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### 1AC---Economy ADV

#### Standards-Setting Organizations (SSO’s) are industry members who jointly establish standards for information tech defined by the adoption of standard-essential patents (SEP’s), which are licensed to companies who wish to implement the tech in their product, called implementers, on Fair, Reasonable, and Non-Discriminatory (FRAND) terms. Current standards promote price gouging, FRAND enforcement is critical.

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I. Standard Setting and the Competitive Process

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### Monopoly pricing and selective licensing incentivizes rent-seeking and undermines 5G innovation.

Actonline 20, the App Association represents more than 5,000 app companies and information technology firms across the mobile economy; (August 26th, 2020, “Save Our Standards: The Ninth Circuit Court of Appeals Reverses Decision in FTC v. Qualcomm”, <https://actonline.org/2020/08/26/save-our-standards-the-ninth-circuit-court-of-appeals-reverses-decision-in-ftc-v-qualcomm/>), ability edited

Moreover, the FRAND agreement is a critical tool used by standard setting organizations to ensure the process enhances competition and does not run afoul of antitrust laws. Generally, a collaboration between competitors to choose market winners or set prices raises significant questions for competition regulators. Royalty free and FRAND licensing requirements were created by standards bodies to avoid potential antitrust scrutiny by limiting the market power and the potential for abuse by those involved in developing a standard. This is why the American National Standards Institute (ANSI) will not accredit any standards developing organization (SDO) that does not require standard-essential patent holders to provide licensing terms at least as favorable as FRAND.

The most important beneficiary of open interoperability standards and FRAND licensing requirements are the entrepreneurs and small businesses that have long fueled America’s innovation engine. They don’t have giant patent portfolios, market power, or the resources to hire legions of lawyers and spend years battling SEP abusers in civil court. Without some level of certainty about their ability to obtain licenses—let alone what they may cost—entrepreneurs will have trouble justifying the pursuit of any innovation that uses a standard and will certainly struggle to raise money from investors for such innovation. And Qualcomm’s vague and toothless promise simply “not to sue” smaller companies and component makers is no substitute for a license.

The adoption of 5G technology is expected to open unprecedented opportunities for innovation and economic growth as we move toward a world where everything from cars to tractors to buildings will connect to wireless networks. At every stage of the information technology revolution, America has been the undisputed leader because of the unparalleled entrepreneurial innovation ecosystem that we have built. If 5G SEP holders are able to arbitrarily refuse licenses to smaller firms, it would ~~cripple~~ undermine America’s innovation ecosystem at the start of the next big wave of innovation. As economic tensions continue to rise with China, Chinese-based companies could use their 5G SEPs as international economic weapons to thwart U.S. competitors.

The 5G standard is supposed to be a platform for competition, innovation, and entrepreneurship, but if the Ninth Circuit decision is allowed to stand, it will become a chokepoint for snuffing out competitors and demanding monopoly rents. Open standards and FRAND licensing commitments are fundamental to competition in the modern economy, and the idea that they aren’t a subject for antitrust enforcement is patently absurd.

#### A trusted and credible system for ICT innovation is critical to rapid tech diffusion and economic growth---absent FRAND, the system will collapse.

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It is easy to take a pessimistic view about whether the system will break. If the current trend continues, the system is likely to break at some point for the simple reason that companies will not trust it anymore. The series of legal disputes witnessed over the past years – sometimes referred to as the “smartphone patent wars” – has been fodder for a pessimistic reading of “the two tales of SEPs”. While it is common in the business world that disputes over patents and licenses are settled in courts, various SEP disputes have revealed problematic aspects of the SEP market that are different from those disputes that follow the normal stream of business and contracts. Often, the SEP disputes are less concerned about the rights and boundaries of patents, and more about antitrust limits to market behavior: they concern market abusive practices and restrictions to competition as much as they are about intellectual property.

If the SEP system actually does break at some point, the consequences would be felt throughout the economy. SEPs have been a critical part of the ICT revolution. SEPs have allowed for the fast rates of innovation diffusion that the world has witnessed over the past quarter of a century. All the computer and Internet related products and services that people are now dependent upon for their private and professional lives are intricate webs of intellectual property. As many as 250,000 patents can be used to claim ownership of some technical specification or design element in a single smartphone (NYT 2012). A laptop, suggests one calculation, implements more than 250 interoperability standards (Biddle et al. 2010), and the number of SEP holders for 3G and 4G standards grew from 2 in 1994 to 130 in 2013 while the number of SEPs rose from fewer than 150 in 1994 to more than 150,000 in 2013 (Galetovic and Gupta 2016). The standardization-body ETSI has registered more than 150,000 declarations of SEPs from companies, and ETSI is just one of many bodies in the world of ICT standardization. For the 3G standard, the same body has about 24,000 patents that have been declared essential. Now, with the economy yet again on the threshold of big technological change, a trusted and credible system for creators and users of technology to standardize proprietary technology would be a boon for innovation, interoperability and – ultimately – the consumers.

And there are reasons for optimism. Although many of the problems in the SEP regimes need to be addressed, the numbers above indicate that the SEP system is in fact attractive to patent holders and SEP implementers. It is easy to see why: neither holders nor implementers are presented with alternative options that on the face of it would be far more profitable for them. In other words, there simply would not be as many patents declared as essential if both creators and users of technology believed the SEP system worked to their disadvantage or was grossly unfair. While the reality for some companies may be that legal disputes and unpredictability prompt them to find other ways than SEPs to get access to key technologies for their products, it remains the case that most stakeholders have strong economic incentives to maintain a balanced SEP system that is trusted.

First, standard essential patents are an asset for creators of technology because, by becoming essential to a standard, their volumes of sales for technologies that users value rise significantly. As many holders want to raise more revenues for their SEPs and – ideally – have the freedom to contract with buyers on their terms, they can expand their customer base when they agree to sell patented technology in accordance with a set of rules that are designed to prevent SEP holders exploiting the weakness of a customer that has grown dependent on having access to their technology.

Second, SEPs are hugely beneficial also to those that buy the licenses – the implementers or users. Through the SEP system, they can access technologies that are interoperable and work with different products and functionalities – and they can do it under conditions that, if history is a guide, in most cases give them stable and predictable terms of contract. As a consequence, both creators and users can focus on their competitive advantages and profit on the economies of scale and specialization. Downstream firms do not need to develop their own upstream technology and upstream firms do not need to package their technologies in end-customer products in order to make their products valuable.

Third, standard-setting organisations (SSOs) also have a big stake in an SEP system that works well – and, like creators and users of technology, they would stand to lose significantly if the SEP system were to collapse.

Lastly, the biggest beneficiaries are individual consumers – those who buy the end products using FRAND-conditioned SEPs. The advent of SEPs and the rules represented by FRAND have enabled a development of fast technology creation and contributed to the rapid diffusion in ICT goods and ICT-based services. The SEP system has also allowed for new competition, both between existing technologies and brands, and from new ones that have stepped into the market with the ambition to disrupt it, again to the benefit of the consumer. It is difficult to imagine that the ICT and digital development would have been as fast as it has been if SEPs had not been a central feature of the market.

The changing fortunes of companies operating in the cellular and smartphone market would not have been possible if there had not been an SEP system that supported competition. Now that the world economy is on the doorstep of new innovations that are dependent on a great number of input technologies – e.g. the Internet-of-Things, transport connectivity and intelligent vehicles – it is crucially important for the consumer that a balanced and functioning SEP system is maintained and that actors in the system converge towards it – which would ultimately meet their economic interests.

#### ICT innovation is key to post-COVID economic recovery and long-term growth.

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Introduction

As the global economy has entered recession in 2020, triggered by the COVID-19 pandemic, the human casualties, and economic damage are perceived to be very large. Even as the health crisis will gradually become manageable, the impact on economic growth can be long-lasting and the recovery path can take several years. In particular, growth drivers such as the pace of job creation, income generation and investment may take several years to get back to pre-crisis trends. Initially the productivity of those growth drivers may be of less concern as the mantra of ‘we’ll do what it takes to avoid worse’ is predominant in this phase of the crisis.

However, once the recovery gets underway the productive use of resources is key to sustained growth. While we do not ignore the short-term challenges of the economic recovery, our primary focus in this paper is on the productivity puzzle from a long-term perspective. Productivity is driven by technological change and innovation which, in turn, depends on investment in human and physical capital as well as in other ‘missing capitals’ often referred to as intangible assets. Indeed, those investments create a positive feedback effect, as the productivity it generates also helps to make more efficient usage of scarce resources in the future. When properly measured and valued, productivity also provides a critical yardstick to realise a fairer distribution of the gains from economic growth to those who bring the resources to bear. It thereby creates the incentives for people to produce and business to invest helping to drive economic growth and raise living standards.

Unfortunately, in the aftermath of the global financial crisis of 2008/2009, many economies around the world, especially advanced economies, have failed to recharge the economy by powering productivity as the key source of growth in the long term. Indeed the latest update of The Conference Board Total Economy Database (July 2020) points at significant weakening in labor productivity growth in Europe up to 2019 (figure 1a–c). While the United States experienced somewhat faster productivity growth from 2017 to 2019 than the Euro Area and the United Kingdom, it still has not recovered to the rates of productivity growth from before the global financial crisis either.

The slowdown in productivity growth over the past 15 years has been well documented. There are multiple causes including an exhaustion of catch-up potential in emerging markets impacting economies along entire global value chains, and the drag from the global financial crisis because of low demand and weak investment, too low interest rates causing misallocations an overreliance on cheap labor, and failing fiscal policies (Bauer et al., 2020; Cette et al., 2016; Crafts, 2018; Dieppe, 2020; Fernald et al., 2017; Syverson, 2016).1 Technical measurement issues regarding inputs and outputs may have played a role as well.

In our earlier work we have stressed the importance of time lags in the adoption of new technologies, and in particular the complexity in generating productivity growth from the latest round of new digital technologies since the early 2010s, including the move toward mobile, ubiquitous access to broadband, the rise of cloud storage and advances in artificial intelligence (AI) and robotics (van Ark, 2016a, 2016b; van Ark and O’Mahony, 2016; van Ark et al., 2016).

While the first priority for economic recovery from the COVID-19 crisis is to restore jobs, it is important that any employment-intensive growth path does go together with a productivity revival. In this paper, we argue that it is possible to avoid another productivity slowdown. Underneath the aggregate figures, there is evidence pointing toward a possible tipping point at which many advanced economies may expect to see more widespread impacts from the adoption and absorption of digital technology on productivity and GDP growth.

In Section 2 we review the latest literature on the productivity impacts of general purpose technologies (GPTs), including the notion of time lapses through which digital technologies result in faster productivity growth. We also look at patterns by which innovation and productivity effects GPTs emerge across industries and disperse across the economy. We explain why the New Digital Economy (NDE) is especially characterised by long lag effects.

In Section 3 we provide an empirical analysis of productivity growth by industry data to observe whether we can detect a distinct pattern across groups of industries pointing to a structural improvement in recent years. We use a taxonomy on digital intensity by industry which was recently developed by the Organisation for Economic Co-operation and Development (OECD) (Calvino et al., 2018), showing that the most digital-intensive industries have experienced a relatively strong performance in terms of labor productivity growth since 2007 and especially since 2013.

In Section 4 of the paper, we discuss the connection between labor and skills in the digital economy, which we believe provides the key to a productivity revival. We developed a new metric on innovation competencies by occupation on the basis of data from the O\*Net database on occupation-specific descriptors in the United States (Hao et al., 2018). When applied to the United Kingdom, we find that innovation competencies point at stronger productivity effects by industry.

In Section 5 we focus on how productivity has been behaving in the short-term during the COVID-19 recession. In particular, we address the potential trade-offs between traditional pro-cyclical recovery effects and scarring effects the recession leaves, especially on the labor market. We argue that increased adoption and usage of digital technologies during the COVID-19 crisis may create a positive productivity effect. In the final section, Section 6, we will review our hypothesis that a productivity revival could be imminent in the light of the recovery from the COVID-19 crisis. In order not to miss this opportunity again, as happened a decade ago, we argue that a coordinated effort from business and policy is needed, and has to be delivered in such a way that the gains from productivity will be more widespread and such that those who provide the resources for growth are incentivised to deliver them in an efficient way.

2. The productivity paradox of the New Digital Economy

It is well known that General Purpose Technologies (GPTs), defined as new methods of producing and inventing new goods and services which are important enough to have a long-term aggregate impact on the economy, can take a significant amount of time to translate to faster productivity growth at the aggregate level of the economy. This is inherent to the three critical characteristics of a GPT as identified by Bresnahan and Trajtenberg (1995).2

1. Pervasiveness –The GPT should spread to most sectors.

2. Improvement –The GPT should get better over time and, hence, should keep lowering the costs of its users.

3. Innovation spawning –The GPT should make it easier to invent and produce new products or processes.

Historical analysis has focussed on productivity trends in previous technology phases (Bakker et al., 2019; Crafts, 2004). Recent literature has shown that the information and communication technology (ICT) revolution of the past 50 years can be characterised as a GPT and doesn’t pale with previous GPTs such as steam technology, electricity and the combustion engine. For example, Hempell (2005) concludes that ‘investment in information and communication technologies (ICT) are closely linked to complementary innovations and are most productive in firms with experience from earlier innovations’. In a more recent analysis of the evolution of the Internet, Simcoe (2015) argues that the modularity of the internet has prevented a fall in return to investments in innovation by ‘facilitating low-cost adaptation of a shared general-purpose technology to the demands of heterogeneous applications’. In a review of the data, Liao et al. (2016) conclude that:

‘...ICT investment does contribute to productivity but not in the usual manner –we find a positive (but lagged) ICT effect on technological progress. We argue that for a positive ICT role on growth to actually take place, a period of negative relationship between productivity and ICT investment together with ICT-using sectors’ capacity to learn from the embodied new technology was crucial. In addition, it took a learning period with appropriate complementary co-inventions for the new ICT-capital to become effective and its gains to be realised. Our findings provide solid, further empirical evidence to support ICT as a general purpose technology’.

#### Growth solves nuclear war.

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What Is To Be Done?

The first marching order is to dodge any kind of perpetual war of the sort that George Orwell outlined in  “1984,” which engulfed the three super states of Eastasia, Eurasia, and Oceania, and made possible the totalitarian Big Brother regime. A long-running Cold War-type confrontation would almost certainly take another form than the one that ran from 1945 until the downfall of the Soviet Union.

What prescriptions can be offered in the face of the escalating competition among the three global powers? First, by staying militarily and economically strong, the United States will have the resources to deter its peers’ hawkish behavior that might otherwise trigger a major conflict. Judging by the history of the Cold War, the coming strategic chess match with Russia and China will prove tense and demanding—since all the countries boast nuclear arms and long-range ballistic missiles. Next, the United States should widen and sustain willing coalitions of partners, something at which America excels, and at which China and Russia fail conspicuously.

There can be little room for error in fraught crises among nuclear-weaponized and hostile powers. Short- and long-term standoffs are likely, as they were during the Cold War. Thus, the playbook, in part, involves a waiting game in which each power looks to its rivals to suffer grievous internal problems which could entail a collapse, as happened to the Soviet Union.

Some Chinese and Russian experts predict grave domestic problems for each other. They also entertain similar thoughts about the United States, which they view as terminally decadent and catastrophically polarized over politics, ethnicity, and the future direction of the country. So, the brewing three-way struggle also involves a systemic contest, which will test the competitors’ economic and political institutions.

At this juncture, the world is entering a standoff among the three great and several not-so-great powers. Averting war, while defending our interests, will prove a challenge, calling for deft policy, political endurance, and economic growth, as well as sufficient military force to keep at bay aggressive states or prevail over them if ever a war breaks out.

