antitrust-blueprint-monopoly-busting).

With the stage set for legislative gridlock, drawn-out lawsuits, and [bickering](https://www.politico.com/news/2021/07/06/ftc-staffers-public-appearances-498386) over the FTC’s legitimacy, a small opening has emerged for the Biden administration to take meaningful action on its own. And there are some measures in the executive order worth celebrating. One section aims to improve internet service by eliminating early termination fees and providing transparent pricing to help drive competition. Another proviso calls for gadget users—from farmers working on tractors to people tinkering with their own cell phones—to have what’s often [referred to](https://www.theverge.com/2021/7/9/22569869/biden-executive-order-right-to-repair-isps-net-neutrality) as “the right to repair,” a right that tech companies have suppressed by discouraging DIY or third-party work on broken items. (Forcing customers to take their doddering laptop to Apple’s Genius Bar helps the company maintain control over its products and ensures that repairs, and the money they generate, stay in-house.) Other relevant orders call for the restoration of net neutrality and applying more scrutiny to corporate mergers, which may prevent a tech giant from swallowing up the next WhatsApp or Slack, formerly insurgent chat/social media platforms that were absorbed by Facebook and Salesforce.

In the last year, tech companies have shifted their rhetoric, [claiming](https://newrepublic.com/article/162509/facebook-big-tech-nick-clegg-regulation-policy) that they are in favor of regulation—just on their terms. To that end, they’ve deployed armies of lobbyists to woo elected officials, making companies like Google and Facebook some of the most profligate spenders on K Street. With the potential for major legislative action still up in the air—a divided Senate doesn’t augur well, unless tech-critical Republicans like Senator Josh Hawley line up behind the Democratic legislative agenda, which seems unlikely—executive action may be the most promising way forward. Call it death by a thousand regulations. It’s also—as the executive order’s many prompts for action by the Federal Communications Commission, the FTC, and DOJ show—a plea for the government to do its damn job.

Even sympathetic observers may survey this latest initiative with some well-earned cynicism. [Regulatory capture](https://newrepublic.com/article/149438/big-pharma-captured-one-percent), in which regulatory agencies become beholden to the companies and industries they oversee, is a well-known feature of the land, and the families of leading politicians like Representative Nancy Pelosi periodically trade stocks based on what appears to be insider information. And as demonstrated by the measure to treat all internet traffic equally by restoring net neutrality (something that the Trump administration [did away with](https://newrepublic.com/article/146305/loses-war-net-neutrality)), the Biden administration is still playing catchup, fighting many of yesterday’s battles. For instance, the order “calls on the leading antitrust agencies, [the DOJ and FTC], to enforce the antitrust laws vigorously and recognizes that the law allows them to challenge prior bad mergers that past Administrations did not previously challenge.”

While divesting WhatsApp and Instagram from Facebook are worthwhile efforts, there’s also a sense that would-be tech reformers are struggling to deal with the mistakes and oversights of a previous generation of politicians (i.e., pushing for the enforcement of existing laws is yet another call for the government to do its job). Even the order’s directive that the FTC “establish rules on surveillance and the accumulation of data” seems incredibly belated. We are 20-odd years into a surveillance economy, in which consumers have become the main source to be mined for value. The resulting inequities are vast, as the tech giants have had decades to strengthen their positions. It will take far more than an executive order to undo all this, much less to ensure a more equitable future. The question is: Does the Biden administration understand this grim state of play, or is this the best we’re going to get?

#### Confidence high --- overzealous regulation slams the breaks on recovery.

Nguyen 10-19-21 (Lananh Nguyen, covers Wall Street for The New York Times. She previously spent more than a decade at Bloomberg News in New York and London, where she wrote about banking and financial markets, 10-15-2021, "Wall Street Sees a Record Deal Spree as a Reason for Optimism,” NYT, <https://www.nytimes.com/2021/10/15/business/wall-street-banks-earnings-mergers.html>?)

The dealmakers at the nation’s biggest banks are the busiest they’ve ever been. Interest rates are low, private equity firms [flush with cash](https://www.nytimes.com/2021/08/31/business/private-equity-uk.html) are looking for promising investments, and companies are aggressively pursuing mergers at a breakneck pace.  
  
