# 1AC v Michigan AH – R1 Texas

## 1AC – Texas

#### Plan: The United States federal government should prohibit anti-competitive business practices by the private sector that artificially centralize public blockchain infrastructure.

### Adv – Innovation

#### Blockchain will massively undermine status quo antitrust enforcement

Schrepel 19 [Thibault, Assoc Prof of Law at VU Amsterdam Univ, Faculty Affiliate at Stanford Univ CodeX Center, blockchain expert appointed to the World Economic Forum, “Is Blockchain the Death of Antitrust Law? The Blockchain Antitrust Paradox,” *Georgetown Law Technology Review* 3.2, heinonline, JCR] \*edited for ableist language

Because the future evolution of blockchain is unknown, it is difficult to evaluate the scope of the practices that will develop along with it. This article has identified several unilateral anticompetitive practices. They are most likely to occur on private blockchains. However, most of the usual mechanisms of antitrust law will be ineffective in the face of blockchain. 2 3 8 Even with the "regulatory infiltration" proposed using a "law is code" approach, some of the instruments which are used today, such as emergency measures or commitments, will be ineffective in their current form. 239 In the face of blockchain, current antitrust law may well be eliminated. In fact, three factor corroborate this hypothesis. First, antitrust law will probably become ineffective without regulatory infiltration. For the first time in its history, antitrust law will have to be greatly supplemented by regulations taking the form of a "law is code" approach. Indeed, antitrust law will not have complete answers to three issues: how to detect the anticompetitive practices committed on the blockchain, how to identify the actor responsible for these practices, and finally, how to remedy them for the future. While the author of an anticompetitive blockchain can sometimes be identified, the effectiveness of sanctions and remedies may be ~~crippled~~ [undermined] by blockchain's immutability. Presciently, the home page of the Ethereum Project reads: "Build unstoppable applications."240 Thus, even where antitrust law finds a way to regulate blockchains, it may die because it is no longer a creator of welfare on its own. Think of it as the unfortunate death of jazz: the music still exists and has listeners, but jazz no longer creates debate or leads to any movement that ventures beyond its own framework. Second, public blockchains will limit monopolization even when new governance mechanisms are implemented. In particular, predatory pricing and refusal to deal appear to be exceedingly unrealistic, while tying, margin squeezing, exclusionary dealing, loyalty rebates, and exploitative and discriminatory abuses are unlikely to occur. Furthermore, because the transactions implemented on public blockchains are visible to all, the incentive to engage in anticompetitive practices is reduced since market surveillance and industry monitoring can easily root out illegal activity. However, some perpetrators will be protected by the "opacity effect" created by the characteristics of the technology. This is particularly true for private blockchains where entering it, absent regulation infiltration, is technically impossible. In short, anticompetitive practices are expected to be rare on public blockchains, but these practices could be plentiful on private blockchains that operate below authorities' radar. The same issues arise outside the scope of unilateral practices, namely, for collusive agreements where the identification of colluders and the unsuitability of existing mechanisms to stop and punish such practices is equally problematic.241 The third and final reason to expect the death of antitrust law is tied to its foundations. Without a doubt, regulators will find ways to submit blockchains to the law, whether it is by way of regulatory infiltration-which is recommended-or other ways that place the technology at risk, such as the regulation of end users, transportation layers, information intermediaries, blockchain intermediaries, transaction processors or code, architecture or hardware manufacturers-which is not recommended.m But even if antitrust law remains as a body of positive law,24 3 the regulator may end up protecting the existence of antitrust law even though its initial goals are no longer fulfilled. After all, modern antitrust law is built on the premise that the Sherman Act is concerned with trusts.2 44 Without trusts, are antitrust laws needed? This is the "blockchain antitrust paradox": antitrust laws' potential lack of legitimacy (and efficacity) on the one hand and the need to stop anti-competitive practices on the other. Furthermore, the death of antitrust law might not be solely linked to blockchain technicalities. The fate of antitrust law might also be determined by the inherent conflict between the logic of blockchain technology and the logic of antitrust law. Recall that there is no trustee in the sense of a third-party fiduciary within the framework of blockchain. In other words, the target of antitrust laws is absent.245 Blockchain challenges the raison d'etre of antitrust law. Conversely, antitrust law was created for, and is applied by, centralized regulatory agencies, such as the FTC, the DOJ, and the European Commission. Enforcing antitrust law amounts to imposing vertically designed rules and concepts on a technology built around the desire for decentralization.246 But blockchain is used not only for "philosophical" reasons related to its decentralized nature but also because it is practical, and in fact, blockchain's practicability results from its decentralization.247 In short, this opposition between the vertical nature of antitrust law and the horizontal or decentralized nature of blockchain raises a legitimacy concern. The cultural and sociological factors that led to the development of blockchain technology cannot be ignored by the law. As a consequence, on top of all the challenges related to blockchain technicalities, another concern is the legitimacy of antitrust law with respect to this technology. To address this concern, a way must be found to decentralize antitrust law and antitrust authorities.248 This will require a minima to design and implement new governance models using blockchain.250 Antitrust authorities can no longer rely on pyramidal structures nor continue to operate in a closed circle on the model of nation-state-led government. Antitrust law as we know it must die and be reborn. If not, it soon will be illegitimate.