#### Slow growth goes nuclear---unravels interdependence, hastens multipolarity, and invigorates nationalism.

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The rise of nationalism/populism is both cause and effect of this economic outlook. Lower growth will make every aspect of the liberal order more difficult to resuscitate post-Trump. Domestic politics will become more polarized and dysfunctional, as competition for diminishing resources intensifies. International collaboration, ad hoc or through institutions, will become politically toxic. Protectionism, in its multiple forms, will make economic recovery from “secular stagnation” a heavy lift, and the liberal hegemonic leadership and strong institutions that limited the damage of previous downturns, will be unavailable. A clear demonstration of this negative feedback loop is the economic damage being inflicted on the world by Trump’s trade war with China, which— despite the so-called phase one agreement—has predictably escalated from negotiating tactic to imbedded reality, with no end in sight. In a world already suffering from inadequate investment, the uncertainties generated by this confrontation will further curb the investments essential for future growth. Another demonstration of the intersection of structural forces is how populist-motivated controls on immigration (always a weakness in the hyper-globalization narrative) deprives developed countries of Summers’ recommended policy response to secular stagnation, which in a more open world would be a win-win for rich and poor countries alike, increasing wage rates and remittance revenues for the developing countries, replenishing the labor supply for rich countries experiencing low birth rates. Illiberal Globalization Economic weakness and rising nationalism (along with multipolarity) will not end globalization, but will profoundly alter its character and greatly reduce its economic and political benefits. Liberal global institutions, under American hegemony, have served multiple purposes, enabling states to improve the quality of international relations and more fully satisfy the needs of their citizens, and provide companies with the legal and institutional stability necessary to manage the inherent risks of global investment. But under present and future conditions these institutions will become the battlegrounds—and the victims—of geopolitical competition. The Trump Administration’s frontal attack on multilateralism is but the final nail in the coffin of the Bretton Woods system in trade and finance, which has been in slow but accelerating decline since the end of the Cold War. Future American leadership may embrace renewed collaboration in global trade and finance, macroeconomic management, environmental sustainability and the like, but repairing the damage requires the heroic assumption that America’s own identity has not been fundamentally altered by the Trump era (four years or eight matters here), and by the internal and global forces that enabled his rise. The fact will remain that a sizeable portion of the American electorate, and a monolithically pro-Trump Republican Party, is committed to an illiberal future. And even if the effects are transitory, the causes of weakening global collaboration are structural, not subject to the efforts of some hypothetical future US liberal leadership. It is clear that the US has lost respect among its rivals, and trust among its allies. While its economic and military capacity is still greatly superior to all others, its political dysfunction has diminished its ability to convert this wealth into effective power.13 It will furthermore operate in a future system of diffusing material power, diverging economic and political governance approaches, and rising nationalism. Trump has promoted these forces, but did not invent them, and future US Administrations will struggle to cope with them. What will illiberal globalization look like? Consider recent events. The instruments of globalization have been weaponized by strong states in pursuit of their geopolitical objectives. This has turned the liberal argument on behalf of globalization on its head. Instead of interdependence as an unstoppable force pushing states toward collaboration and convergence around market-friendly domestic policies, states are exploiting interdependence to inflict harm on their adversaries, and even on their allies. The increasing interaction across national boundaries that globalization entails, now produces not harmonization and cooperation, but friction and escalating trade and investment disputes.14 The Trump Administration is in the lead here, but it is not alone. Trade and investment friction with China is the most obvious and damaging example, precipitated by China’s long failure to conform to the World Trade Organization (WTO) principles, now escalated by President Trump into a trade and currency war disturbingly reminiscent of the 1930s that Bretton Woods was designed to prevent. Financial sanctions against Iran, in violation of US obligations in the Joint Comprehensive Plan Of Action (JCPOA), is another example of the rule of law succumbing to geopolitical competition. Though more mercantilist in intent than geopolitical, US tariffs on steel and aluminum, and their threatened use in automotives, aimed at the EU, Canada, and Japan,15 are equally destructive of the liberal system and of future economic growth, imposed as they are by the author of that system, and will spread to others. And indeed, Japan has used export controls in its escalating conflict with South Korea16 (as did China in imposing controls on rare earth,17 and as the US has done as part of its trade war with China). Inward foreign direct investment restrictions are spreading. The vitality of the WTO is being sapped by its inability to complete the Doha Round, by the proliferation of bilateral and regional agreements, and now by the Trump Administration’s hold on appointments to WTO judicial panels. It should not surprise anyone if, during a second term, Trump formally withdrew the US from the WTO. At a minimum it will become a “dead letter regime.”18 As such measures gain traction, it will become clear to states—and to companies—that a global trading system more responsive to raw power than to law entails escalating risk and diminishing benefits. This will be the end of economic globalization, and its many benefits, as we know it. It represents nothing less than the subordination of economic globalization, a system which many thought obeyed its own logic, to an international politics of zero-sum power competition among multiple actors with divergent interests and values. The costs will be significant: Bloomberg Economics estimates that the cost in lost US GDP in 2019- dollar terms from the trade war with China has reached $134 billion to date and will rise to a total of $316 billion by the end of 2020.19 Economically, the just-in-time, maximally efficient world of global supply chains, driving down costs, incentivizing innovation, spreading investment, integrating new countries and populations into the global system, is being Balkanized. Bilateral and regional deals are proliferating, while global, nondiscriminatory trade agreements are at an end. Economies of scale will shrink, incentivizing less investment, increasing costs and prices, compromising growth, marginalizing countries whose growth and poverty reduction depended on participation in global supply chains. A world already suffering from excess savings (in the corporate sector, among mostly Asian countries) will respond to heightened risk and uncertainty with further retrenchment. The problem is perfectly captured by Tim Boyle, CEO of Columbia Sportswear, whose supply chain runs through China, reacting to yet another ratcheting up of US tariffs on Chinese imports, most recently on consumer goods: We move stuff around to take advantage of inexpensive labor. That’s why we’re in Bangladesh. That’s why we’re looking at Africa. We’re putting investment capital to work, to get a return for our shareholders. So, when we make a wager on investment, this is not Vegas. We have to have a reasonable expectation we can get a return. That’s predicated on the rule of law: where can we expect the laws to be enforced, and for the foreseeable future, the rules will be in place? That’s what America used to be.20 The international political effects will be equally damaging. The four structural forces act on each other to produce the more dangerous, less prosperous world projected here. Illiberal globalization represents geopolitical conflict by (at first) physically non-kinetic means. It arises from intensifying competition among powerful states with divergent interests and identities, but in its effects drives down growth and fuels increased nationalism/populism, which further contributes to conflict. Twenty-first-century protectionism represents bottom-up forces arising from economic disruption. But it is also a top-down phenomenon, representing a strategic effort by political leadership to reduce the constraints of interdependence on freedom of geopolitical action, in effect a precursor and enabler of war. This is the disturbing hypothesis of Daniel Drezner, argued in an important May 2019 piece in Reason, titled “Will Today’s Global Trade Wars Lead to World War Three,”21 which examines the pre-World War I period of heightened trade conflict, its contribution to the disaster that followed, and its parallels to the present: Before the First World War started, powers great and small took a variety of steps to thwart the globalization of the 19th century. Each of these steps made it easier for the key combatants to conceive of a general war. We are beginning to see a similar approach to the globalization of the 21st century. One by one, the economic constraints on military aggression are eroding. And too many have forgotten—or never knew—how this played out a century ago. …In many ways, 19th century globalization was a victim of its own success. Reduced tariffs and transport costs flooded Europe with inexpensive grains from Russia and the United States. The incomes of landowners in these countries suffered a serious hit, and the Long Depression that ran from 1873 until 1896 generated pressure on European governments to protect against cheap imports. …The primary lesson to draw from the years before 1914 is not that economic interdependence was a weak constraint on military conflict. It is that, even in a globalized economy, governments can take protectionist actions to reduce their interdependence in anticipation of future wars. In retrospect, the 30 years of tariff hikes, trade wars, and currency conflicts that preceded 1914 were harbingers of the devastation to come. European governments did not necessarily want to ignite a war among the great powers. By reducing their interdependence, however, they made that option conceivable. …the backlash to globalization that preceded the Great War seems to be reprised in the current moment. Indeed, there are ways in which the current moment is scarier than the pre-1914 era. Back then, the world’s hegemon, the United Kingdom, acted as a brake on economic closure. In 2019, the United States is the protectionist with its foot on the accelerator. The constraints of Sino-American interdependence—what economist Larry Summers once called “the financial balance of terror”—no longer look so binding. And there are far too many hot spots—the Korean peninsula, the South China Sea, Taiwan—where the kindling seems awfully dry. Multipolarity We can define multipolarity as a wide distribution of power among multiple independent states. Exact equivalence of material power is not implied. What is required is the possession by several states of the capacity to coerce others to act in ways they would otherwise not, through kinetic or other means (economic sanctions, political manipulation, denial of access to essential resources, etc.). Such a distribution of power presents inherently graver challenges to peace and stability than do unipolar or bipolar power configurations,22 though of course none are safe or permanent. In brief, the greater the number of consequential actors, the greater the challenge of coordinating actions to avoid, manage, or de-escalate conflicts. Multipolarity also entails a greater potential for sudden changes in the balance of power, as one state may defect to another coalition or opt out, and as a result, the greater the degree of uncertainty experienced by all states, and the greater the plausibility of downside assumptions about the intentions and capabilities of one’s adversaries. This psychology, always present in international politics but particularly powerful in multipolarity, heightens the potential for escalation of minor conflicts, and of states launching preventive or preemptive wars. In multipolarity, states are always on edge, entertaining worst-case scenarios about actual and potential enemies, and acting on these fears—expanding their armies, introducing new weapon systems, altering doctrine to relax constraints on the use of force—in ways that reinforce the worst fears of others. The risks inherent in multipolarity are heightened by the attendant weakening of global institutions. Even in a state-centric system, such institutions can facilitate communication and transparency, helping states to manage conflicts by reducing the potential for misperception and escalation toward war. But, as Waheguru Pal Singh Sidhu argues in his chapter on the United Nations, the influence of multilateral institutions as agent and actor is clearly in decline, a result of bottom-up populist/nationalist pressures experienced in many countries, as well as the coordination problems that increase in a system of multiple great powers. As conflict resolution institutions atrophy, great powers will find themselves in “security dilemmas”23 in which verification of a rival’s intentions is unavailable, and worst-case assumptions fill the gap created by uncertainty. And the supply of conflicts will expand as a result of growing nationalism and populism, which are premised on hostility, paranoia, and isolation, with governments seeking political legitimacy through external conflict, producing a siege mentality that deliberately cuts off communication with other states. Finally, the transition from unipolarity (roughly 1989–2007) to multipolarity is unregulated and hazardous, as the existing superpower fears and resists challenges to its primacy from a rising power or powers, while the rising power entertains new ambitions as entitlements now within its reach. Such a “power transition” and its dangers were identified by Thucydides in explaining the Peloponnesian Wars,24 by Organski (the “rear-end collision”)25 during the Cold War, and recently repopularized and brought up to date by Graham Allison in predicting conflict between the US and China.26 A useful, and consequential illustration of the inherent challenge of conflict management during a power transition toward multipolarity, is the weakening of the arms control regime negotiated by the US and the Soviet Union during the Cold War. Despite the existential, global conflict between two nuclear armed superpowers embracing diametrically opposed world views and operating in economic isolation from each other, the two managed to avoid worst-case outcomes. They accomplished this in part by institutionalizing verifiable limits on testing and deployment of both strategic and intermediate-range nuclear missiles. Yet as diplomatically and technically challenging as these achievements were, the introduction of a third great power, China, into this two-country calculus has proven to be a deal breaker. Unconstrained by these bilateral agreements, China has been free to build up its capability, and has taken full advantage in ramping up production and deployment of intermediate-range ground-launched cruise missiles, thus challenging the US ability to credibly guarantee the security of its allies in Asia, and greatly increasing the costs of maintaining its Asian regional hegemony. As a result, the Intermediate Nuclear Force treaty is effectively dead, and the New Start Treaty, covering strategic missiles, is due to expire next year, with no indication of any US–Russian consensus to extend it. The US has with logic indicated its interest in making these agreements trilateral; but China, with its growing power and ambition, has also logically rejected these overtures. Thus, all three great powers are entering a period of nuclear weapons competition unconstrained by the major Cold War arms control regimes. In a period of rapid advances in technology and worsening great power relations, the nuclear competition will be a defining characteristic of the next decade and beyond. This dynamic will also complicate nuclear nonproliferation efforts, as both the demand for nuclear weapons (a consequence of rising regional and global insecurity), and supply of nuclear materials and technology (a result of the weakening of the nonproliferation regime and deteriorating great power relations) will increase. Will deterrence prevent war in a world of several nuclear weapons states, (the current nuclear powers plus South Korea, Iran, Saudi Arabia, Japan, Turkey), as it helped to do during the bipolar Cold War? Some neorealist observers view nuclear weapons proliferation as stabilizing, extending the balance of terror, and the imperative of restraint, to new nuclear weapons states with much to fight over (Saudi Arabia and Iran, for example).27 Others,28 examining issues of command and control of nuclear weapons deployment and use by newly acquiring states, asymmetries in doctrines, force structures, and capabilities between rivals, the perils of variable rates in transition to weapons deployment, problems of communication between states with deep mutual grievances, the heightened risk of transfer of such weapons to non-state actors, have grave doubts about the safety of a multipolar, nuclear-armed world.29 We can at least conclude that prudence dictates heightened efforts to slow the pace of proliferation, while realism requires that we face a proliferated future with eyes wide open. The current distribution of power is not perfectly multipolar. The US still commands the world’s largest economy, and its military power is unrivaled by any state or combination of states. Its population is still growing, despite a recent decline in birth rates. It enjoys extraordinary geographic advantages over its rivals, who are distant and live in far worse neighborhoods. Its economy is less dependent on foreign markets or resources. Its political system has proven—up to now—to be resilient and adaptable. Its global alliance system greatly extends its capacity to defend itself and shape the world to its liking and is still intact, despite growing doubts about America’s reliability as a security guarantor. Based on these mostly material and historical criteria, continued American primacy would seem to be a good bet, if it chooses to use its power in this way.30 So why multipolarity? The clearest and most frequently cited evidence for a widening distribution of global power away from American unipolarity is the narrowing gap in GDP between the US and China. The IMF’s World Economic Outlook forecasts a $0.9 trillion increase in US GDP for 2019–2020, and a $1.3 trillion increase for China in the same period.31 Many who support the American primacy case argue that GDP is an imperfect measure of power, that Chinese GDP data is inflated, that its growth rates are in decline while Chinese debt is rapidly increasing, and that China does poorly on other factors that contribute to power—its low per capita GDP, its political succession challenges, its environmental crisis, its absence of any external alliance system. Yet GDP is a good place to start, as the single most useful measure and long-term predictor of power. It is from the overall economy that states extract and apply material power to leverage desired behavior from other states. It is true that robust future Chinese growth is not guaranteed, nor is its capacity to convert its wealth to power, which is a function of how well its political system works over time. But this is equally the case for the US, and considering recent political developments is not a given for either country. As an alternative to measuring inputs—economic size, political legitimacy, technological innovation, population growth—in assessing relative power and the nature of global power distribution, we should consider outputs: what are states doing with their power? The input measures are useful, possibly predictive, but are usually deployed in the course of making a foreign policy argument, sometimes on behalf of a reassertion of American primacy, sometimes on behalf of retrenchment. As such, their objectivity (despite their generous deployment of “data”) is open to question. What is undeniable, to any clear-eyed observer, is a real decline in American influence in the world, and a rise in the influence of other powers, which predates the Trump administration but has accelerated into America’s free fall over the last four years. This has produced a de facto multipolarity, whether explainable in the various measures of power—actual and latent—or not. This decline results in part from policy mistakes: a reckless squandering of material power and legitimacy in Iraq, an overabundance of caution in Syria, and now pure impulsivity. But more fundamentally, it is a product of relative decline in American capacity—political and economic—to which American leadership is adjusting haphazardly, but in the direction of retrenchment/restraint. It is highly revealing that the last two American presidents, polar opposites in intellect, temperament and values, agreed on one fundamental point: the US is overextended, and needs to retrench. The fact that neither Obama nor Trump (up to this point in his presidency) believed they had the power at their disposal to do anything else, tells us far more about the future of American power and policy—and about the emerging shape of international relations—than the power measures and comparisons made by foreign policy advocates. Observation of recent trends in US versus Russian relative influence prompts another question: do we understand the emerging characteristics of power? Rigorously measuring and comparing the wrong parameters will get us nowhere at best and mislead us into misguided policies at worst. How often have we heard, with puzzlement, that Putin punches far above his weight? Could it be that we misunderstand what constitutes “weight” in the contemporary and emerging world? Putin may be on a high wire, and bound to come crashing down; but the fact is that Russian influence, leveraging sophisticated communications/social media/influence operations, a strong military, an agile (Putin-dominated) decision process, and taking advantage of the egregious mistakes by the West, has been advancing for over a decade, shows no sign of slowing down, and has created additional opportunities for itself in the Middle East, Europe, Asia, Latin America, the Arctic. It has done this with an economy roughly the size of Italy’s. There are few signs of a domestic political challenge to Putin. His external opponents are in disarray, and Russia’s main adversary is politically disabled from confronting the problem. He has established Russia as the Middle East power broker. He has reached into the internal politics of his Western adversaries and influenced their leadership choices. He has invaded and absorbed the territory of neighboring states. His actions have produced deep divisions within NATO. Again, simple observation suggests multipolarity in fact, and a full explanation for this power shift awaiting future historians able to look with more objectivity at twenty-first-century elements of power. When that history is written, surely it will emphasize the extraordinary polarization in American politics. Was multipolarity a case of others finding leverage in new sources of power, or the US underutilizing its own? The material measures suggest sufficient capacity for sustained American primacy, but with this latent capacity unavailable (as perceived, I believe correctly, by political leadership) by virtue of weakening institutions: two major parties in separate universes; a winner-take-all political mentality; deep polarization between the parties’ popular bases of support; divided government, with the Presidency and the Congress often in separate and antagonistic hands; diminishing trust in the permanent government, and in the knowledge it brings to important decisions, and deepening distrust between the intelligence community and policymakers; and, in Trump’s case, a chaotic policy process that lacks any strategic reference points, mis-communicates the Administration’s intentions, and has proven incapable of sustained, coherent diplomacy on behalf of any explicit and consistent set of policy goals. Rising Nationalism/Populism/Authoritarianism The evidence for these trends is clear. Freedom House, the go-to authority on the state of global democracy, just published its annual assessment for 2020, and recorded the fourteenth consecutive year of global democratic decline and advancing authoritarianism. This dramatic deterioration includes both a weakening in democratic practice within states still deemed on balance democratic, and a shift from weak democracies to authoritarianism in others. Commitment to democratic norms and practices—freedom of speech and of the press, independent judiciaries, protection of minority rights—is in decline. The decline is evident across the global system and encompasses all major powers, from India and China, to Europe, to the US. Right-wing populist parties have assumed power, or constitute a politically significant minority, in a lengthening list of democratic states, including both new (Hungary, Poland) and established (India, the US, the UK) democracies. Nationalism, frequently dismissed by liberal globalization advocates as a weak force when confronted by market democracies’ presumed inherent superiority, has experienced a resurgence in Russia, China, the Middle East, and at home. Given the breadth and depth of right-wing populism, the raw power that promotes it—mainly Russian and American—and the disarray of its liberal opponents, this factor will weigh heavily on the future. The major factors contributing to right-wing populism and its global spread is the subject of much discussion.32 The most straightforward explanation is rising inequality and diminished intergenerational mobility, particularly in developed countries whose labor-intensive manufacturing has been hit hardest by the globalization of capital combined with the immobility of labor. Jobs, wages, economic security, a reasonable hope that one’s offspring has a shot at a better life than one’s own, the erosion of social capital within economically marginalized communities, government failure to provide a decent safety net and job retraining for those battered by globalization: all have contributed to a sense of desperation and raw anger in the hollowed-out communities of formerly prosperous industrial areas. The declining life expectancy numbers33 tell a story of immiseration: drug addition, suicide, poor health care, and gun violence. The political expression of such conditions of life should not be surprising. Simple, extremist “solutions” become irresistible. Sectarian, racial, regional divides are strengthened, and exclusive identities are sharpened. Political entrepreneurs offering to blow up the system blamed for such conditions become credible. Those who are perceived as having benefited from the corrupt system—long-standing institutions of government, foreign countries and populations, immigrants, minorities getting a “free ride,” elites—become targets of recrimination and violence. The simple solutions of course, don’t work, deepening the underlying crisis, but in the process politics is poisoned. If this sounds like the US, it should, but it also describes major European countries (the UK, France, Italy, Germany, Poland, Hungary, the Czech Republic), and could be an indication of things to come for non-Western democracies like India. We have emphasized throughout this chapter the interaction of four structural forces in shaping the future, and this interaction is evident here as well. Is it merely coincidence that the period of democratic decline documented by Freedom House, coincides precisely with the global financial and economic crisis? Lower growth, increasing joblessness, wage stagnation, superimposed on longer-term widening of inequality and declining mobility, constitute a forbidding stress test for democratic systems, and many continue to fail. And if we are correct about secular stagnation, the stress will continue, and authoritarianism’s fourteen-year run will not be over for some time. The antidemocratic trend will gain additional impetus from the illiberal direction of globalization, with its growth suppressing protectionism, weaponization of global economic exchange, and weakening global economic institutions. Multipolarity also contributes, in several ways. The former hegemon and author of globalization’s liberal structure has lost its appetite, and arguably its capacity, for leadership, and indeed has become part of the problem, succumbing to and promoting the global right-wing populist surge. It is suffering an unprecedented decline in life expectancy, and recently a decline in the birth rate, signaling a degree of rot commonly associated with a collapsing Soviet Union. While American politics may once again cohere around its liberal values and interests, the time when American leadership had the self-confidence to shape the global system in its liberal image is gone. It may build coalitions of the like-minded to launch liberal projects, but there will be too much power outside these coalitions to permit liberal globalization of the sort imagined at the end of the Cold War. In multipolarity, the values around which global politics revolve will reflect the diversity of major powers, their interests, and the norms they embrace. Convergence of norms, practices, policies is out of the question. Global collective action, even in the face of global crises, will be a long shot. To expect anything else is fantasy. Unbrave New World and Future Challenges At the outset of this chapter we described these structural forces as interacting to produce more conflict and diminished prosperity. We also predicted a world with shrinking collective capacity to address new challenges as they arise. What specifically will such a world look like? We address below three principal challenges to global problem solving over the next decade. Interstate Conflict In the world experienced by most readers of this volume, conflict is observed within weak states, sometimes promoted by regional competitors, by terrorist groups, or by great powers, acting through surrogates or by indirect means. Sometimes, as in Syria, this conflict spills over to contiguous states and contributes to regional instability, and challenges other regions to respond effectively, a challenge that Europe has not met. Much of this will continue, but the global significance of such local conflicts will be greatly magnified by increasing great power conflict, which will feed—rather than manage or resolve—local instabilities and will in turn be exacerbated by them. Great powers will jockey for advantage, support their local partners, escalate preemptively. Conflicts initially confined to failing states or unstable regions will be redefined by great powers as global in scope and significance. This tendency of states to view local conflicts in the context of a zero-sum, global struggle for power is familiar to students of the Cold War, but now with the additional challenges to collective action, expanded uncertainty and worst-case thinking associated with the power transition to multipolarity. We can easily observe increased conflict in US-China relations, as we will in US-Russia relations as future US administrations try to make up for ground lost during the Trump presidency, especially in the Middle East. We can observe it among powerful states with mutual historical grievances, now with a weakening presence of the hegemonic security guarantor and having to consider the renationalization of their defense: Japan-South Korea, Germany-France. We can observe it among historical rivals operating in rapidly changing security landscapes: India-China. We can observe it within the Middle East, as internal rivalries are appropriated by regional powers in a contest for regional dominance. We can observe it clearly in Syria, where the regime’s violent suppression of Arab Spring resistance led to all-out civil war, attracted outside support to proxy forces by aspiring regional hegemons Saudi Arabia and Iran, enabled the rise of ISIS, and eventually to great power intervention, principally by Russia. In a world of effective great power collaboration or American primacy, the Syrian civil war might have been settled through power sharing or partition, or if not, contained within Syria. The collapse of Yugoslavia, occurring during a period of US “unipolarity” and managed effectively, demonstrates the possibilities. Instead, with the US retrenching, Middle East rivals unconstrained by great powers, and great power competition rising, the Syria civil war was fed by outside powers, then metastasized into the region, and—in the form of refugee flows—into Europe, fundamentally altering European politics. Libya may be at the early stages of this scenario. This is not the end of the Syria story. Russia has established itself as a major player in Syria and the Middle East’s power broker, the indispensable country with leverage throughout the region. China is poised to reap the financial and power benefits of Syrian reconstruction. The US has just demonstrated, in its act of war against the Iranian regime, its willingness, without consultation, to put its allies’ security in further jeopardy, accentuating the risks of security ties with Washington and generating added opportunities for Russia and China. The purpose here is not to critique US policy, but to point out the dramatically shifting power balance in a critical region, toward multipolarity. The dangers of such a shift will become apparent as some future US president attempts to reassert US influence in the region and finds a crowded playing field. Can a multipolar distribution of power among several states whose interests, values, and political practices are divergent, all experiencing bottom-up nationalist pressures, all seeking advantages in the oversupply of regional instability, be made to work? I think not. Will this more dangerous world descend into direct military confrontation between great powers, and could such confrontation lead to use of nuclear weapons? Here the question becomes, what will this more dangerous world actually look like; what instruments of coercion will be available to states as technology change accelerates; how will states employ these instruments; how will deterrence work (if at all) among several states with large but unequal levels of destructive capacity, weak command, and control, disparate— or opaque—strategies and simmering rivalries; can conflict management work in a world of weak institutions? The collapse of the Cold War era nuclear arms control regime, the threat to the Non-Proliferation Treaty represented by the demise of the JCPOA, and multiple indications of an accelerating nuclear arms race among the three principle powers, augurs badly. Given the structural forces at play, and without predicting the worst, we are indeed entering perilous times. Global Poverty and Inequality Despite the challenges of volatility and disruptive change inherent in globalization, the world under American liberal leadership has managed a dramatic reduction of extreme poverty. According to World Bank estimates, in 2015, 10 percent of the world’s population lived on less than $1.90 a day, down from nearly 36 percent in 1990.34 In fact, as of September 2018, half the world is now middle class or wealthier.35 The uneven success of the UN Millennium Development Goals (MDGs) exemplifies this achievement, and demonstrates what is possible when open markets are managed through strong global institutions, effective leadership and interstate collaboration. What this liberal hegemonic system did not achieve, however, was a fair distribution of the gains from globalization within states, and among those states that for various reasons were not full participants in this system. This record of partial achievement leaves us with a full agenda for the next fifteen years, but without the hegemonic leadership, strong institutions, ascendant liberalism or robust global growth that enabled previous gains. There are powerful reasons to question the sustainability of these poverty reduction gains, leading to doubts about the realization of the Sustainable Development Goals, which have replaced the MDGs as global development targets.36 (See Jens Rudbeck’s chapter and Sidhu’s UN chapter for SDGs). Skeptics have pointed to slowing global growth, specifically in China, whose demand for imported commodities was a major factor in developing country growth and job creation; growing protectionism in developed country markets, fueled by bottom-up forces of nationalism, and from top-down by a weakened global trading regime and increased geopolitical rivalry; the effects of accelerating climate change on agriculture, migration and communal conflict in poor countries; and the growth burst among poor countries from the rapid transition to more efficient use of resources, a transition that is now slowing down.37 Perhaps the greatest concern in this scenario is a general deterioration in the developing country foreign investment climate. Foreign direct investment (FDI) has been a major contributor to growth, job creation, and poverty alleviation among poor countries. It has incentivized growth=friendly policies, reduced corruption, introduced technology and effective management practices, and linked poor countries to foreign markets through global supply chains.38 It has stimulated growth of indigenous manufacturing and service companies to supply new foreign investments. It has been the major cause of economic convergence between rich and poor countries. From 2000 to 2009, developing economies’ growth rates were more than four percentage points higher than those of rich countries, pushing their share of global output from just over a third to nearly half.39 However, FDI flows into poor countries are imperiled by the structural forces discussed here. Political instability arising from slower growth and environmental stress will increase investors’ perception of higher risk, reinforcing their developed country bias. Protectionism among developed countries will threaten the global market access upon which manufacturing investment in developing countries is premised, causing firms to pare back their global supply chains. As companies retrench from direct investment in poor countries, the appeal to those countries of Chinese debt financed infrastructure projects, under the Belt-Road Initiative with little or no conditionality, but at the risk of “debt traps,” will increase. Global Warming The question posed at the beginning of this section is whether the international system, evolving toward multipolarity and rising nationalism, will find the collective political capital to confront challenges as they arise. Global warming is the mother of all challenges, and the weakness in the system’s capacity to respond is clear. With the two major political/economic powers and greenhouse gas emitters locked in deepening geopolitical conflict (and with one of them locked in climate change denial, possibly through 2024), the chances of significantly slowing global warming or even ameliorating its effects are very slim. We are reduced to the default option, nation-specific adaptation to climate change, which will impose rising human, political and economic costs on all, and will widen the gap between rich countries with adaptive capacity (of varying degrees), and the poor, who will suffer deteriorating economic, political, and social conditions. (For a contrary, optimistic view see Michael Shank’s chapter, which credits new actors—like cities—as playing a more constructive role in climate mitigation.) This would bring to a close liberal globalization’s greatest achievement; the raising of 1.1 billion people out of extreme poverty since 1990,40 with all its associated gains in quality of life (in the WHO Africa region, for example, life expectancy rose by 10.3 years between 2000 and 2016, driven mainly by improvements in child survival and expanded access to antiretrovirals for treatment of HIV).41 Several forces are at work here. The problem itself is graver—in magnitude and in rate of worsening—than predicted by climate scientists. The UN Intergovernmental Panel on Climate Change (IPCC), the major source of information on global warming, has consistently underpredicted the rate of climate deterioration. This holds true even for its “worst-case scenarios,” meaning that what was meant as a wake-up call has in fact reinforced complacency.42 (see Michael Shank’s chapter for further discussion of climate change). The IPCC, in its 2019 report, has tried to undo the damage by emphasizing the acceleration in the rate of warming and its effects, the only partially understood dynamic of climate change, and—given wide uncertainty—the possibility of unpleasant surprises yet to come. This strengthens the scientific case for urgency—to both severely limit greenhouse gas emissions, and to increase investment in ameliorating the effects. Unfortunately, the crisis comes at a moment when the climate for collective action is ice cold. Geopolitical competition incentivizes states to out produce each other, regardless of the environmental effects. Multipolarity complicates collective action. Economic stagnation mandates job creation, making regulation politically toxic. Bottom-up nationalism/populism causes states to pursue “relative gains,” meaning that if the nation is seen as gaining in a no-holds-barred economic competition with others, the negative environmental effects can be tolerated. A post-Trump presidency would help, with the US rejoining the Paris Agreement, and lending its weight to tighter regulation, increased R and D, and stronger economic incentives to reduce carbon emissions. Keep in mind, however, that President Obama was fully behind such efforts, but in a deeply polarized America was unable to implement measures needed to fulfill the Paris obligations through legislation, and his executive orders to do this were swiftly overturned by Trump.