Wall Street banks announced blockbuster quarterly profits this week from a record wave of transactions that shows no signs of ebbing: Even in the face of surging inflation and shaky consumer sentiment, corporate clients are ready to deal — and bank leaders say that’s a reason to be optimistic about the economic recovery.  
  
“Whenever C.E.O. confidence is high, M&A activity increases,” David M. Solomon, Goldman Sachs’s chief executive, said in an interview Friday after the bank reported third-quarter earnings of $5.38 billion, surpassing analyst forecasts. “The world’s resettled a bit coming out of the pandemic, and that is now giving a lot of companies an opportunity to really take note of where they want to go.”

A record $1.6 trillion in mergers and purchases were struck worldwide in the quarter, according to [a research report](https://thesource.refinitiv.com/thesource/getfile/index/07ccc1f9-e30d-47ad-8c84-f620b4a990c5?utm_source=Eloqua&utm_medium=email&utm_campaign=00014FG_NewsletterDQRFinancialAdvisory_Other&utm_content=NL_M&A%20Financial%20Advisory%20Review_9M21) from Refinitiv. That, in turn, set records for advisory businesses across Wall Street: [Goldman Sachs](https://www.nytimes.com/2021/10/15/business/goldman-sachs-earnings.html) and Morgan Stanley tallied record revenues, JPMorgan Chase and Bank of America announced all-time high fees, and Citigroup’s mergers and acquisitions bankers had their best quarter in a decade.

Goldman Sachs has already had the most profitable year in its history — earning $17.7 billion so far — with three months to go. In the most recent quarter, its bankers closed transactions including the $32 billion [spinoff of Universal Music Group](https://www.nytimes.com/2021/09/21/business/dealbook/evergrande-stock-markets.html) by the French conglomerate Vivendi and Salesforce.com’s $28.1 billion [purchase of Slack Technologies](https://www.nytimes.com/2020/12/01/technology/salesforce-slack-deal.html). Those were two of the 10 biggest deals completed in the three-month period ending in September, according to Dealogic.

Morgan Stanley also had two top-10 deals: the chip maker Analog Devices’s $20 billion acquisition of a competitor, Maxim Integrated, and the $12.3 billion purchase of Proofpoint, a cybersecurity company, by the private equity firm Thoma Bravo.

Sharon Yeshaya, Morgan Stanley’s chief financial officer, said the financial, health care and technology industries in the Americas and Europe have been the hottest areas, but momentum was building elsewhere, too.  
  
“What we’re seeing is really strong pipelines,” Ms. Yeshaya said in an interview after the bank reported a jump in profits to $3.7 billion. “The strength is broadening.”  
  
The frenetic pace has persisted despite the economic upheaval caused by the pandemic, trade disputes and [geopolitical tension](https://www.nytimes.com/2021/07/13/business/dealbook/china-wall-street-ipos.html), Matt Toole, director of deals intelligence at Refinitiv, wrote about the record quarter. Buoyant [stock markets](https://www.nytimes.com/2021/10/21/business/economy/stock-market-record.html), low borrowing costs and the emergence of [new buyers from special purpose acquisition companies](https://www.nytimes.com/2021/08/21/business/dealbook/spac-market-future.html) will continue to prop up activity, he wrote.

“With the all-time full-year deal making record broken in less than nine months and five consecutive quarters of more than $1 trillion in M&A activity, we have very little data to make true historical comparisons,” Mr. Toole wrote.

Even so, there are plenty of factors that could put the brakes on. Tougher regulators in the United States, rising prices for goods and services and central banks’ moves to cut back on stimulus efforts “will all contribute to how much further this cycle has to go,” he wrote.

Even as they [maintained an optimistic outlook](https://www.nytimes.com/2021/10/14/business/bofa-wells-fargo-earnings.html), bank chiefs acknowledged there were many factors that could slow things down, including supply-chain problems that have lasted for months and [driven up prices](https://www.nytimes.com/2021/10/13/business/economy/september-2021-cpi-inflation.html) for materials and goods. And economic indicators remain mixed: While bank bosses cited increasing [consumer spending](https://www.nytimes.com/2021/10/15/business/retail-sales-september-2021.html) as a positive sign, [consumer confidence is falling](https://conference-board.org/data/consumerconfidence.cfm).