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

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

How good is growth, anyway ?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

I myself have written of the great stagnation, a slowdown in growth which overtook the Western world starting in about 1973. It would be a failure of imagination, however, to believe that human progress has run its course. The more plausible view is that progress is unevenly bunched, we have been in a slow period as of late, various new developments are percolating, and we should do our best to help them along. Whether we like it or not, economic growth and technological progress do not always arrive at a steady pace.

World history offers various precedents for the idea of a “great transformation” leading to enormous increases in the quality and quantity of human lives. Our ancestors did not foresee the evolution of humans, the agricultural revolution, the “urban revolution” (Sumeria and Mesopotamia, circa 4000 B.C.), or the Industrial Revolution. For that matter, the East Asian revolution in economic growth was not widely anticipated. Each development development dramatically changed the human condition over time, and eventually very much for the better. The history of economic growth, to some extent, is the history of working out the consequences of such unforeseen transformations. It is unlikely that we have seen the last of such revolutions, at least provided that civilization manages to stay afloat.

Looking into the more distant future makes the question of the economic growth rate all the more important. For instance, a two percent rate of economic growth, as opposed to a one percent rate, makes only a small difference across the time horizon of a single year. But as time passes, the higher growth rate eventually brings about a very large boost to well-being. To make this concrete, here’s an experiment: redo U.S. history, but assume the country’s economy had grown one percentage point less each year between 1870 and 1990. In that scenario, the United States of 1990 would be no richer than the Mexico of 1990. 15

It is also worth pondering some comparisons with higher rates of economic growth, of the sort we often see in emerging economies. At a growth rate of ten percent per annum, as has been common in China, real per capita income doubles about once every seven years. At a much lower growth rate of one percent, such an improvement takes about sixty-nine years.

Robert E. Lucas, Nobel Laureate in Economics, put the point succinctly: “The consequences for human welfare involved in questions like these are staggering: once one starts to think about [exponential growth], it is hard to think about anything else.” 16

Even if you don’t regard material wealth as central to human well-being, economic growth brings many other values, including, for instance, much greater access to the arts and education. Economic growth also gives individuals greater autonomy and minimizes the chance that their destiny will be determined by the time and place in which they were born. It remains true that many individuals are born poor or are born into families that do not much respect formal education or are born far away from cities. Still, ask yourself a simple question: has there ever been a time in human history when so many individuals had such a good chance of becoming world-class scientists ?

Individuals today are more able to shape their futures, choose their friends, communicate with the outside world, and weave together diverse cultural strands when building out their personal narratives. Benjamin M. Friedman, in his brilliant The Moral Consequences of Economic Growth , shows just how many of the virtues of the modern world depend on higher and indeed growing levels of wealth. 17

The bottom line is this: the more rapidly growing economy will, at some point, bring about much higher levels of human well-being—and other plural values—on a consistent basis. If some set of choices or policies gives us a higher rate of economic growth, those same choices or policies are akin to a Crusonia plant.

#### Innovation diffusion solves uneven global development and contributes to drastic increases in global productivity.

Eugster et al. 19, \*[Johannes Eugster](https://voxeu.org/user/270976), Economist, IMF; [Giang Ho](https://voxeu.org/user/223188), Economist in the European Department, IMF; [Florence Jaumotte](https://voxeu.org/user/222643), Deputy Division Chief, Research Department, IMF; [Roberto Piazza](https://voxeu.org/user/270975), Economist, IMF; (June 12th, 2019, “Technology diffusion and global living standards”, https://voxeu.org/article/technology-diffusion-and-global-living-standards)

The innovation landscape is changing

A striking development in recent years has been the rise of South Korea and China as innovators, whether measured by patenting or R&D spending. China’s R&D spending is now second only to that of the US (Figure 1). South Korea and China are today among the top five most innovative countries in a number of sectors, either based on the stock of R&D or the stock of international patents. Their rise has been particularly pronounced in the electrical and optical equipment sector and, for South Korea, also in machinery and equipment.

Notably, innovation between economies at the technology frontier (G5) has been diverging from other economies. Since the early 2000s, there has been a pronounced slowdown in the growth of patenting – and to a lesser extent R&D – in the G5. This mirrors the well-documented slowdown in labour productivity and total factor productivity. Growth in innovation and productivity held up better in emerging market economies and, to a lesser extent, in other advanced economies (Figure 2).

Diverging dynamics could reflect changes in the way innovation diffuses from the frontier to other regions. The dramatic increases in international trade and capital flows, and the progress in information and communications technologies, have made it easier for countries, especially emerging market economies, to access the international stock of knowledge. Much recent research highlights the importance of trade and foreign direct investment for technology diffusion (e.g. Keller 2004, 2011).

In recent papers (Eugster et al. 2018, IMF 2018), we take a new look at the process of international technology diffusion and its evolution as globalisation has progressed since the mid-1990s. We ask three main questions:

Have knowledge flows become more globalised?

What was the role of foreign knowledge flows in boosting domestic innovation and, more generally, productivity, especially in emerging market economies?

What was the impact of increased international competition – resulting for example from China opening up to global trade – on innovation and cross-border technology diffusion?

To answer these questions, we exploit the rich global patent dataset (PATSTAT), maintained by the European Patent Office, in addition to measures of R&D and productivity. Our methodology builds on the work of Peri (2005) and Coe and others (2009), but extends it by introducing the industry dimension, widening the geographical scope of the analysis to include emerging market economies, and focusing on the most recent decades (1995-2014).

More globalised knowledge flows

PATSTAT allows us to trace knowledge flows using cross-patent citations, that is, the extent to which countries cite patents from other innovators as prior knowledge in their own patent applications. A first look at the data (Figure 3) suggests knowledge flows have increased significantly over the last two decades, and China and South Korea (depicted in Figure 3 as 'other Asia') have become substantially more integrated in global citations, both as citing and as cited innovators.

Figure 3 The evolution of cross-patent citations within, and across, regions between 1995 and 2014

But we need to look beyond raw citation counts. To measure the intensity of knowledge diffusion, we follow Peri (2005) and estimate the predicted frequency at which a given country-sector cites innovations of the technology leaders (taken to be the G5) – relative to the presumed 'frictionless' frequency of citation within the technology leader. This is based on a model in which cross-patent citations between country-sector pairs are a time-varying function of geographical distance between the two, technological distance, whether the countries share a common language or have historic colonial ties, and a large number of fixed effects which control for the stock of innovations and institutional changes in the propensities to patent and cite.

Using this measure confirms that the share of technology leaders’ knowledge that diffuses to emerging market economies has increased steadily and significantly over time – and this finding is robust to excluding China from the 'recipient' economies (Figure 4). In contrast, the diffusion of knowledge from the G5 to (non-G5) advanced economies has remained flat or even moderated somewhat – albeit from a higher level – since the global financial crisis.1

Figure 4 Estimated intensity of knowledge diffusion

Capitalising on knowledge flows

Next, we ask whether foreign knowledge flows impacted the innovation capacity and productivity of recipient countries. Our findings suggest that they do, and increasingly so. We estimate the impact of knowledge flows from technology leaders (G5) – measured by their R&D stock interacted with the estimated intensity of knowledge diffusion presented above – on patenting, and on labour and total factor productivity of other countries.2

We find that both emerging market and other advanced economies have been able to capitalise on knowledge flows from the G5 to increase domestic innovation (measured by patenting) – with foreign knowledge playing a relatively larger role than domestic R&D in emerging market economies. These results also apply to productivity, suggesting that knowledge from the G5 has contributed to boosting income levels in other countries.

The impact on productivity is economically meaningful, especially for emerging market economies. For instance, between 2004 and 2014, knowledge flows from the technology leaders may have generated, for an average country-sector, about 0.7 percentage point of labour productivity growth per year (Figure 5). This amounts to about 40% of the observed average sectoral productivity growth in this period.

Figure 5 Contribution of foreign knowledge to labour productivity growth in emerging market economies (annual % growth across country sectors)

The impact of foreign knowledge flows on domestic technological progress has increased significantly over time. This is especially true for disembodied measures of technological progress such as innovation and total factor productivity (but not for labour productivity).

Growing competition from emerging market economies

We also examine the effect of growing international competition on foreign knowledge flows.

The degree of product market competition is a key theoretical determinant of innovation activity. Its intensity has changed over time, shaped in part by the reduction in trade barriers with globalisation. We construct two measures of international competitive pressures that are reasonably exogenous to developments in specific country-sectors:

The evolution of import penetration from China in US industries. We use this measure to instrument import penetration in 'recipient' advanced economies.

Indices of industry concentration at the global level. These exclude China from our sample because, as the largest non-G5 country, it could introduce significant reverse causality between domestic innovation and our global concentration measure. We find that, consistently across both measures, greater international competitive pressure has increased both the level of sectoral innovation and its sensitivity to foreign knowledge flows.

Although, theoretically, competition has ambiguous effects on innovation, our results point to a positive empirical relation internationally. A small but growing number of papers has tried to empirically address this question. Autor et al. (2016) find that increasing competition from China has lowered innovation in US industries, while Bloom et al. (2016) find the opposite for European firms. Our results capture the conclusions of Bloom et al. (2016), as many European countries are included in our sample of countries. However, they cannot be directly compared to Autor et al. (2016), because we consider the US only as a source of knowledge flows, and not as a sample country.

Conclusions

Globalisation has intensified the international diffusion of technology, which is crucial to share growth potential across countries and boost global growth. The positive impact has been particularly large for emerging market economies, helping increase productivity for them, and supporting income convergence. Our results also suggest that the growing competition from emerging market economies may lead to more innovation, even in advanced economies.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### 1AC---Solvency

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

#### The plan requires SSO’s to administer reasonable action to prohibit ex post opportunism---that strengthens FRAND while enabling SEP holders to capture appropriate royalties.

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3. Application of the Basic Legal Principles

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

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

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

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

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

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

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

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

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

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

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

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

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

#### Only antitrust enforcement creates a consumer-action feature that challenges SSO misconduct.

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2. Why Antitrust Enforcement Is Necessary

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

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

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

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

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

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

#### The exponential expected value of economic growth to future well-being makes securing it a moral imperative.

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So often we are tempted to put pleasure first and postpone our chores and our pains. The present is so real and vivid, and the future seems so distant and abstract. Many people cannot fully grasp that when the future comes, it will be as real as the present is right now.

I am struck by how people respond when they are given a choice between the immediate present, the future, and the more distant future. Very often they are biased toward the immediate present. For instance, a person might realize that a benefit in two years’ time is about the same in value as that same benefit in three years’ time. That’s a rational posture. That same person, however, may prefer a dollar today to three dollars three weeks from now. 1 But when the comparison is between ten years from now and twenty years from now, people exhibit much more patience, and many people would even say that a benefit ten years from now is about as valuable as the same benefit twenty years from now.

In other words, individual time preference usually focuses on the immediate vs. the only somewhat distant. If we can get over our initial impatience for receiving a reward now, our intellect is very often capable of seeing that we should care about the more distant future as much as we should care about the less distant future. For the most part, we’re actually fairly rational about time, except for this fixation on the “now” moment and the “very soon/right away” horizon.

We are programmed for the now moment for reasons which are inapplicable to most of our public policy choices and obsolete as a fundamental tool of moral reasoning. Human beings evolved under brutal hunter-gatherer conditions; they had good reason to pay special attention to the now moment. If you didn’t get the “now” right, there might not be a tomorrow. If you let a piece of meat sit, it would spoil or be seized by your neighbor or consumed by marauding animals overnight. It wasn’t like sitting on T-Bills in your Fidelity account. So we may have an innate biological preference for the “now,” but we will do better if we can get past it, if we can tap into the part of ourselves that recognizes that a benefit in twenty years’ time is about as valuable as that same benefit in thirty years’ time.

If you are the kind of person who is inclined to seize the current benefit, you will do best if you can find a way to link these immediate rewards to a superior payoff in the future. Young people, uneducated people, and those with lower IQs and problems with cognition or self-control find it hardest to make this connection. Those same people are also more likely to have problems with obesity, gambling, impulse control, and even violence. These correlations don’t philosophically prove that their impatient choices are incorrect (maybe the gamblers are the wise ones and the rest of us are fools for missing out on their risky delights), but they do lend support to the idea that these individuals are making a mistake. They are failing to imagine the future and its import. Further evidence suggests that children who are more impatient have more trouble in school and are more likely to encounter disciplinary action. 2

Very often the choice between the present and the future takes place at the social level. Many social policies influence whether benefits and costs come sooner or later, and if we are to make a choice, we need to decide how impatient we are going to be. I worry about the logical implications of impatience, if we were to apply such impatience to a longer time horizon. Together with Derek Parfit, I once wrote: 3

Why should costs and benefits receive less weight, simply because they are further in the future? When the future comes, these benefits and costs will be no less real. Imagine finding out that you, having just reached your twenty-first birthday, must soon die of cancer because one evening Cleopatra wanted an extra helping of dessert. How could this be justified ?

Economists and other social scientists often speak of a “discount rate.” A discount rate tells us how to compare future benefits to current benefits (or costs) when we make decisions. When the discount rate is high, we are counting future costs and benefits for less. Let’s speak in terms of pleasure (or pain) as a magnitude that corresponds, however roughly, to a real number scale. A five percent discount rate, defined annually, means that 100 units worth of pleasure today is equal to 105 units worth of pleasure a year from now. A ten percent discount rate would set this equality at 110 units worth of pleasure a year from now, and so on.

A discount rate of zero means that a future benefit (or cost) counts for as much as a comparable benefit in the present. A person with a zero discount rate would not see any point in putting off going to the dentist. There’s no reason not to get it over with.

If there’s one thing we’ve learned, it’s that discount rates matter. In your personal life it affects how hard you work, how much you drink and gamble, and what kind of education you get. At the social level, the discount rate pertains to questions of how hard we should be fighting climate change and how much we should invest in preserving biodiversity. If we dismiss the importance of the distant future, action will not seem imperative. But if we pay heed to the distant future, we will see these as major concerns.

Discounting also matters for how hell-bent we are on pursuing a higher rate of economic growth. A higher growth rate means that the future, at some point in time, will be much richer than it would be otherwise, and, as I argued earlier, it also means that human beings will be much better off. How compelled should we feel to bring about this wealthier state of affairs ? If you only care about today, you won’t be as motivated to act in favor of higher sustainable growth.

Most of us are altruistic, especially toward our own children and grandchildren. But this form of partial altruism does not make us care much about other people’s grandkids. When people vote or otherwise make choices that affect future generations as a whole, they often behave quite selfishly. Political time horizons tend to be very short, often extending no further than the next election or the next media cycle. Voters are keen to receive more government spending now and postpone the required taxes to the more distant future. Few governments do everything they can to promote economic growth for the more distant future. The bottom line is that caring about the future is not something that happens automatically, even if you dearly love, or will dearly love, your grandchildren. When it comes to the discount rate for social decisions, we need to choose wisely.

For certain decisions, such as whether or not to cut down a tree, market forces induce even selfish people to think about the more distant future. If you leave the tree standing, it might be worth more money. If you own a Rembrandt painting, you’ll probably keep it in decent shape, even if you’re a selfish, uncultured bastard who doesn’t care about the artistic patrimony of the Dutch. These kinds of examples, however, apply only when there are well-defined property rights to specific assets. The motivations behind these behaviors won’t spur us to preserve the environment or maximize the rate of sustainable economic growth. Once again, the proper depth of concern for the more distant future does not come to us automatically, at least not in a wide variety of cases.

Expressed differently, when it comes to non-tradable and storable assets, markets do not reflect the preferences of currently unborn individuals. The branch of economics known as welfare economics holds up perfect markets as a normative ideal, yet future generations cannot contract in today’s markets. If we were to imagine future generations engaging in such contracting, current decisions might run more in their favor. Circa 2018, the future people of 2068 can’t express their preferences across a lot of the choices we are making today, such as how rapidly to boost future wealth or how much to mitigate the risk of serious catastrophes. 4

Let’s now consider some basic choices about how to value the distant future. Again, think of a decision-maker weighing present and future interests, in this case human lives. The way discounting works, if we discount the future by five percent, a person’s death today is worth about thirty-nine billion deaths five hundred years from now. Alternatively, at that same discount rate, one death two hundred years from now is equal in value to 131.5 deaths three hundred years from now. Upon reflection, few people, putting aside their selfish interest in the current time period, would share these conclusions as a basis for ethical decision-making. 5

Or consider the comparison prospectively. Under any positive discount rate, no matter how low, one life today could be worth more than one million lives in the future. It could even be worth the entire subsequent survival of the human race, if we use a long enough time horizon for the comparison. At the very least, we should be skeptical that positive discount rates apply to every choice before us. Sometimes we should be less impatient and pay the future greater heed.

Even if you think that individual impatience is sometimes justified, impatience will not justify the positive discounting of well-being across generations. Time preference may mean that an individual prefers to have a good steak dinner sooner rather than later. Even if this is rational—after all, you’re getting hungrier by the minute—this kind of time preference doesn’t apply across longer time frames, including future generations. Our still-unborn great-great-grandchildren will not receive benefits for some time. But in the meantime they are not sitting around, waiting impatiently with rumbling stomachs. It cannot be argued that their forthcoming slice of time is worth less simply because they must wait for it. Similarly, it cannot be argued that Medieval peasants benefited from having been born before us and thus having eaten their bread sooner. When we consider long periods of time and count the years before individuals are born, we need to discard impatience as a factor of relevance because it just doesn’t apply. Time preference therefore does not justify the significant discounting of the distant future, even if it justifies Tom’s wanting to have his steak dinner sooner rather than later. 6

Another way of thinking about why a high time discount rate is wrong involves a somewhat unusual—some would say kooky—thought experiment. Einstein’s theory of relativity suggests that there is no one factual answer to the question, “What time is it ? ” Any measurement of time (when is “now” ? ) is relative to the perspective of an observer, and to the velocity of that observer relative to the speed of light. In other words, if you are traveling very fast, you are moving into the future at an especially rapid rate. Yet it seems odd, to say the least, to discount the well-being of people as their velocity increases. If, for instance, we sent off a spacecraft at nearly the velocity of light, the astronauts would return to Earth, hardly aged, many millions of years hence. Should we pay less attention to the safety of our spacecraft, and thus to the welfare of our astronauts, the faster those vehicles go ? Should we—as a result of positive discounting—not give them enough fuel to make a safe landing ? And if you decline to condemn these brave astronauts to death, how are they different from other residents of the distant future ?

Instead of letting our speedy astronauts die, we can think of the universe as a block of four-dimensional space-time. We would not discount human well-being for temporal distance per se any more than we would discount well-being for spatial location per se . In moral terms, maybe time really is an illusion, as Buddha suggested thousands of years ago.

That said, discounting for risk is justified in a way that discounting for the pure passage of time is not. If a future benefit is uncertain, we should discount that benefit accordingly because it may not arrive. But such a practice does not dent a deep concern for the distant future. It is precisely because we discount for risk that we seek to protect our future against great tragedies, thereby making that future less risky. If we boost the long-term sustainable growth rate, for instance, we are indeed making the future less risky. Rather than ignoring risk, a future-oriented perspective takes long-term risk into account and attempts to lower it. The factor of risk might encourage you to spend your money now, otherwise someone might steal it. But it won’t discourage us from caring a lot about long-term sustainable growth.

Before moving on, let’s consider the relevance of the numerical comparisons presented above of events which lie one hundred, two hundred, or even five hundred years into the future. It might seem that nothing we do today can affect the world that far out, most of all when it comes to policy issues. Yet the most recent evidence suggests that good (or bad) political and economic decisions, and the general existence of prosperity, have persistent effects that stretch for centuries into the future. Colonial policies from the sixteenth and seventeenth centuries have persistent effects on prosperity today, and there is even research suggesting that the prosperity of a region well before the birth of Christ holds predictive power for the prosperity of those regions today. 7

For whatever reason, good institutions and a history of prosperity tend to have enduring effects. Wealth can fund and enable better government, and that in turn gives rise to further wealth and better institutions. Institutional memories of economic success and good governance can persist for long periods of time. Cultural practices such as business savvy or an interest in external markets can last for centuries.

England, which led the Industrial Revolution, had positive institutional features stretching far back in its history, such as relatively free labor markets in Medieval times and the carving out of a coherent national unit with a language, an army, and a parliament. The practices of the empire then carried some of these institutions across the oceans, such as when the British settled much of North America and the Antipodes (though not every region benefited from the brighter side of British rule). It’s no accident that many of the original territories of the Roman Empire remain some of the world’s wealthiest and most successful nations. China was also a relatively wealthy nation in earlier times, and that prosperity is reemerging today. For centuries, Chinese entrepreneurs around the world have shown special commercial savvy; this again has something to do with history.

Of course, the persistence of prosperity does not apply in every case. Much of the Arab world is currently well below its historic relative standing; Baghdad might have been one of the best and most interesting cities to live in about a thousand years ago, but today it is struggling. Still, if we think in terms of averages, we see plenty of evidence that history can matter over very long time spans. Therefore, any act which strengthens good institutions today has, in expected value terms, a causal stretch running centuries into the future. Once again, this means that our choice of discount rate is of critical importance.

We can also see the importance of faith to the overall argument. To fully grasp the import of doing the right thing, and the importance of creating wealth and strengthening institutions, we must look very deeply into the distant future. As I have argued at length, this is a conclusion suggested by reason. But in the real world of actual human motivations, the application of abstract reason across such long time horizons is both rare and unhelpful when it comes to getting people to do the right thing. The actual attitudes required to induce an acceptance of such long time horizons are, in psychological terms, much closer to a kind of faith. We cannot see these very distant expected gains, but we must believe in them nonetheless, and we must hold those beliefs near and dear to our hearts. In this sense, we should strongly reject the modern secular tendency to claim that a good politics can or should be devoid of faith.

There are, of course, many bad forms of faith in politics, and we should not encourage political (or other) beliefs in willful disregard of reason. But we cannot kick away faith itself as a motivational tool, as politics is of necessity built on some kind of faith. The lack—and, indeed, the sometimes conscious rejection—of the notion of faith, as is common in secular rationalism, is one of the most troubling features of the contemporary world. It has brought us some very real gains in terms of personal freedom, but it also threatens to diminish our ability to make the very best choices.

# 2AC

## ADV

### AT: Water Wars

#### No water conflicts or escalation.

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It is important to note that such conflicts predominantly occur on an intra-state basis, rather than between two nations. International conflict over environmental factors remain unlikely --- whether due to the robust nature of the world trade system and dynamics of supply and demand or to the spread of small arms transforming the notion of traditional conflict (Deudney, 1990). An important example can be found in the assertions of water wars. Although the management of rivers is often complicated by their crossing of territorial boundaries and nations dependent on water from beyond their borders (Egypt, Hungary and Mauritania all rely on international watercourses for 90 per cent of their water), an international conflict exclusively over possession of and access to a shared water source is still to occur. The reasons for this are simply, as Wolf (1998: 251) states, ‘War over water seems neither strategically rational, hydrographically effective, nor economically viable.’ At the international level, the costs outweigh the benefits and cooperation is sought before conflict occurs.

## K---CAP

### AT: Patent Link---Top

#### IP not intrinsically colonial---empirics.

Gilden 18 (Andrew, Assistant Professor of Law, Willamette University College of Law, “SEX, DEATH, AND INTELLECTUAL PROPERTY,” Harvard Journal of Law & Technology Volume 32, Number 1 Fall 2018, Accessed via HeinOnline, DOA: 9-13-2021) //Snowball

The most robust embrace of IP ownership as a pathway to autonomy, community, equality, and cultural participation has emerged in the context of IP protections for indigenous peoples and racial minorities. Professor Madhavi Sunder's work has embraced the "affirmative" use of IP rights by traditional communities, such as by Indian artisans seeking protections for Darjeeling tea and Mysore silk, Native American tribes seeking protection of their spiritual symbols, and Australian Aboriginals seeking collective copyrights in their artistic work.243 Sunder observes that these groups' IP claims utilize the narrative of identity politics, cultural survival, and human rights, 244 mirroring how they assert IP rights for recognition and redistribution both for individual creators and the communities in which they are situated. 245 Professors Kristen Carpenter, Sonia Katyal, and Angela Riley similarly embrace IP ownership for indigenous cultural groups, conceiving of such rights as a form of "property in peoplehood.1 241 IP can be a tool for reshaping prejudicial public representations of certain groups, for example, where a Native American child "recognizes that using the Indian race as a mascot is a badge of inferiority" and does not see any other race similarly caricatured on a daily basis. 247 Professor K.J. Greene has critiqued the historical failure of the copyright system to protect the work of black artists, connecting this lack of recognition and compensation to "the systemic subordination based on race that characterized most of U.S. history." 248 For these scholars, the rights of exclusion afforded by IP are crucial steps toward cultural inclusion, fair representation, and equality.