Perhaps the biggest potential disrupter remains the Federal Reserve. Officials at the central bank could dial back some of their support measures for the [economy](https://www.nytimes.com/2021/10/19/business/economy/us-economy.html) as soon as next month, and have begun debating when they might need to raise interest rates to tame inflation.  
  
But Jason Goldberg, an analyst at Barclays, said the uneven recovery just isn’t a major concern for the banks right now, especially when it comes to the deals they’re helping line up. Volatility is historically the biggest hurdle to deal-making, he said, so analysts are watching the stock market closely. But he expected global deal activity to remain high for some time.

“You’re seeing many companies across industries re-examining their business models coming out of the pandemic,” Mr. Goldberg said. And they have a range of reasons to strike deals, he said: building scale, bolstering their digital operations, smoothing out their supply chains and making use of stockpiled cash.

Mr. Solomon of Goldman Sachs says the number of deals the bank is working to complete is evidence of an “extraordinarily robust” climate. Still, he cautioned that deal making may recede slightly from its breakneck pace.

“We’re clearly recovering coming out of the pandemic, but it’ll be interesting to see the trajectory of the recovery” and what other economic factors come into play, Mr. Solomon said. “But at the moment, with high corporate confidence, that’s having an impact on M&A in a positive way.”

#### Rising vaccinations stop Delta from killing the economy

Reilly 9/23 – Devon Reilly, assistant editor at S&P Global, “Economic Outlook U.S. Q4 2021: The Rocket Is Leveling Off,” 9/23/21, https://www.spglobal.com/ratings/en/research/articles/210923-economic-outlook-u-s-q4-2021-the-rocket-is-leveling-off-12120697

In this light, we revised our forecasts of real GDP growth for 2021 and 2022 to 5.7% and 4.1%, respectively, from 6.7% and 3.7% in our June report, with our new 2021 GDP forecast down a whopping 1 percentage point from June. Still, the near-term health of the U.S. economy remains strong and our current GDP forecast, if correct, is still the highest reading since 1984. The number of new cases fell in the first week of September, for the first time since late June. The delta variant and FDA approval of the Pfizer vaccine are encouraging more people to get vaccinated, bringing the country closer to herd immunity with 55% of Americans fully vaccinated as of Sept. 20. Moreover, the U.S. economy has felt less impact with each wave of the virus and has been able to withstand the damage. We maintain our assessment of U.S. recession risk over the next 12 months at 10%-15%--our lowest assessment in six years.

#### Studies prove biz con’s key AND depends on perceptions of political stability

Gabriel Caldas Montes 21, PhD Candidate in the Department of Economics at Fluminense Federal University and Fabiana da Silva Dr. Leite Nogueira, PhD in Economics from Universidade Federal Fluminense, Professor of Economics at the Universidade de Vassouras, “Effects of Economic Policy Uncertainty and Political Uncertainty on Business Confidence and Investment”, Journal of Economic Studies, April 2021, Emerald Insights

1. Introduction

The literature on business confidence is vast. If on the one hand some studies indicate that business confidence acts as a leading indicator of macroeconomic activity and influences the economic environment, on the other hand, some studies investigate the determinants of business confidence (Khan and Upadhayaya, 2020).

Although many advances have been made, the literature on the determinants of business confidence continues to evolve. Some studies analyze not only the effects of macroeconomic variables, but also the effects of other variables able to create (or reduce) uncertainties, such as corruption (Montes and Almeida, 2017) and monetary policy credibility (Montes, 2013; de Mendonça and Almeida, 2019). These studies reveal that low credibility and high levels of corruption reduce confidence due to the uncertainties that emerge.

Uncertain economic scenarios created by economic policy uncertainty undermine confidence, and affect the decision making of entrepreneurs, who, for example, postpone investment and employment decisions in order to gain more information (Bloom et al., 2018). Regarding the definition of economic policy uncertainty, Al-Thaqeb and Algharabali (2019) points out that “*Policy uncertainty is the economic risk associated with undefined future government policies and regulatory frameworks*” (Al-Thaqeb and Algharabali, 2019, p. 2). Baker et al. (2016) and Al-Thaqeb and Algharabali (2019) suggest that economic policy uncertainty delay economic recoveries during periods of recession as businesses and households postpone their decisions about investment and consumption expenditures due to market uncertainty. Nevertheless, regarding the effects of economic policy uncertainty on research and development (R&D) expenditures and innovation outputs, Tajaddini and Gholipour (2020) find positive relationships for a set of 19 developed and developing countries, thus, contradicting those that claim a negative association between economic policy uncertainty and R&D expenditure.