Contemporary IP disputes emphasize that this desire for recognition, community, cultural participation, and dignified representation is even more universal. 249 Although vulnerabilities in social media environments certainly track social hierarchies more broadly, 250 vulnerabilities are nonetheless experienced across the lines of race, gender, class, and sexual orientation. 251 ' Anyone who releases cultural artifacts into a digital network- whether via text message, cloud storage, or Facebook - risks that artifact being used by others in ways that reshape their work, family, and romantic relationships and limit their ability to set the terms of their own cultural participation.252 When someone's public representation marks them merely as a source of sexual pleasure or as a consumable commercial resource, it ignores, debases, and potentially weakens the more complex web of cultural relationships in which that person is enmeshed.253 One might respond that such loss of control is sadly the price we pay by constantly using "free" digital networks, but such resignation cedes far too much power to those who seek to exploit our potential vulnerabilities.254 Disputes around sex, death, and IP reveal a diverse group of individuals looking to our legal system for ways to reassert agency in the face of vulnerability. IP laws, as written, often match these needs quite closely. These laws may have been designed with a narrow set of market-oriented concerns in mind, but they can evolve into a more capacious tool for managing boundaries in a social media environment and addressing a broader set of concerns. 255 The Internet lets us play, and IP provides some protection. 256

### AT: China Link---Top

#### Western IR explains China’s behavior---suggesting otherwise ignores decades of Chinese history, which is equally as orientalizing.

Chong 20, PhD, associate professor of political science at the National University of Singapore and a Harvard-Yenching Institute Visiting Scholar for 2019-2020. (Ja Ian, 11/9/20, "Roundtable 12-2 on *Thucydides’s Trap? Historical Interpretation, Logic of Inquiry, and the Future of Sino-American Relations*", *H-Diplo | ISSF*, https://issforum.org/roundtables/12-2-thucydides)

Chan’s finding that misplaced worries about the PRC and its intentions stem in part from misunderstandings of perspectives on international politics that are informed by theories from “the West” rather than China deserves elaboration and debate. So-called “Western” international relations theories often have parallels in the Chinese tradition, broadly construed. Work analyzing Spring and Autumn, Warring States, Song, and Ming documents indicate that the strategic thought that is prominent in these periods closely resembles statecraft familiar to those in the contemporary “West.”[16] Texts as varied as the Han-era annals Records of the Grand Historian and the Ming-era fiction Romance of the Three Kingdoms will suggest the same.[17] Parallels between “Western” and “Chinese” approaches to politics are unsurprising. Several millennia of collective human experience, thought, and debate over statecraft, conflict, as well as governance are almost certainly bound to produce similarities in responses.

Dividing the world into “Western” and “Chinese” views of the world ignores the fact the PRC has disagreements with ostensibly “non-Western” polities such as India, Indonesia, Japan, Korea, and Vietnam, each with their own distinct philosophical traditions.[18] Also, despite sharing cultural origins, people in the PRC and on Taiwan disagree fundamentally issues of political valAues and rights, not the relatively simple issues of who should rule China or what a Chinese state should entail geographically.[19] Moreover, the PRC’s ruling Chinese Communist Party draws at least some of its inspiration from European thinkers in the form of Karl Marx and Vladimir Lenin. Successive dynasties from historical China also proved themselves very adept at conquest—that is how regimes and empires get built.[20] Attributing tensions between the United States and PRC to culture suggests an overly monolithic view of the rich and varied philosophical and political traditions both major powers draw from, giving them less credit than is due.[21]

To claim that contemporary international scholarship and U.S. policy are unable to adequately understand China because they are “Western” may oversimplify the nature and seriousness of problems dogging U.S.-China relations and their consequences for the world. Relegating difference to culture is not only Orientalizing, it can encourage a misplaced expectation that understanding can bring some sort of happy, mutually acceptable outcome. Perhaps Beijing and Washington understand each other well. They simply disagree fundamentally over values and interests in ways that make finding mutually acceptable accommodation increasingly difficult. This does not have to imply that either side is morally superior or normatively “better” than the other, just that understanding provides little promise for improving relations and avoiding confrontation. Better accounting for such possibilities invites fuller consideration of the roles that agency and contingency play in major power relations, two features that Chan clearly identifies as critical in the volume.

### 2AC---AT: Unsustainable

#### Growth is sustainable---climate change is shifting economic incentives towards reducing emissions.

Henderson 20, John and Natty McArthur University Professor @ Harvard (Rebecca, May/June Issue, “The Unlikely Environmentalists: How the Private Sector Can Combat Climate Change,” Foreign Affairs, https://www.foreignaffairs.com/articles/world/2020-04-13/unlikely-environmentalists)

There’s a reason climate change is often described as a “wicked problem.” Fully decarbonizing the economy will require not only completely transforming the global energy infrastructure, at a cost of many trillions of dollars, but also retrofitting all of the world’s buildings, remaking the planet’s agricultural practices, and revolutionizing transportation systems. It is difficult to see how this can be accomplished without some kind of global carbon tax or regulatory regime. But putting such a system in place is proving to be enormously difficult. The 2015 Paris agreement on climate change was a good first step, but many countries show little sign of meeting the commitments they made as part of that agreement, and the United States’ withdrawal from the process has presented a significant barrier to further progress. Given the slowing global economy and the slide toward populism and nationalism in much of the world, the prospects for any kind of comprehensive global accord seem increasingly remote. So far, at least, the public sector is failing to confront the problem. But the private sector has begun to step in to fill the vacuum. In January, Larry Fink, the CEO of BlackRock, the largest asset manager in the world, declared that “climate risk is investment risk” and announced that going forward BlackRock would ask every firm in its portfolio to disclose its carbon emissions. BlackRock has roughly $7 trillion under management and is one of the largest shareholders in nearly every publicly traded firm in the world. So companies around the world paid attention when Fink went on to say that BlackRock would consider voting against boards whose firms “do not make sufficient progress” in addressing climate-related risks and would cease to invest altogether in some fossil fuel projects. Fink is not alone. Many of the world’s largest asset owners are coming to the conclusion that climate change is the most important risk to the long-term health of their portfolios. More than a third of global invested capital—about $19 trillion—is controlled by the world’s 100 largest asset owners. Nearly two-thirds of this money is in pension funds; the remaining third is in sovereign wealth funds. These funds are now so large that they are sometimes referred to as “universal owners” or “universal investors” since, in effect, they hold the entire market. For that reason, they cannot diversify away from the risk of climate change—a risk that Mark Carney, who until earlier this year was the governor of the Bank of England, suggested could result in an abrupt financial collapse, potentially wiping out as much as $20 trillion of assets. To avert that kind of calamity, major asset owners are starting to push the companies in their portfolios to address climate change. This trend is not driven by altruism or a deep commitment to the environment: it’s a function of economic interests. For the world’s largest asset owners, climate change is not an externality—it is a profound threat to their long-term returns. It will, after all, be significantly harder to make money in a world where most of the major ports are underwater, harvests are failing on a routine basis, and hundreds of millions of people are on the move. As more and more major asset owners come to this realization, it is creating increasingly strong incentives for them to cooperate with one another in support of large-scale decarbonization. Together, they are pressing the firms in their portfolios to set concrete targets for emission reductions and to make progress toward meeting those targets, potentially solving the problem posed by firms’ unwillingness to cut their emissions unless they can be assured that their competitors will follow suit. Someone, however, will need to monitor that progress and sanction firms that lag behind—a role that would be best filled by government regulators. The need for such public-sector involvement will likely increase private-sector support for the policy changes required to drastically reduce carbon emissions. In this way, private-sector pressure may serve as the force that finally breaks the political logjam that has long blocked the public action needed to solve the climate crisis. MONEY TALKS One of the most promising examples of what this might look like in practice is Climate Action 100+, a nonprofit affiliation of more than 300 investors who collectively control nearly half of the world’s invested capital. The group was founded in 2017 with the goal of persuading the world’s 100 largest private-sector carbon emitters to “cut the financial risk associated with catastrophe” by putting in place board-level processes to assess their climate-related risks and oversee plans for dealing with them, pledging to clearly disclose those risks, and taking action to reduce greenhouse gas emissions across their value chains rapidly enough to help meet the Paris agreement’s goal of limiting the increase in the global average temperature to well below two degrees Celsius. In December 2018, a group of investors belonging to Climate Action 100+ published a letter in the Financial Times listing some specific steps they were demanding of companies in which they invest, including “the rapid elimination of coal use by utilities in EU and OECD [Organization for Economic Cooperation and Development] countries by no later than 2030.” Six months later, investors from the consortium pushed the oil giant Shell to announce short-term targets for limiting its greenhouse gas emissions and persuaded BP to support a shareholder resolution that binds the oil company to disclose the carbon intensity of its products, the methodology it uses to consider the climate impact of new investments, and its plans for setting and measuring emission targets. More than half of the 40 oil and gas companies with which the group has engaged have set long-term quantitative targets for reducing their emissions. And the group has helped persuade the shipping giant Maersk and two of the world’s largest mining companies, ArcelorMittal and Thyssenkrupp, to commit to becoming carbon neutral by 2050. These kinds of commitments are sometimes dismissed as mere greenwashing: public relations stunts designed to buy time. And sometimes they are. But they might also help catalyze an economic transformation that could play a major role in arresting climate change. Of course, large asset holders are not the only players who shape a company’s incentives: employees and consumers do, as well, and they are increasingly insisting that firms go green—and rewarding them when they do. For example, after the consumer goods giant Unilever announced that it planned to cut its carbon footprint in half and double its revenue at the same time—and then followed through by transforming its operations, brand by brand—the firm joined Facebook, Google, and Microsoft on LinkedIn’s list of the ten most desirable employers in the world. Sales of Unilever’s “sustainable living” brands—which include Ben & Jerry’s, Dove, and Vaseline and which Unilever claims “contribute to achieving the company’s ambition of halving its environmental footprint”—are growing 69 percent faster than the rest of the business and providing 75 percent of the company’s growth. Shifting public attitudes about climate change and public policies intended to combat it have also created clear business opportunities. Solar and wind energy are both multibillion-dollar businesses. The market for plant-based alternatives to meat is exploding. And global recycling could generate close to $400 billion in the next five years. RISKY BUSINESS But embracing the innovation that is required to exploit new opportunities is often risky and expensive. The venture capital industry lost at least $10 billion between 2005 and 2011 investing in clean energy technology. An electric utility that commits to phasing out coal plants might reap the benefits of declining solar and wind energy costs, but it could also misjudge the market and significantly increase its costs. An automobile company that invests in developing electric vehicles might leap ahead of its competitors, but it could also risk losing out to more cautious rivals. Universal investors can help mitigate those risks by funneling capital to firms that are willing to make the first move. This can be transformational in itself, since companies that decide to embrace new opportunities can often persuade an entire industry to follow them. Walmart’s massive investments in energy saving and waste reduction, for example, have helped persuade many other companies to take similar steps. Since 2010, the price of battery storage has fallen by at least 73 percent, a change driven largely by the electric vehicle company Tesla’s significant investments in the technology, which spurred the company’s competitors to invest more than $90 billion in the development of electric vehicles. Major asset holders can also push companies to commit to aggressive targets for decarbonizing their business models and insist that they report on their progress. In this way, universal investors may be able to force every firm in an industry to act, solving the collective action problem inherent in tackling climate change. Firms don’t naturally act collectively—for all kinds of reasons, including antitrust law. But when there exists a clear business case for doing so and cooperation can be credibly enforced, voluntary cooperation can be an effective means of creating or preserving public goods. Nearly half of the world’s inshore fisheries are managed through some form of cooperative agreement. Most of the rules governing international trade are designed and enforced by the International Chamber of Commerce, a voluntary association founded in 1919. Some of the world’s largest firms are increasingly exploring whether these kinds of voluntary agreements might be an effective way to reduce emissions. For example, after Unilever came under pressure from activists to stop using palm oil, the cultivation of which contributes to deforestation, Paul Polman, who was then the company’s CEO, was able to persuade many of his fellow consumer goods CEOs that continuing to purchase conventionally produced palm oil presented a significant threat to their own brands. Partly as a result, more than 60 percent of the world’s traded palm oil is now covered by sustainability commitments. Similar agreements with respect to soy and beef have greatly slowed rates of deforestation in the Amazon River basin. And companies in industries as diverse as airlines, food, retail, apparel, travel, hospitality, construction, health care, and high technology have begun to coordinate to reduce carbon emissions across supply chains, so that no single firm is placed at a disadvantage by going green. Such arrangements produce a wealth of knowledge about what effective decarbonization might look like on the ground. As one might expect, however, they are often unstable and difficult to enforce, since no mechanism exists through which to punish firms that drag their feet or refuse to conform. Here, universal investors might be able to make a significant difference by acting as enforcers. If BlackRock, for example, follows through on its threat to vote against the boards of companies that do not adequately disclose their climate emissions, every major firm in every industry will be forced to report—in an auditable, replicable way—the degree to which it is meeting its commitments. And if the world’s major investors then vote against the boards of those companies that are falling behind, investors could catalyze the transformation of entire industries. THE EARTH LOBBY Arresting climate change will still require government action, of course, and the changes afoot in finance and the corporate world could ease the path. As firms commit to reducing their carbon emissions, they are increasingly recognizing that the most effective way to ensure that they are not undercut by lagging companies is to press for regulation. Together, they are creating a constituency for effective climate policy. In 2017, for example, when U.S. President Donald Trump declared that he was going to withdraw the United States from the Paris agreement, the CEOs of more than 50 U.S. companies, including Apple, Gap, Google, HP, and Levi Strauss, published an open letter urging him to rethink the decision. When Trump stuck to his plan, Elon Musk, the CEO of Tesla, and Bob Iger, then the CEO of Disney, resigned from some of the president’s advisory councils in protest. More than 2,000 companies have joined a collaborative effort called “We Are Still In,”

a group working to ensure that the United States meets its commitments under the agreement despite the administration’s withdrawal. The group includes not only businesses but also states, cities, religious organizations, and universities. Together, they represent 68 percent of U.S. GDP, 65 percent of the U.S. population, and the source of more than half of all U.S. carbon emissions. Such action independent of the federal government could make a big difference. According to America’s Pledge, a nongovernmental organization that tracks local progress toward emission reductions, the “full achievement of already on-the-books policies from state and local actors—paired with rapidly shifting economics in the power sector—would reduce emissions 19 percent below 2005 levels by 2025 and 25 percent below 2005 levels by 2030.” This would be a significant step toward the approximately 50 percent reduction in emissions that the UN’s Intergovernmental Panel on Climate Change estimates is necessary to avoid the most dangerous potential outcomes of climate change. These efforts and others like them also have the potential to change the nature of the political conversation around climate change. In an increasingly partisan world, firms occupy a unique position. According to the 2019 Edelman Trust Barometer, an annual survey measuring credibility and trust, business is now the world’s most trusted institution, and 71 percent of employees around the world agree that “it is critically important” for the CEOs of their companies “to respond to challenging times.” A broad-based movement among the world’s biggest companies to tackle climate change could help legitimate the idea that climate change is a real danger, that acting to avert it could be a major driver of innovation and economic growth, and that appropriate public policy could be enormously helpful. Such a movement could also put increasing pressure on companies that resist decarbonizing. One of the reasons that climate regulation has stalled in the United States is that a small minority of firms have invested billions of dollars in actively lobbying against it. If their peers start to push for regulation and highlight the dangers inherent in continuing with business as usual, those laggards will be compelled to change their behavior. One day soon, flooding the political process with money to defend the burning of fossil fuels could be seen as an unacceptable reputational risk—or even as morally indefensible. For many years, experts have assumed that the fastest and most efficient route to global decarbonization is coordinated state action. But as the world’s political institutions have come under pressure, such action has become increasingly elusive. Against this background, the growing understanding that climate change presents a profound threat to the long-term returns of the world’s largest asset owners provides some reason for hope. As investors push for change and the realization dawns in more and more boardrooms that the benefits of climate action will outweigh the costs, it is possible that leading-edge firms could trigger a cascade of reinforcing reforms, transforming the economics of individual industries and creating a significant constituency for political action. For decades, when it came to addressing climate change, large asset holders and big companies acted more as obstacles than as catalysts. Those days may soon be over.

#### Technological innovation successfully dematerializes growth.

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

There is no shortage of examples of dematerialization. I chose the ones in this chapter because they illustrate a set of fundamental principles at the intersection of business, economics, innovation, and our impact on our planet. They are: We do want more all the time, but not more resources. Alfred Marshall was right, but William Jevons was wrong. Our wants and desires keep growing, evidently without end, and therefore so do our economies. But our use of the earth’s resources does not. We do want more beverage options, but we don’t want to keep using more aluminum in drink cans. We want to communicate and compute and listen to music, but we don’t want an arsenal of gadgets; we’re happy with a single smartphone. As our population increases, we want more food, but we don’t have any desire to consume more fertilizer or use more land for crops. Jevons was correct at the time he wrote that total British demand for coal was increasing even though steam engines were becoming much more efficient. He was right, in other words, that the price elasticity of demand for coal-supplied power was greater than one in the 1860s. But he was wrong to conclude that this would be permanent. Elasticities of demand can change over time for several reasons, the most fundamental of which is technological change. Coal provides a clear example of this. When fracking made natural gas much cheaper, total demand for coal in the United States went down even though its price decreased. With the help of innovation and new technologies, economic growth in America and other rich countries—growth in all of the wants and needs that we spend money on—has become decoupled from resource consumption. This is a recent development and a profound one. Materials cost money that companies locked in competition would rather not spend. The root of Jevons’s mistake is simple and boring: resources cost money. He realized this, of course. What he didn’t sufficiently realize was how strong the incentive is for a company in a contested market to reduce its spending on resources (or anything else) and so eke out a bit more profit. After all, a penny saved is a penny earned. Monopolists can just pass costs on to their customers, but companies with a lot of competitors can’t. So American farmers who battle with each other (and increasingly with tough rivals in other countries) are eager to cut their spending on land, water, and fertilizer. Beer and soda companies want to minimize their aluminum purchases. Producers of magnets and high-tech gear run away from REE as soon as prices start to spike. In the United States, the 1980 Staggers Act removed government subsidies for freight-hauling railroads, forcing them into competition and cost cutting and making them all the more eager to not have expensive railcars sit idle. Again and again, we see that competition spurs dematerialization. There are multiple paths to dematerialization. As profit-hungry companies seek to use fewer resources, they can go down four main paths. First, they can simply find ways to use less of a given material. This is what happened as beverage companies and the companies that supply them with cans teamed up to use less aluminum. It’s also the story with American farmers, who keep getting bigger harvests while using less land, water, and fertilizer. Magnet makers found ways to use fewer rare earth metals when it looked as if China might cut off their supply. Second, it often becomes possible to substitute one resource for another. Total US coal consumption started to decrease after 2007 because fracking made natural gas more attractive to electricity generators. If nuclear power becomes more popular in the United States (a topic we’ll take up in chapter 15), we could use both less coal and less gas and generate our electricity from a small amount of material indeed. A kilogram of uranium-235 fuel contains approximately 2–3 million times as much energy as the same mass of coal or oil. According to one estimate, the total amount of energy that humans consume each year could be supplied by just seven thousand tons of uranium fuel. Third, companies can use fewer molecules overall by making better use of the materials they already own. Improving CNW’s railcar utilization from 5 percent to 10 percent would mean that the company could cut its stock of these thirty-ton behemoths in half. Companies that own expensive physical assets tend to be fanatics about getting as much use as possible out of them, for clear and compelling financial reasons. For example, the world’s commercial airlines have improved their load factors—essentially the percentage of seats occupied on flights—from 56 percent in 1971 to more than 81 percent in 2018. Finally, some materials get replaced by nothing at all. When a telephone, camcorder, and tape recorder are separate devices, three total microphones are needed. When they all collapse into a smartphone, only one microphone is necessary. That smartphone also uses no audiotapes, videotapes, compact discs, or camera film. The iPhone and its descendants are among the world champions of dematerialization. They use vastly less metal, plastic, glass, and silicon than did the devices they have replaced and don’t need media such as paper, discs, tape, or film. If we use more renewable energy, we’ll be replacing coal, gas, oil, and uranium with photons from the sun (solar power) and the movement of air (wind power) and water (hydroelectric power) on the earth. All three of these types of power are also among dematerialization’s champions, since they use up essentially no resources once they’re up and running. I call these four paths to dematerialization slim, swap, optimize, and evaporate. They’re not mutually exclusive. Companies can and do pursue all four at the same time, and all four are going on all the time in ways both obvious and subtle. Innovation is hard to foresee. Neither the fracking revolution nor the world-changing impact of the iPhone’s introduction were well understood in advance. Both continued to be underestimated even after they occurred. The iPhone was introduced in June of 2007, with no shortage of fanfare from Apple and Steve Jobs. Yet several months later the cover of Forbes was still asking if anyone could catch Nokia. Innovation is not steady and predictable like the orbit of the Moon or the accumulation of interest on a certificate of deposit. It’s instead inherently jumpy, uneven, and random. It’s also combinatorial, as Erik Brynjolfsson and I discussed in our book The Second Machine Age. Most new technologies and other innovations, we argued, are combinations or recombinations of preexisting elements. The iPhone was “just” a cellular telephone plus a bunch of sensors plus a touch screen plus an operating system and population of programs, or apps. All these elements had been around for a while before 2007. It took the vision of Steve Jobs to see what they could become when combined. Fracking was the combination of multiple abilities: to “see” where hydrocarbons were to be found in rock formations deep underground; to pump down pressurized liquid to fracture the rock; to pump up the oil and gas once they were released by the fracturing; and so on. Again, none of these was new. Their effective combination was what changed the world’s energy situation. Erik and I described the set of innovations and technologies available at any time as building blocks that ingenious people could combine and recombine into useful new configurations. These new configurations then serve as more blocks that later innovators can use. Combinatorial innovation is exciting because it’s unpredictable. It’s not easy to foresee when or where powerful new combinations are going to appear, or who’s going to come up with them. But as the number of both building blocks and innovators increases, we should have confidence that more breakthroughs such as fracking and smartphones are ahead. Innovation is highly decentralized and largely uncoordinated, occurring as the result of interactions among complex and interlocking social, technological, and economic systems. So it’s going to keep surprising us. As the Second Machine Age progresses, dematerialization accelerates. Erik and I coined the phrase Second Machine Age to draw a contrast with the Industrial Era, which as we’ve seen transformed the planet by allowing us to overcome the limitations of muscle power. Our current time of great progress with all things related to computing is allowing us to overcome the limitations of our mental power and is transformative in a different way: it’s allowing us to reverse the Industrial Era’s bad habit of taking more and more from the earth every year. Computer-aided design tools help engineers at packaging companies design generations of aluminum cans that keep getting lighter. Fracking took off in part because oil and gas exploration companies learned how to build accurate computer models of the rock formations that lay deep underground—models that predicted where hydrocarbons were to be found. Smartphones took the place of many separate pieces of gear. Because they serve as GPS devices, they’ve also led us to print out many fewer maps and so contributed to our current trend of using less paper. It’s easy to look at generations of computer paper, from 1960s punch cards to the eleven-by-seventeen-inch fanfold paper of the 1980s, and conclude that the Second Machine Age has caused us to chop down ever more trees. The year of peak paper consumption in the United States, however, was 1990. As our devices have become more capable and interconnected, always on and always with us, we’ve sharply turned away from paper. Humanity as a whole probably hit peak paper in 2013. As these examples indicate, computers and their kin help us with all four paths to dematerialization. Hardware, software, and networks let us slim, swap, optimize, and evaporate. I contend that they’re the best tools we’ve ever invented for letting us tread more lightly on our planet. All of these principles are about the combination of technological progress and capitalism, which are the first of the two pairs of forces causing dematerialization.

#### Growth’s sustainable---exponential innovation and intangible capital solve the environment.

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The notion that ‘green’ and growth are traded off is intuitively appealing, but it relies on the assumption that economic growth equates to growth in material use (such as fuels, minerals, ecosystem services and capital equipment) and pollution. In fact, efficiency and productivity improvements can allow us to get more out of the resources we have by decoupling GDP from materials. It is true, the world has never before managed this, but the fact is we have never really tried.

Sustainability is in our gift

Where a minimal public and private effort has been made to invest in new technologies, for example in renewable energy and electric vehicles, great progress has been made towards decarbonising the electricity and transport sectors. This relied heavily on taxpayer funded research and deployment policies to kick start innovation. Moreover, once learning, experience and economies of scale in production and discovery kicked in, these innovative new technologies turned out to be cheaper, more efficient and more productive than the incumbents they replaced.

Exponential growth is not only possible, it is exactly what you’d expect in a world where you did not increase your resource or greenhouse gas footprint. You’d learn to use resources smarter and get more out of them. Investing in science, creativity and innovation can accelerate our ability to use fewer resources. In this way, increasing returns to ideas overcome diminishing returns to factors, such as labour and physical capital. This then generates more resources for further investment. Unlike material resources, ideas are weightless. Knowledge begets knowledge and does not deplete when used.

Ideas can be weightless as well as priceless

The green transition can serve to accelerate this trend provided we steer innovation in a way that enhances prosperity. The World Bank estimates that intangible capital—ideas, processes, software, databases, new media libraries, creative copy-write and online services—now makes up between 60% and 80% of total wealth in most developed countries.

#### Warming’s inevitable, try-or-die for CCS.

Page 19, Active member of the Australian Government Business Roundtable on Climate Change, the CSIRO Energy Transformed Flagship Advisory Committee, and the Australian Government Energy White Paper High-Level Consultative Committee. Former Chair of the CSIRO Energy and Transport Sector Advisory Council. (Brad, 3-22-2019, "Why carbon capture could be the game-changer the world needs", *World Economic Forum*, https://www.weforum.org/agenda/2019/03/why-carbon-capture-could-be-the-game-changer-the-world-needs/)

As global emissions continue to rise we are likely to overshoot our climate goals, and therefore carbon dioxide will need to be permanently removed from the atmosphere and used or stored. In fact, all four scenarios outlined in the IPCC SR15 report rely on carbon removal, with three of the four scenarios foreseeing significant amounts of carbon capture and storage. CCS can also have a role to play in generating power, as most emissions linked to energy infrastructure are already essentially locked-in. Coal-fired power plants, which account for one-third of energy-related CO2 emissions today, represent more than a third of cumulative locked-in emissions to 2040. Most of these plants are in Asia, where average coal plant is just 11 years old with decades left to operate. Looking ahead, more than 200 GW of coal capacity is under construction globally with 300 new plants to come online in the next few years in India and China alone. CCS is the only technology that can truly decarbonise these facilities. In OECD countries, renewable intermittency poses a real challenge to grid operators. Zero-emission electricity is central to our future but balancing services are likely to continue to be dominated by gas-fired plants for several decades yet. CCS is necessary. High cost is often touted as the reason behind CCS’ failure to scale up. Based on ‘micro’ measurements such as the levelised cost of electricity, power generation that incorporates CCS may appear more expensive compared to other sources. However, modelling by climate organizations such as the IPCC and the UK Committee on Climate Change repeatedly demonstrates that at a ‘macro’ system level - which surely should matter more from a societal point of view - achieving deep decarbonisation would be extremely difficult and costly, if not outright impossible, without CCS.At a micro level, while the cost of CCS could be more than $100 per tonne of CO2, it can also be as low as $20 a tonne for those applications where CO2 removal is an inherent part of the production process, such as in natural gas processing. Within that range, the IEA finds that as much as 450 million tonnes of CO2 can be captured and stored with a commercial incentive as low as $40 per tonne of CO2. Harnessing these low-cost opportunities could provide a solid foundation for scaling up CCS deployment. Technology innovation will also help. In the US, an emissions-free natural gas power plant began test operations in 2018, which has carbon capture built in as part of the combustion cycle aiming to compete with conventional combined cycle generation. If proven in practice, this could be a game-changer.

### 2AC---AT: Alt---TL

#### Armed opposition to the state fails.

**DeBoer 16**, Ph.D. from Purdue University, (Fredrik Deboer, March 15th, 2016, “c’mon, guys,” http://fredrikdeboer.com/2016/03/15/cmon-guys/)

I could be wrong about the short-term dangers, and the stakes are incredibly high. But in the end we’re left with the same old question: what tactics will actually work to secure a better world?

In a sharp, sober piece about the meaning of left-wing political violence in the 1970s, Tim Barker writes “If you can’t acknowledge radical violence, radicals are reduced to mere victims of repression, rather than political actors who made definite tactical choices under given political circumstances.” The problem, as Barker goes on to imply, is those tactical choices: in today’s America they will essentially never break on the side of armed opposition against the state. The government knows everything about you, I’m sorry to say, your movements and your associations and the books you read and the things you buy and what you’re saying to the people you communicate with. That’s simply on the level of information before we even get to the state’s incredible capacity to inflict violence.

Look, the world has changed. The relative military capacity of regular people compared to establishment governments has changed, especially in fully developed, technology-enabled countries like the United States. The Czar had his armies, yes, but the Czar’s armies depended on manpower above and beyond everything else. The fighting was still mostly different groups of people with rifles shooting at each other. If tomorrow you could rally as many people as the Bolsheviks had at their revolutionary peak, you’re still left in a world of F-15s, drones, and cluster bombs. And that’s to say nothing of the fact that establishment governments in the developed world can rely on the numbing agents of capitalist luxuries and the American dream to damper revolutionary enthusiasm even among the many millions who have been marginalized and impoverished. This just isn’t 1950s Cuba, guys. It’s just not. In a very real way, modern technology effectively lowers the odds of armed political revolution in a country like the United States to zero, and so much the worse for us.

This isn’t fatalism. It doesn’t mean there’s no hope. It means that there is little alternative to organization, to changing minds through committed political action and using the available nonviolent means to create change: a concert of grassroots organizing, labor tactics, and partisan politics. Those things aren’t exactly likely to work, either, but they’re a hell of a lot more plausible than us dweebs taking the Pentagon. Bernie Sanders isn’t really a socialist, but he’s a social democrat that moves the conversation to the left, and if people are dedicated and committed to organizing, the local, state, and national candidates he inspires will move it further to the left still. You got any better suggestions?

#### *Even if* revolutionary movements are successful, the utter chaos of the transition causes mass violence and repression that repeats the pitfalls of capitalism.

Wright 17, \*Erik Olin Wright, Professor of Sociology at the University of Wisconsin, Madison, USA. Director of A. E. Havens Center for Social Justice, University of Wisconsin-Madison, (2017, “How to be an Anti-capitalist for the 21st Century”, https://www.redalyc.org/journal/124/12452111002/html/)

Smashing

This is the classic strategic logic of revolutionaries. The rationale goes something like this:

The system is rotten. All efforts to make life tolerable within capitalism will eventually fail. From time to time small reforms that improve the lives of people may be possible when popular forces are strong, but such improvements will always be fragile, vulnerable to attack and reversible. Ultimately it is an illusion that capitalism can be rendered a benign social order in which ordinary people can live flourishing, meaningful lives. At its core, capitalism is unreformable. The only hope is to destroy it, sweep away the rubble and then build an alternative. As the closing words of the early twentieth century song Solidarity Forever proclaim, “We can bring to birth a new world from the ashes of the old.” The full realization of the emancipatory alternative may be gradual, but the necessary condition for such a gradual transition is a ruptural break in the existing system of power.

But how to do this? How is it possible for anti-capitalist forces to amass sufficient power to destroy capitalism and replace it with a better alternative? This is indeed a daunting task, for the power of dominant classes that makes reform an illusion also blocks the revolutionary goal of a rupture in the system. Anti-capitalist revolutionary theory, informed by the writings of Marx and extended by Lenin, Gramsci and others, offered an attractive argument about how this could take place:

While it is true that much of the time capitalism seems unassailable, it is also a deeply contradictory system, prone to disruptions and crises. Sometimes those crises reach an intensity which makes the system as a whole fragile, vulnerable to challenge. In the strongest versions of the theory, there are even underlying tendencies in the “laws of motion” of capitalism for the intensity of such system-weakening crises to increase over time, so that in the long-term capitalism becomes unsustainable; it destroys its own conditions of existence. But even if there is no systematic tendency for crises to become ever-worse, what can be predicted is that periodically there will be intense capitalist economic crises in which the system becomes vulnerable and ruptures become possible. The problem for a revolutionary party, therefore, is to be in a position to take advantage of the opportunity created by such system-level crises to lead a mass mobilization to seize state power, either through elections or through an insurrectionary overthrow of the existing regime. Once in control of the state, the first task is to rapidly refashion the state itself to make it a suitable weapon of ruptural transformation, and then use that power to repress the opposition of the dominant classes and their allies, dismantle the pivotal power structures of capitalism, and build the necessary institutions for the long-term development of an alternative economic system.

In the 20th century, various versions of this general line of reasoning animated the imagination of revolutionaries around the world. Revolutionary Marxism infused struggles with hope and optimism, for it not only provided a potent indictment of the world as it existed, but also provided a plausible scenario for how an emancipatory alternative could be realized. This gave people courage, sustaining the belief that they were on the side of history and that the enormous commitment and sacrifices they were called on to make in their struggles against capitalism had real prospects of eventually succeeding. And sometimes, if rarely, such struggles did culminate in the revolutionary seizure of state power.

The results of such revolutionary seizures of power, however, were never the creation of a democratic, egalitarian, emancipatory alternative to capitalism. While revolutions in the name of socialism and communism did demonstrate that it was possible “to build a new world from the ashes of the old,” and in certain specific ways they may have improved the material conditions of life of most people for a period of time, the evidence of the heroic attempts at rupture in the 20th century is that they do not produce the kind of new world envisioned in revolutionary ideology. It is one thing to burn down old institutions and social structures; it is quite another to build emancipatory new institutions from the ashes.

Why the revolutions of the 20th century never resulted in robust, sustainable human emancipation is, of course, a hotly debated matter. Some people argue that this was just because of the historically specific, unfavorable circumstances of the attempts at system-wide ruptures. Revolutions occurred in economically backward societies, surrounded by powerful enemies. Some argue it was because of strategic errors of the leadership of those revolutions. Others indict the motives of leadership: the leaders that triumphed in the course of these revolutions were motivated by desires for status and power rather than the empowerment and wellbeing of the masses. And still others argue that failure is intrinsic to any attempt at radical rupture in a social system. There are too many moving parts, too much complexity and too many unintended consequences. As a result, attempts at system-rupture will inevitably tend to unravel into such chaos that revolutionary elites, regardless of their motives, will be compelled to resort to pervasive violence and repression to sustain social order. Such violence, in turn, destroys the possibility for a genuinely democratic, participatory process of building a new society.