Since the work of Bloom (2009), and due to existing controversies in the literature, studies investigate the effects of uncertainty shocks on different economic variables (e.g., Baker et al., 2016; Bachmann et al., 2013; Colombo, 2013; Nodari, 2014; Donadelli, 2015; Gulen and Ion, 2015; Moore, 2017; Istiak and Serletis, 2018; Bahmani-Oskooee and Nayeri, 2018; Bahmani- Oskooee et al., 2018; Mumtaz and Surico, 2018; Gholipour, 2019; Greenland et al., 2019; Istiak and Alam, 2019, 2020; Tajaddini and Gholipour, 2020). In general, the findings suggest that macroeconomic variables such as GDP, investment and employment are adversely affected by increased economic policy uncertainty.

The political environment is also a source of uncertainty that affects the economy. Studies provide evidence that the instability of the political environment has negative effects on the economic environment (e.g., Barro, 1991; Alesina and Perotti, 1996; Svensson, 1998; Carmignani, 2003; Aisen and Veiga, 2006, 2013; Durnev, 2010; Zouhaier and Kefi, 2012; Julio and Yook, 2012; Uddin et al., 2017; Azzimonti, 2018; Jens, 2017). These studies show that political instability has negative effects on inflation, GDP and unemployment.

Political uncertainty reflects instabilities on the political scene (i.e., involving politicians). The instabilities arising from the political scenario are associated to uncertainties regarding possible changes in the “rules of the game” and in the functioning of institutions. Hence, the uncertainty related to the political system is a key feature affecting the business environment, which entrepreneurs must consider when deciding, for instance, to start or expand their businesses. The effects of political uncertainty are stronger when firms and politicians have close connections and political favors might be at play.

One can suggest economic policy uncertainty reduces entrepreneurs’ optimism about the future of the economy and their business. Similarly, an uncertain political environment can deteriorate business confidence, producing negative effects on the economic environment. Hence, some important questions arise. Does political uncertainty affect business confidence? Is business confidence affected by economic policy uncertainty? Are political uncertainty and economic policy uncertainty transmitted to investment decisions through business confidence? These questions are particularly important for developing countries since these countries often present higher levels of political uncertainty and economic policy uncertainty.

#### Studies confirm---business confidence tells economic fortunes better than conventional indicators.

Khan ’20 [Hashmat and Santosh Upadhayaya; August 16; Economics Professor at Carleton University, Economics PhD from University of British Columbia; Economic Analyst for Innovation, Science and Economic Development Canada; Empirical Economics, “Does business confidence matter for investment?” Vol. 59, No. 5]

Abstract

Business confidence is a well-known leading indicator of future output. Whether it has information about future investment is, however, unclear. We determine how informative business confidence is for investment growth independently of other variables using US business confidence survey data for 1955Q1–2016Q4. Our main findings are: (i) business confidence has predictive ability for investment growth; (ii) remarkably, business confidence has superior forecasting power, relative to conventional predictors, for investment downturns over 1–3-quarter forecast horizons and for the sign of investment growth over a 2-quarter forecast horizon; and (iii) exogenous shifts in business confidence reflect short-lived non-fundamental factors, consistent with the ‘animal spirits’ view of investment. Our findings have implications for improving investment forecasts, developing new business cycle models, and studying the role of social and psychological factors determining investment growth.

Introduction

Business confidence is a well-known leading indicator of future output, especially during economic downturns, and receives attention from the media, policymakers and forecasters. Somewhat surprisingly, the direct link between business confidence and investment has not yet been investigated. Our paper fills this gap. We provide a quantitative assessment of the information in business confidence for future investment growth, after controlling for the conventional determinants such as user cost, output, cash flow and stock price.