#### Capitalism is inevitable.

Wiedmann et al. 20, \*Thomas Wiedmann, PhD, Associate Professor of Sustainability Research at the University of New South Wales. \*Manfred Lenzen. PhD, Professor of Sustainability Research at Integrated Sustainability Analysis (ISA) in the School of Physics at the University of Sydney. \*Lorenz T. Keyßer, Institute for Environmental Decisions, Department of Environmental Systems Science, ETH Zürich. \*Julia K. Steinberger, PhD, Professor of Ecological Economics at the University of Lausanne. (6-19-2020, "Scientists’ warning on affluence", *Nature Communications*, https://www.nature.com/articles/s41467-020-16941-y?fbclid=IwAR0AG6Lz\_CcR2XY0uxVvKNmjnlWP0YLXl6iBcUfl8gcZmTjR7-ZVb3W3oes)

Super-affluent consumers and growth imperatives

Growth imperatives are active at multiple levels, making the pursuit of economic growth (net investment, i.e. investment above depreciation) a necessity for different actors and leading to social and economic instability in the absence of it7,52,60. Following a Marxian perspective as put forward by Pirgmaier and Steinberger61, growth imperatives can be attributed to capitalism as the currently dominant socio-economic system in affluent countries7,51,62, although this is debated by other scholars52. To structure this topic, we will discuss different affected actors separately, namely corporations, states and individuals, following Richters and Siemoneit60. Most importantly, we address the role of the super-affluent consumers within a society, which overlap with powerful fractions of the capitalist class. From a Marxian perspective, this social class is structurally defined by its position in the capitalist production process, as financially tied with the function of capital63. In capitalism, workers are separated from the means of production, implying that they must compete in labour markets to sell their labour power to capitalists in order to earn a living.

Even though some small- and medium-sized businesses manage to refrain from pursuing growth, e.g. due to a low competition intensity in niche markets, or lack of financial debt imperatives, this cannot be said for most firms64. In capitalism, firms need to compete in the market, leading to a necessity to reinvest profits into more efficient production processes to minimise costs (e.g. through replacing human labour power with machines and positive returns to scale), innovation of new products and/or advertising to convince consumers to buy more7,61,62. As a result, the average energy intensity of labour is now twice as high as in 195060. As long as a firm has a competitive advantage, there is a strong incentive to sell as much as possible. Financial markets are crucial to enable this constant expansion by providing (interest-bearing) capital and channelling it where it is most profitable58,61,63. If a firm fails to stay competitive, it either goes bankrupt or is taken over by a more successful business. Under normal economic conditions, this capitalist competition is expected to lead to aggregate growth dynamics7,62,63,65.

However, two factors exist that further strengthen this growth dynamic60. Firstly, if labour productivity continuously rises, then aggregate economic growth becomes necessary to keep employment constant, otherwise technological unemployment results. This creates one of the imperatives for capitalist states to foster aggregate growth, since with worsening economic conditions and high unemployment, tax revenues shrink, e.g. from labour and value-added taxes, while social security expenditures rise60,62. Adding to this, states compete with other states geopolitically and in providing favourable conditions for capital, while capitalists have the resources to influence political decisions in their favour. If economic conditions are expected to deteriorate, e.g. due to unplanned recession or progressive political change, firms can threaten capital flight, financial markets react and investor as well as consumer confidence shrink51,58,60. Secondly, consumers usually increase their consumption in tune with increasing production60. This process can be at least in part explained by substantial advertising efforts by firms47,52,66. However, further mechanisms are at play as explained further below.

Following this analysis, it is not surprising that the growth paradigm is hegemonic, i.e. the perception that economic growth solves all kinds of societal problems, that it equals progress, power and welfare and that it can be made practically endless through some form of supposedly green or sustainable growth59. Taken together, the described dynamics create multiple dependencies of workers, firms and states on a well-functioning capital accumulation and thus wield more material, institutional and discursive power (e.g. for political lobbying) to capitalists who are usually the most affluent consumers61,67. Even if different fractions of the capitalist class have manifold and competing interests which need to be constantly renegotiated, there is a common interest in maintaining the capitalist system and favourable conditions for capital accumulation, e.g. through aggregate growth and high consumption51,62. How this political corruption by the super-affluent plays out in practice is well documented, e.g. for the meat industry in Denmark6.

# 1AR

## ADV

### 1AR---!

#### Interdependence is next---you have answered 1 of 3 scenarios so this doesn’t get them much.

#### Cap solves war. Finishing 2AC card

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

less motivated to pursue such expansion because of the lower relative value of land inputs in an industrialized economy. Moreover, their reliance on international capital markets may increase the potential costs of disruptions from serious 53 international crises.16 At the intrastate level, economic growth (if broadly shared) reduces grievances, bolsters the capacity of the state to handle security challenges, and increases the population’s opportunities for licit employment, thus raising the opportunity costs of participating in rebellions or insurgencies.17 Growth benefits that accrue along ethnic or sectarian lines, however, might increase the potential for intrastate conflict, as discussed in the previous section, and sharp declines in the rate of economic growth could be associated with an increased risk of internal conflict as well.18 Therefore, there are at least two different concepts that any operationalization of this factor should attempt to capture: the overall level of economic development and changes in the rate of economic growth. Over the short term, wealthy countries tend to remain wealthy and poor countries tend to remain poor, and their degree of wealth may have a strong effect on their overall likelihood of being involved in conflict. In addition, sharp declines in the rate of growth for a range of states may increase their likelihood of intrastate conflict in particular.

## K

### 1AR---Economists Good

#### Economists are good---scientific data helps economists makes constructive contributions that correct for the failures of capitalism.

Feuer 20, \*MICHAEL FEUER is Dean of the Graduate School of Education and Human Development and Professor of Education Policy at George Washington University, a Nonresident Senior Fellow at the Brookings Institution, and the author of [*The Rising Price of Objectivity: Philanthropy, Government, and the Future of Education Research*](https://www.amazon.com/Rising-Price-Objectivity-Philanthropy-Government/dp/1612509576)*;* (July/August 2020, “In Defense of Economists”, https://www.foreignaffairs.com/articles/world/2020-06-01/defense-economists)

Yet in making his case, Romer relies on problematic causal claims and overly broad characterizations. His argument is most suspect when he faults certain individuals—such as [Thomas Schelling](https://www.nytimes.com/2016/12/13/business/economy/thomas-schelling-dead-nobel-laureate.html), who helped popularize the use of cost-benefit analysis to inform government policy. Romer criticizes Schelling, incorrectly, for blurring the distinction between empirical questions, such as how much it costs to save lives, and normative questions, such as how much society should pay to save lives. But if society must choose how to spend limited resources, it is not surprising that one of the (albeit imperfect) metrics includes the dollar sign. Cost-benefit analysis and cost-effectiveness analysis are tools with advantages and limitations; it is one thing to point out their limitations, another to come up with better tools.

Not all economists are heralds of enlightened public policy, but it is a more heterogeneous profession than Romer’s critique suggests. He should be thanked for reminding economists that some of them have ignored or even perpetuated the familiar failures of capitalism. But he seems to suggest that all economists bow at the altar of free-market fundamentalism, and he implies that only the most orthodox strains of economic thought have influence. He does not mention those who doggedly advocate sensible government intervention, such as [Anne Case, Angus Deaton](https://www.foreignaffairs.com/articles/united-states/2020-02-03/epidemic-despair), Paul Krugman, and many others. Policymakers have too often failed to heed the advice of such public-minded economists. But Romer ought to have acknowledged their constructive contributions to economic development, environmental protection, educational opportunity, and the struggle against poverty and inequality.

In his plea for humility, Romer beseeches his fellow economists to just “say no when government officials look to [them] for an answer to a normative question.” That is a courageous suggestion, and one that could stimulate discussion about the role of science in society. But especially now, when the COVID-19 pandemic requires governments everywhere to embrace science, it is dangerous to scapegoat economists—or any scholars who understand collective action and stand against leaders who reject scientific evidence.

### 1AR---Cap Good---Environment

#### Renewables replace fossil fuels this decade.

Ambrose 19, guardian writier, citing Michael Liebreich, the founder of the research group Bloomberg New Energy Finance. (Jillian, 10-14-2019, "Rise of renewables may see off oil firms decades earlier than they think", *Guardian*, https://www.theguardian.com/environment/2019/oct/14/rise-renewables-oil-firms-decades-earlier-think)

The world’s rising reliance on fossil fuels may come to an end decades earlier than the most polluting companies predict, offering early signs of hope in the global battle to tackle the climate crisis. The climate green shoots have emerged amid a renewable energy revolution that promises an end to the rising demand for oil and coal in the 2020s, before the fossil fuels face a terminal decline. The looming fossil fuel peak is expected to emerge decades ahead of forecasts from oil and mining companies, which are betting that demand for polluting energy will rise until the 2040s. But energy experts are adjusting their forecasts as clean energy technologies, including wind and solar power, emerge faster than predicted and at costs that pose a direct threat to coal-fired electricity and combustion-engine vehicles. In the UK, renewable energy projects generated more electricity over the last quarter than fossil fuels for the first time since the country’s first public power plant fired up in 1882. It is a marked change from only 10 years ago, when gas and coal generated more than 70% of the UK’s electricity. The pace of progress has raised hope that the global groundswell of climate protest could spark fresh political will to accelerate the energy transition in time to keep global temperatures from rising to levels that could trigger a climate catastrophe. The UK Labour party has promised a Green Industrial Revolution to create almost 70,000 new jobs while working to create a carbon-neutral economy by 2030. In the US, the Green New Deal, spearheaded by the congresswoman Alexandria Ocasio-Cortez, aims to virtually eliminate the US’s greenhouse gas emissions within the next decade. Within the energy industry, experts believe the rapid rise of renewable energy in recent years may soon seem glacial compared with the changes to come. Michael Liebreich, the founder of the research group Bloomberg New Energy Finance (BNEF), says the substitution of old technology with new is always “like waiting for a sneeze”. “The first 1% takes forever, 1% to 5% is like waiting for a sneeze – you know it’s inevitable but it takes longer than you think – then 5% to 50% happens incredibly fast,” he says.

### 1AR---Cap Good---Global South

#### Capitalism is economically decolonizing now.

Smith 21, \*Noah Smith, Bloomberg Opinion columnist. He was an assistant professor of finance at Stony Brook University, and he blogs at Noahpinion; (April 2nd, 2021, “Against Hickelism”, https://noahpinion.substack.com/p/against-hickelism)

What Hickel gets wrong is his idea that Western powers, libertarian ideology, and international institutions have conspired to keep poor countries from adopting mixed approaches to their economies. In fact, activist state policies are quite common, and have contributed substantially to the poverty reduction documented above.

For example, take India. Dani Rodrik and Arvind Subramanian, in [a 2004 paper about India’s growth surge](https://www.imf.org/external/pubs/ft/staffp/2004/00-00/rodrik.pdf), write the following:

Most conventional accounts of India’s recent economic performance associate the pick-up in economic growth with the liberalization of 1991. This paper demonstrates that the transition to high growth occurred around 1980, a full decade before economic liberalization. We investigate a number of hypotheses about the causes of this growth—favorable external environment, fiscal stimulus, trade liberalization, internal liberalization, the green revolution, public investment—and find them wanting. We argue that growth was triggered by an attitudinal shift on the part of the national government towards a pro-business (as opposed to pro-liberalization) approach. We provide some evidence that is consistent with this argument. We also find that registered manufacturing built up in previous decades played an important role in influencing the pattern of growth across the Indian states.

In other words, India didn’t just liberalize things; it implemented its own version of a development state, and prospered as a result. The same is true of Southeast Asia, where Malaysia, Thailand, and to a lesser degree Indonesia have emerged as success stories and [have relied thoroughly](https://core.ac.uk/download/pdf/303071859.pdf) on development states and industrial policy. See Vietnam’s recent growth for another example.

In Latin America, it’s true that the Washington Consensus [slowed down structural change and productivity growth](https://rodrik.typepad.com/dani_rodriks_weblog/2010/06/the-most-telling-chart-i-have-seen-in-a-long-time.html). But that doesn’t mean Latin American governments had no role in reducing poverty. Bad advice may have held back the development state in Latin America, but governments there have engaged in extensive redistribution and better education.

A [series](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2304715) of [papers](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2226538) by Nora Lustig, Luis F. Lopez-Calva, and Eduardo Ortiz-Juarez documents these policies. Inequality in Latin American countries fell substantially during the 2000s:

Lustig et al. find that roughly half of this was due to government transfers and pension policies, while the other half was due to increasing incomes for workers at the bottom of the distribution — which in turn was due to better education. So Latin American governments, though they didn’t pursue the kind of manufacturing-intensive, export-led development policy used by many Asian countries, did manage to cut poverty with government action.

### 1AR---!D

#### Capitalism doesn’t cause fascism---it strengthens autonomy and freedom from oppression.

Cudd 10, Anne Cudd is Professor of Philosophy and Associate Dean for Humanities, University of Kansas. She is the author of Analyzing Oppression (2006), and co-edited (with Anita Superson) Theorizing Backlash (2002) and (with Robin Andreason) Feminist Theory (2005). (2010, “Capitalism, For and Against A Feminist Debate”, Cambridge University Press)

Capitalist markets and freedom

Freedom is the ultimate appeal of capitalism. The early proponents of capitalism, such as Adam Smith , as well as more recent defenders, including economists from such diverse political motivations as Milton Friedman and Amartya Sen, have all defended capitalism on this ground. While efficiency and the ability to raise living standards is an important reason to maintain free markets, and an aspect of the freedom that Sen extols, the freedoms provided by capitalism are intrinsically valuable and partially constitutive of freedom. As Sen argues, regardless of the efficiencies of the market, “the more immediate case for the freedom of market transaction lies in the basic importance of that freedom itself.” 97 While securing this freedom is straight- forward and simple for middle and upper class men of the First World, for women and others oppressed by traditional norms of their cultures, the freedom to transact in the marketplace can be liberating on a far wider scale. Thus, I will argue as well that capitalism enhances women’s freedom.

The free market system of capitalism enhances freedom in three ways. Traditionally freedom of exchange has been seen as a basic form of individual freedom, with which it would be wrong to interfere, and in this sense is a basic, negative freedom like the freedom of speech, assembly, the press, or conscience. Gerald Gaus, a liberal defender of the morality of markets, summarizes the liberal case for freedom in capitalism: “classical liberalism embraces market relations because (but not, of course, only because) they (1) are essentially free, (2) respect the actual choices of individuals, and (3) legitimately express different individuals’ rational decisions about the proper choice between competing ends, goods, and values.” 98 Market freedom is necessary to respect individuals as free choosers and designers of their own “experiments in living,” as Mill famously puts it. 99 Free markets also have positive aspects, however, in providing opportunities by increasing persons’ material wealth in order to choose things that they value. Another aspect of the positive freedom that markets promote is the freedom of persons to develop their autonomy as decision makers, and to find opportunities to escape from oppressive traditional roles. Markets also promote a third, more controversial, sense of freedom in that they allow persons to interact in mutually beneficial ways even when they do not know each other or have any other traditional reason to care about the other. I call this sense of freedom “social freedom.” In each of these ways – negative, positive, and social – markets have much, and in some cases even more, to offer to women, as women have been more confined by traditional roles to a con- strained family life, deprived of a fair distribution of benefits and burdens of family life, and treated as second-class citizens in their communities. While capitalism has already, as we have seen, brought great advances in the realm of negative and positive liberties, capitalism’s ability to destruct the old and create new forms of community offer a vision of freedom that is yet to be fulfilled. In what follows I will explore each of the three senses of freedom to see how capitalism is related to its realization.

Negative freedom is the freedom not to be interfered with, and a list of such freedoms typically includes civil and political freedoms, but also the economic freedoms to engage in market transactions and to use or benefit from one’s legitimately owned property. These latter two – the freedom to exchange and the freedom to use or benefit from one’s property – are two of the hallmarks of capitalism as I have defined it in terms of the private ownership of capital, free wage labor, and free market conditions. I also added the freedom from discrimination constraint, which is another aspect of negative freedom. Capitalist systems, whether any of the forms discussed at the beginning of my contribution or the enlightened form that I defend, do place some constraints on trade. Taxation by government to provide public goods that the market does not efficiently provide or to internalize negative externalities that traders would otherwise ignore to the detriment of bystanders places legitimate constraints on trade. So, too, do reasonable restrictions on trade designed to certify the quality of some goods. But capitalism by definition defends the basic freedom to open or close a business, to contract one’s labor with the highest bidder, and to exchange goods without attend- ing to the social status of the trading partners. Negative freedoms for the serf, the bonded laborer, or the slave would be freedom to leave the master – to not be impeded, whether by custom or law – to freely engage in wage labor. The nondiscrimination constraint also comprises this freedom; it is the freedom not to be constrained by features about one that are fixed at birth and that have nothing to do with one’s talents or abilities.

As Sen explains, there are four ways in which free markets are needed now to uphold negative freedom or, put another way, to resist tyranny and enslavement. 100 First, they allow persons to escape the bonds of traditional labor bondage by being able to seek wage employment away from traditional bosses. In many rural areas people farm land for traditional landowners, and markets for labor allow them to escape this bondage. This is the freedom capitalism offers that Marx recognized as an improvement over feudalism, where serfs had no choice in their place or way of life. Second, the communism of Eastern Europe and the former Soviet Union, and still existing in North Korea and Cuba, denied the freedoms to engage in exchange or choose where one lives. That these freedoms are now less abridged makes it no less important to recognize that they are important negative freedoms that capitalism upholds. Third, free markets help to liberate children from bonded labor

. Children in parts of South Asia are particularly susceptible to being placed in bondage to higher caste men, who put them to work making carpets or bricks for a very small pittance paid to their parents. The main reason for child labor is parental poverty. Where parents can earn more by their labor, they send their children to school. Even if the parents are still too poor or shortsighted or lack schools, if the children can earn wages by their labor, then they can do better than they do in bondage, where they have no income and no ability to resist harsh, violent treatment. Fourth, market employment for women is crucially important for their economic independence and for getting a better deal in intra-household distributions.

Outside employment gives women opportunities that are not directly tied to their menfolk. It makes them able to bargain for a better share of the family wealth and income, but also for less of the burden of chores, or enables them to pay others to do some of the work. The opportunity to work in the same kinds of jobs as men eventually wears away gender distinctions, or makes those distinctions less confining and more equal in terms of status. In this way, enlarging women’s negative freedom also tends toward enlarging their positive freedom.

Positive freedom is defined in two different ways: either as simply the positive supports that individual persons need in order to live a life with enough good choices to deserve the name freedom, or as also including the internal qualities of character that allow persons to be autonomous or self-lawmakers. The two are connected in that persons are typically unable to develop their capacities to plan their lives or live according to principles if they do not have enough to eat, or they have to worry about their physical health and security, or if they have not had an adequate education. Positive freedom in the sense of autonomy recognizes that completely unconstrained behavior is not necessarily action motivated by desires that are one’s own. And positive freedom in the sense of social supports recognizes that without the wherewithal (material and psychological) to act on one’s own desires, there can be no freedom. Sen refers to these as the process and opportunity aspects of freedom. 101 In this book I do not take a stand on which is the proper sense of positive freedom; both are clearly desirable as described. Instead, I argue that both senses of positive freedom are supported in capitalism, though not necessarily guaranteed. In the first sense, capitalism supports, but does not guarantee, the ability of persons to secure their own livelihood and material well-being. As we have seen, capitalism has increased life expectancy, improved health, and decreased fertility and child mortality on average. Increasing wealth is also correlated with increasing educational levels, and decreased fertility is correlated specifically with increasing female education. 102 Capitalism, as a highly cooperative and social form of production, requires socially coordinated and regulated efforts. Thus, capitalism is clearly a form of social provision in design as well as in outcome. Capitalism does not guarantee that any given individual will develop or exercise autonomy, but rather supplies external supports for autonomy by offering opportunities to plan and to raise one’s level of material well-being. In particular, capitalism does not guarantee that persons will develop autonomous desires, and in some ways may be seen as encouraging nonautonomous or what Kant would have called heteronomous desires, a point I will return to in section 6.

The most important objection against capitalism, however, is that it enables gross inequalities in wealth and income. When these inequalities also entail absolute impoverishment, so that persons do not have the ability to choose between decent ways of life, then this is clearly a failure. But capitalism raises the overall level of material wealth in a society, and so allows for the possibility of addressing such abject poverty. The fact that market interactions lead to inequalities is not, in itself, a denial of freedom. But it does pose the possibility of inequalities in power that can lead to positive and social unfreedoms, and indeed this is borne out in the actual world in many ways. Perhaps the worst sort is where wealth buys political influence in a nominally democratic country.

Before leaving the topic of inequality, however, it is important to point out that capitalism is not alone in supporting gross inequalities, but the way in which it does so is acceptable where it is not in other systems. North Korea, a socialist totalitarian system, creates gross inequalities of wealth through political power that controls resources. The leader and his minions live in vast wealth while much of the population teeters on the brink of famine. The communist systems of the Soviet Union and China were also notorious for the vast consumption and indulgence of their leaders compared with the average citizen, and notoriously one had to be a party member in the Soviet Union in order to own a car. Traditional societies are no better; the patriarchs of many such societies are rich while the young and the less powerful labor for far less. But in each of these cases the wealth comes not through productive effort, but rather through political control, and in some cases through inheritance. While the leader of North Korea is in charge simply by virtue of being the son of the previous leader, the richest capitalists in the world were not born to the previous generation of the wealthiest. It is true that Bill Gates and Warren Buffet were born to upper-middle-class families, but their vast wealth was earned through innovation, skills, and talents, and not through inheritance. This is not to say that inequality in wealth is not a problem, nor to say that opportunities to achieve great wealth are fairly distributed in capitalism. They are not, and that is a serious moral issue. But it is to say that socialist and traditional societies have at least equally difficult problems to address in terms of inequality in wealth and power . In the final section of my contribution, I will argue that an enlightened capitalism must do better to address inequalities that either amount to absolute poverty or cause political and social inequalities that deny free- dom. It is also important to note, however, that inequality that does not rule out good options for life does not seriously interfere with individual positive freedom, in either sense of the term. One need not live in the best of all possible worlds, after all, in order to be free enough to pursue one’s own projects.

Positive freedom as autonomy requires that one is not manipulated by the social structure under which one lives. One’s desires must be one’s own and one’s beliefs must be rationally generated for one’s actions to be entirely autonomous. Isaiah Berlin , who draws the distinction between negative and positive freedom in this latter way, ultimately rejects the idea of positive freedom because, he argues, to posit a breach of positive freedom one would have to impose desires on individuals that they do not acknowledge. 103 For governments to attempt to guarantee positive freedom, then, they would have to posit a good for their citizens and entice them to seek it, that is, in Rousseau’s famous phrase, to force their citizens to be free. Berlin, as a liberal, argues that freedom requires merely imposing no impediments to individuals’ given preferences. Positive freedom, Berlin concludes, insinuates a totalitarian menace.

Although Berlin’s is a commonly cited libertarian line of argument that is often aligned with defenders of capitalism, I want to argue that Berlin’s distinction between positive and negative freedom is drawn incorrectly, and that positive freedom in the sense of autonomy is not hostile to capitalism. It is especially important for women and other oppressed groups to attend to internal, psychological impediments to freedom that are generated by social constraints on what they can do and be. Negative and positive freedom cannot be easily separated for two reasons. First, a persistent lack of negative freedom for a social group harms the individuals of that group psychologically, causing them to lack positive freedom. Second, even though the idea that a government might posit an individual’s good for her raises the specter of totalitarianism, that fact does not vitiate the claim that an individual’s freedom can be compromised by a lack of vision of viable alternative options. A person can lack freedom with- out there being a clear way for the person to attain freedom in the future. Violations of negative freedom turn out to result in deeper harms that slide over into the kinds of harms that violations of positive freedom entail.

This is particularly the case for victims of oppression, and particularly for women. 104 Women are often convinced by many different social norms, expectations, and incentives to live within constraints that similarly placed (in terms of race, class, culture, and time period) men need not consider. This sort of internally constrained vision, whether it is because of false consciousness , shame, stereotype, or trauma, is the kind of violation of their positive freedom that should most concern feminists. Capitalism, by providing an option outside kin and traditional community norms for independence and social power, can allow women the wherewithal to escape these constraints. Even if a particular woman does not choose to work outside the home or compete in the marketplace as an entrepreneur, the fact that women have this option under capitalism increases the freedom of all women. Enlarging the set of things that women are seen as cap- able of can reduce the sense that women have that they are inferior, and this can increase their confidence in a wider set of social circumstances. It puts the lie to the idea that women are incapable, and helps women to stand up to ill-treatment and violence.

While many philosophers recognize negative and positive freedoms in quite similar ways, a third concept of freedom has been proposed by different philosophers in quite different ways. Quentin Skinner’s third concept of liberty is the lack of an ongoing threat to one’s freedom of thought and expression. 105 Skinner argues that this requires the existence of a noncoercive government or absence of a threat of domination by one. This form, however, is reducible to negative freedom from interference by government, insofar as it refers to legitimate forms of coercion. A legitimate government may legitimately apply coercive measures to assure the good of the whole or the protection of others who have a rightful claim to such protection, provided that the measures are, in Thomas Scanlon’s terms, something that no reason- able person could reject. Skinner clearly does not mean to rule that out, but rather to rule out coercion that is wrongful. Yet this is already covered under the concept of negative freedom; one is not free in the negative sense if one is coercively dominated by one’s government. However, it goes too far to suggest that one is not free if one is threatened by domination of a coercive government. In this sense Skinner’s third concept of freedom is similar to Philip Pettit’s view of freedom as nondomination. Both are mistaken to take the (implied) ability to pose a threat to be the same thing as a coercive threat.

If freedom in this third sense is compromised by even the threat of coercion or domination, then the free market is not free in this sense. But both Skinner and Pettit claim too much for a concept of freedom. As Gaus argues, it fails to distinguish between power to and power over. 106 Wealth gives one the power to afford many trades, but it does not give one the ability to exercise power over another by forcing a person to make a trade she or he does not want, and thereby limit that person’s liberty. While the classical liberal claims that market transactions are free as long as there is no force, fraud, or coercive threat, Pettit denies this with an argument that freedom requires nondomination, and one dominates another if one has the ability to exercise power over another (including by means of financial clout, technical advantage, or political power). To avoid domination, he argues, one has to have anti-power. Rule of law gives anti-power. Gaus argues that Pettit’s view is profoundly anti-market because the market will inevitably lead to unequal wealth and income, and this would always involves domination on Pettit’s understand- ing, since greater success would allow one to potentially exercise power over another. Thus, the market is full of relations of domination – everyone except Bill Gates is dominated, after all, on this analysis. Furthermore, since equals have equal ability to attack each other, if we all had equal power to achieve our ends, we would all be unfree. Such an analysis trivializes the concept of domination. If Skinner or Pettit are understood to sim- ply mean that freedom requires that there is no active threat or active domination, then this requirement can be seen as entailed already by negative freedom, since an active threat or domination is a direct constraint of one’s basic civil, political, and property rights. If Skinner or Pettit are taken to mean that there can be no potential threat, however, then their concept of freedom falls prey to this triviality objection. And insofar as these concepts are positive, that is, perhaps requiring social supports for individuals to be able to fully participate in social cooperation, they are reducible to positive freedom.

Berlin discussed and rejected a third sense of freedom that he finds in the claims of colonial oppressed persons, and which emerged in the writings of philosophers writing about colonial oppression, such as Jean-Paul Sartre and Frantz Fanon . Freeing oneself from oppression requires negative freedoms in the form of freedom of protest, and positive freedom. In progressive hands, “negative freedom is the capacity to destabilize identities and interrupt norms.” 107 This form of freedom, defended as well in Cynthia Willett’s Irony in the Age of Empire , is the desire for sociality and belonging within one’s group, and recognition of one’s social group and its distinctive values and norms from out- siders. She calls this third form of freedom, “solidarity.” Willett’s third freedom as solidarity requires something more than those two concepts, though. In particular, it requires the existence of social bonds that tie the individuals beyond their ability to resist and set themselves free. I want to resist the notion that this is a form of freedom, regardless of how good social bonds might feel. For they are the very forces of unfreedom in many cases. Bonds of solidarity both enable and constrain. The first, enabling, is indeed freedom, but the second, constraint, is not; it is the dark, exclusionary side of solidarity. Willett does not embrace any particular terms on which social solidarity might be forged. Cornel West’s appeal to nuclear family norms as form of third freedom raises her suspicions. She writes, “West’s appeal to the virtues of sacrifice may not subjugate women to patriarchal control, but it doesn’t sound like the battle cry for liberation that we might desire.” 108 But her suspicions here raise for me the question of why, then, she would align social bonds with freedom. If concepts of freedom proceed from sources of anxiety, I cannot think of anything that produces more anxiety than the requirement that I follow the norms of some particular community, without any opportunity to opt out of that community.

In my view we want freedom to pursue or reject social bonds – not to be dominated or threatened with constraints by others who would prevent our ability to pursue or imagine them. This is most important for members of social groups that have been oppressed for generations, as women have been. Such persons have a constrained vision of what is possible for them, and need to be able to see beyond these constraints that have been erected by others, but reinforced internally. Nonetheless, a third form of freedom can emerge under the right circumstances, namely the social conditions which allow and support individual autonomy for each person, which I call “social freedom.” Social freedom transcends positive freedom by considering the needs of each, not just of individuals one at a time. Autonomy requires an absence of oppressive social constraints that prevent free self- development. Systematic violence, economic discrimination and segregation, social shaming, and vicious stereotyping are among the most autonomy-defeating forces. Social freedom poses a collective obligation to provide for the education of the next generation, not because they are “our children,” as if we own them or they are our personal, genetic or property-inheriting legacy, but because children are at that stage where they need to be taught to develop their capacities if they are to be autonomous adults. Mill argued for this on the utilitarian grounds that more and higher quality pleasure is created that way. 109 Other moral and political theories can generate this obligation as well. For example, a contractarian can argue that by educating children in this way we provide more and better opportunities for cooperation for mutual advantage. A Kantian can simply argue that it is the only way to treat children as ends in themselves. Social freedom can be described as the Rawlsian union of social unions , which he argues arises in the society that is structured by his two principles of justice, and involves each taking pleasure in the achievements, the flourishing, of others. I take it that this is true of the society of free persons, which is not only free of cur- rent oppressions, but whose members seek to free all persons from oppression. For in such a society the individuals are able to seek their own good with good will toward others as well. They seek to encourage diversity and enhance the freedom of others. They take pleasure in and identify with the accomplishments of others. And further, they come to see their own freedom as connected to that of the others.

Capitalism supports social freedom, but, as with positive freedom, does not guarantee it. That would be too much to ask of an economic system alone. As I have argued elsewhere, capitalism embraces the positive aspects of competition. 110 Competition in capitalism is valuable because it allows many different persons to succeed at least in part. For businesses to be profitable there must be consumers to buy their products, and for there to be consumers to buy products, there must be a large sector of the population that earns enough through their labor to consume, and a significant number who can invest and create new opportunities for work. Capitalism thrives where the situation is more like what game theorists call a cooperative competition; that is, the players of the game have interests that are partly shared and partly opposed. The optimal and equilibrium outcome arises when each pursues a strategy that both maximizes their outcome, but also leads to the others being better off, as WE1 suggests. This contrasts sharply with the situation of either the zero-sum game, where there is only one winner and all the others are losers, or worse, a game in which, when each of the players pursues their own best strategies, a socially suboptimal outcome arises (such as in the Prisoner’s Dilemma).

This optimism about capitalism and its role in raising the sights of women is as applicable in poor, developing countries as it is in rich, First World ones. As Sen has argued, freedom is both constitutive of development seen in a progressive light, but also instrumental toward that form of development. Development as he understands it requires making human lives better on a variety of levels that he calls “capabilities.” Included among these capabilities are the abilities that I have listed as the interests of persons, and as the requirements of autonomy. Not only are negative and positive freedoms constitutive of development, though. Social freedom arises from the development of these freedoms as well. Capitalism is not the only route to development, but development seems, empirically, not to be complete without opening up markets to relatively free trade. Sen illustrates this by pointing to the development in China , which moved to a market-oriented economy in 1991. 111 While pre-reform China pursued basic education and health care for all, it lacked democratic freedoms, and this meant less responsiveness to famine and social crises. China suffered an enormous famine, in which 30 million people died, during the Great Leap Forward of 1958–61. Sen credits democracy with preventing any famine in India since independence in 1947. The development of capitalist markets has raised the overall level of income in China , however, to the point where it is unlikely to suffer another such catastrophe, despite the lack of democracy .

### 1AR---Nuke Winter

#### Nuclear weapons cause extinction

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1.6.2 Nuclear Weapons: The Forgotten Threat68 A nearly forgotten threat is the spectre of nuclear weapons. Nuclear weapons are the most deadly of all mass killing devices. They put civilization, the human future and the future of life on the planet at serious risk. They are illegal, immoral and waste resources that otherwise could be used to meet human needs. Humankind needs to find a path to abolish nuclear weapons before these weapons abolish us. And yet, since the end of the Cold War, nuclear weapons have generally been viewed with complacency by the world’s societies . These weapons, in the arsenals of nine countries, are largely kept out of sight and out of mind. To the extent that possessing and threatening to use nuclear force makes it into the public consciousness and discourse, they are justified on the grounds of nuclear deterrence, that is, the threat of nuclear retaliation. But that remains an unproven hypothesis about human behaviour and a potentially destabilizing one at that. Society is beginning to forget that an all-out nuclear war could lead to a Nuclear Winter , potentially sending temperatures to their lowest levels in 18,000 years, triggering an ice age, and destroying a large part of life on earth. The Nuclear Non-Proliferation Treaty (NPT) of 1970 divided the world into nuclear ‘haves’ and ‘have-nots’. As defined by the NPT, the nuclear (NPT) are those countries which had manufactured and exploded a nuclear weapon prior to January 1, 1967. France and China were added to the nuclear ‘haves’, when they later joined the treaty. Three countries never joined the treaty – Israel, India and Pakistan – and went on to develop nuclear arsenals; and one country, North Korea, withdrew from the treaty in 2003 and is playing an evil poker game building up a nuclear arms arsenal. All nine nuclear-armed countries are now engaged in modernizing their nuclear arsenals. The United States plans to spend $1 trillion doing so over the next three decades. Other nuclear-armed states also have ambitious modernization plans. The waste of resources and lost-opportunity costs are staggering. Beyond this, however, modernization of nuclear arsenals is making the weapons smaller, more accurate and more efficient. All this sums to making the weapons more usable by military commanders and thus more likely to be used. Modernizing nuclear arsenals is a clear violation of the NPT (Fig. 1.7). [[FIGURE 1.7 OMITTED]] Jonathan Granoff of the Global Security Institute adds: If less than 1% of the 14,000 nuclear weapons in the arsenals of the nine possessor states in the world were to explode, tons of debris would enter the stratosphere, lower the earth’s temperature, destroy the stability of the ozone layer, cause cancers and other horrible diseases to spread, and end agriculture as we know it. In sum, a nuclear exchange of the arsenals of only two of the nuclear powers, say India and Pakistan, could end civilization everywhere – as would a robust first strike from the arsenals of Russia or the United States .69 A quarter century after the end of the Cold War, some 2000 nuclear weapons remain on high alert, ready to be fired within minutes of an order to do so, meaning that civilization could be destroyed in a single afternoon of nuclear exchange. In July 2016, an International Peoples’ Tribunal on Nuclear Weapons and the Destruction of Human Civilisation was held in Sydney, Australia, condemning politicians and the nuclear weapons industry for violating human rights by still ‘modernizing’ nuclear arsenals and seriously considering the use of these weapons. The threat is global and the solution must also be global. It will require negotiations with the aim of truly prohibiting and eliminating nuclear weapons. These will not be easy, as there will be many interests at the bargaining table. It will require a new legal instrument for the phased, verifiable, irreversible elimination of nuclear weapons. It must result in a treaty that accomplishes the elimination of nuclear weapons , without leaving the world dominated by conventional forces. In the end, it must be a treaty that changes the dynamics of the planet from the insanity of Mutual Assured Destruction (MAD) to the needed new reality of Planetary Assured Security and Survival (PASS).