Understanding the predictive power of business confidence is valuable along three dimensions. First, it can help forecasters and policymakers improve their investment forecasts. Second, it can provide a rationale for explicitly including business confidence—either as causal or as anticipatory—in theoretical models of business cycles. Third, it can help motivate studies on the how investment managers’ social and psychological circumstances influence investment decisions over and beyond rational cost-benefit analyses.Footnote1

We consider the Organization for Economic Co-Operation and Development (OECD)’s business confidence index for the USA as a measure of business confidence and ask the following three questions.Footnote2 Does business confidence have independent information about future business investment growth? Does it have forecasting power for investment downturns? Does it help in making directional forecasts—the positive or negative movements in the trajectory of investment growth?

Previous literature that used business confidence has primarily studied its predictive properties for variables other than investment. Heye (1993) examines the relationship between business confidence and labour market conditions in the USA and other industrialized countries. Dasgupta and Lahiri (1993) show that business sentiments have explanatory power of forecasting business cycle turning points. Taylor and McNabb (2007) find that business confidence is procyclical and plays an important role in forecasting output downturns.

Although we focus on business confidence, our paper is related to a large body of previous research that has studied consumer confidence or sentiment and its ability to forecast macroeconomic variables. Leeper (1992) finds that consumer sentiment does not help predict industrial production and unemployment, especially when financial variables are taken into account. On the other hand, Matsusaka and Sbordone (1995) reject the hypothesis that consumer sentiment does not predict output. Carroll et al. (1994), Fuhrer (1993), Bram and Ludvigson (1998), Ludvigson (2004) and Cotsomitis and Kwan (2006) find that the consumer attitudes have some additional information about predicting household spending behaviour. Lahiri et al. (2016) employ a large real-time dataset and find that the consumer confidence survey has important role in improving the accuracy of consumption forecasts. Christiansen et al. (2014) find that consumer and business sentiments contain independent information for forecasting business cycles. Barsky and Sims (2012) find that consumer confidence reflects news about future fundamentals and a confidence shock has a persistent effect on the economy.

More recently, Angeletos et al. (2018) quantify the role of confidence for business cycle from both theoretical and empirical perspectives. They construct a measure of confidence within a Vector Autoregressive (VAR) framework by taking the linear combination of the VAR residuals that maximizes the sum of the volatilities of hours and investment at frequencies of 6–32 quarters. Their measure likely captures a mixture of consumer and business confidence and is, therefore, distinct from the survey-based measure that we use in our analysis.

We find that business confidence leads US business investment growth by one quarter. It leads structures investment, which is one of the major components of business investment, by two quarters. Our empirical analysis shows that investors’ confidence has statistically significant predictive power for US business investment growth and its components (equipment and non-residential structures) after controlling for other determinants of investment. To better gauge the role of business confidence for investment growth, we also perform Out-Of-Sample (OOS) test for 1990Q1–2016Q4. Our findings suggest that the OOS test results are similar to the in-sample test results.Footnote3

While, as we found, business confidence has predictive power for total investment, it may also contain additional information on the trajectory of investment as captured by downturns and directional changes. This information would be of interest to policymakers in assessing the economy’s near-term outlook, over and above the general ability of business confidence to forecast investment. Indeed, we find that contemporaneous correlation between business confidence and investment growth rises during NBER recession dates. This property of the data suggests that it is worthwhile to explore the forecasting ability of business confidence for investment downturns and directional changes. Towards this end, we define investment downturns as business investment growth below the sample average for more than two consecutive quarters.Footnote4 Using a static probit forecasting model, we assess the OOS forecasting ability of business confidence for investment downturns for 1990Q1–2016Q4. A key finding of this approach in the literature is that term spread and stock price contain information for forecasting US recessions (Estrella and Mishkin 1998; Nyberg 2010; Kauppi and Saikkonen 2008). We follow a similar approach and find that business confidence has statistically significant forecasting power for investment downturns over 1–4-quarter forecast horizons in the US economy. It has stronger forecasting ability than the traditional predictors such as term spread, credit spread and stock price at 1–3-quarter forecast horizons. We also find strong evidence that the business confidence has good incremental predictive power for investment downturns over 1–4-quarter forecast horizons, controlling for other predictors of downturns.

#### Econ decline causes terrorism, civil wars, and diversion that go global---nothing checks

Dr. Qian Liu 18, PhD in Economics from Uppsala University, Former Visiting Researcher at the University of California, Berkeley, Managing Director for Greater China at The Economist Group, Guest Lecturer at New York University, Tsinghua University, the Chinese Academy of Social Sciences and Fudan University, “The Next Economic Crisis Could Cause A Global Conflict. Here's Why”, World Economic Forum, 11/13/2018, https://www.weforum.org/agenda/2018/11/the-next-economic-crisis-could-cause-a-global-conflict-heres-why

The next economic crisis is closer than you think. But what you should really worry about is what comes after: in the current social, political, and technological landscape, a prolonged economic crisis, combined with rising income inequality, could well escalate into a major global military conflict.

The 2008-09 global financial crisis almost bankrupted governments and caused systemic collapse. Policymakers managed to pull the global economy back from the brink, using massive monetary stimulus, including quantitative easing and near-zero (or even negative) interest rates.

But monetary stimulus is like an adrenaline shot to jump-start an arrested heart; it can revive the patient, but it does nothing to cure the disease. Treating a sick economy requires structural reforms, which can cover everything from financial and labor markets to tax systems, fertility patterns, and education policies.

Policymakers have utterly failed to pursue such reforms, despite promising to do so. Instead, they have remained preoccupied with politics. From Italy to Germany, forming and sustaining governments now seems to take more time than actual governing. And Greece, for example, has relied on money from international creditors to keep its head (barely) above water, rather than genuinely reforming its pension system or improving its business environment.

The lack of structural reform has meant that the unprecedented excess liquidity that central banks injected into their economies was not allocated to its most efficient uses. Instead, it raised global asset prices to levels even higher than those prevailing before 2008.

In the United States, housing prices are now 8% higher than they were at the peak of the property bubble in 2006, according to the property website Zillow. The price-to-earnings (CAPE) ratio, which measures whether stock-market prices are within a reasonable range, is now higher than it was both in 2008 and at the start of the Great Depression in 1929.

As monetary tightening reveals the vulnerabilities in the real economy, the collapse of asset-price bubbles will trigger another economic crisis – one that could be even more severe than the last, because we have built up a tolerance to our strongest macroeconomic medications. A decade of regular adrenaline shots, in the form of ultra-low interest rates and unconventional monetary policies, has severely depleted their power to stabilize and stimulate the economy.

If history is any guide, the consequences of this mistake could extend far beyond the economy. According to Harvard’s Benjamin Friedman, prolonged periods of economic distress have been characterized also by public antipathy toward minority groups or foreign countries – attitudes that can help to fuel unrest, terrorism, or even war.

For example, during the Great Depression, US President Herbert Hoover signed the 1930 Smoot-Hawley Tariff Act, intended to protect American workers and farmers from foreign competition. In the subsequent five years, global trade shrank by two-thirds. Within a decade, World War II had begun.

To be sure, WWII, like World War I, was caused by a multitude of factors; there is no standard path to war. But there is reason to believe that high levels of inequality can play a significant role in stoking conflict.

According to research by the economist Thomas Piketty, a spike in income inequality is often followed by a great crisis. Income inequality then declines for a while, before rising again, until a new peak – and a new disaster. Though causality has yet to be proven, given the limited number of data points, this correlation should not be taken lightly, especially with wealth and income inequality at historically high levels.

This is all the more worrying in view of the numerous other factors stoking social unrest and diplomatic tension, including technological disruption, a record-breaking migration crisis, anxiety over globalization, political polarization, and rising nationalism. All are symptoms of failed policies that could turn out to be trigger points for a future crisis.

Voters have good reason to be frustrated, but the emotionally appealing populists to whom they are increasingly giving their support are offering ill-advised solutions that will only make matters worse. For example, despite the world’s unprecedented interconnectedness, multilateralism is increasingly being eschewed, as countries – most notably, Donald Trump’s US – pursue unilateral, isolationist policies. Meanwhile, proxy wars are raging in Syria and Yemen.

Against this background, we must take seriously the possibility that the next economic crisis could lead to a large-scale military confrontation. By the logic of the political scientist Samuel Huntington , considering such a scenario could help us avoid it, because it would force us to take action. In this case, the key will be for policymakers to pursue the structural reforms that they have long promised, while replacing finger-pointing and antagonism with a sensible and respectful global dialogue. The alternative may well be global conflagration.