#### Leads to a confrontational regulatory approach, which gets circumvented and guarantees dominance of centralized ecosystems

Schrepel 21 [Thibault, Assoc Prof of Law at VU Amsterdam Univ, Faculty Affiliate at Stanford Univ CodeX Center, blockchain expert appointed to the World Economic Forum, *Blockchain + Antitrust: The Decentralization Formula*, p.238-9, JCR]

Opting for a confrontational approach will put blockchain ecosystems at risk. Let me generalize my findings and return to the MOAF approach to explain why that is. First, a confrontational approach would not be desirable from the regulators' point of view. Aggressive law enforcement would indeed threaten the fundamental principles of encryption and immutability. While that might deter some illegal behaviors, it would also threaten all sorts of beneficial practices that rely on either of these two principles. Thus, the accuracy level would remain low because it would entail numerous false positives and eventually deprive regulators of blockchain's contribution to the common good. In terms of manageability, a confrontational approach would put blockchains under the regulator's control. Enforcing and monitoring costs would be extremely high. This approach would require costly deanonymization services and expansive practices altering the registers, stopping smart contracts and carrying out forks. Second, this approach would also be detrimental to blockchain communities. In terms of objectivity, regulations of this sort could be relatively predictable for private actors, but objectivity would suffer from the resistance of certain blockchain communities. Technical innovations would rapidly emerge to escape regulation, forcing the regulator to continually adapt its regulations and apply them inconsistently. In terms of flexibility, this confrontational regulation would open the blockchain fortress with a tank. It would be highly coercive. New regulations would forcibly impose enforcement mechanisms on all blockchain communities — or, at the very least, on a (large) part of them — by eliminating some of the technology core characteristics. In other words, implementing regulations of this sort would be like using a sledgehammer to crack a nut. This is not a pretty picture." Blockchain is still a burgeoning technology and adopting a confrontational approach would end up removing some essential features for its survival against other species (i.e., centralized ecosystems). Alternatively, these regulations would be ineffective, as communities would work to escape the rule of law. If confrontational law lags behind the technology, its enforcement will partially be held in check for the reasons I have discussed. If, on the contrary, confrontational law is ahead of technology, the latter will circumvent and escape it by eliminating control mechanisms and changing governance and incentives (not always for the better). This will be limited, as only the most advanced part of the community would succeed; but that fraction would take a chunk of the users with it. The rule of law would not regain its full primacy. In fact, we have seen this already. When the New York State Department of Financial Services imposed a requirement to obtain a "BitLicense" before engaging in Bitcoin activities?' several startups moved to New Jersey. If developers cannot vote with their computers, they vote with their feet by relocating their operations. This affects all users. In a nutshell, one must reject the confrontational approach because it allows neither the law (here, antitrust) nor the technology (here, blockchain) to fully achieve its objective. One must find another way to enter blockchain ecosystems. I offer an alternative option in that regard.

#### US failure to adapt to blockchain tech is causing a massive soft-power shift to the Indo-Pacific – wrecks leadership and crushes growth for decades. Leads to walled gardens that disrupt international trade.

Wintermeyer 21 [Lawrence, co-founder of Global Digital Finance, a non-profit promoting fair and transparent markets, former CEO of Innovate Finance, the UK FinTech members association, “Will The Revolution Be Tokenized: Governments, Blockchain, And The Digital Space Race,” 10/06/21, <https://www.forbes.com/sites/lawrencewintermeyer/2021/10/06/will-the-revolution-be-tokenized-governments-blockchain-and-the-digital-space-race/?sh=337f9b7e5170>, accessed 10/29/21, JCR]

In 2015 The Economist magazine hailed blockchain as “the trust machine”, capable of replacing governance structures, displacing institutions, and bringing a new level of transparency to transactions and information, with implications across public life. In the years since, the technology has produced trillion-dollar decentralized financial markets and a slew of innovation over blockchains especially in financial services, with the rise of bitcoin, stabelcoins, decentralized finance or DeFi, Central Bank Digital Currencies (CBDCs), and other industries such as shipping, logistics and supply chains are starting to scale use cases. OECD research, however, shows little breakthrough in blockchain innovation in government and minimal impact in the public sector - the technology is often described as a solution in search of a problem. While the technology is rapidly maturing, we are starting to see governments take an interest in blockchain and distributed ledger technology (DLT) in areas such as tax, standards and certification, digital identity, and data privacy. For governments, assessing blockchain’s disruptive potential is both a practical challenge and a philosophical one. The raison d’etre of many public institutions is the provision of public goods, and the underwriting of rights and the social contract – functions that blockchain’s pioneers sought to replace with cryptography, networks, and protocols. Whether this technology will be used to displace or complement traditional governance models is an open question, as is its ability to deliver such transformation. This year’s opening discussion at the OECD’s 4th Annual Blockchain Policy Forum addressed several the main opportunities and challenges at the intersection of technology and governance to disentangle blockchain’s promise from reality and explored the extent to which the technology can and should be guided by governments towards better models of social and economic connection. “In global trade, the leaders in blockchain technologies are the Indo-Pacific based governments like China and Singapore. Trade is the lifeblood of this region which is considered the global trading hub. China and Singapore have been early to understand the benefits of the blockchain for supply chain management, not just for the provenance and tracking of goods, but for tax, customs, and digital rights. “Blockchain has dramatically scaled the 14th century Venetian innovation of the double-ledger into a theoretically infinite multidimensional ledger which is public, open, transparent, and immutable, and secures access using cryptography. It’s like another layer of the Internet, with greater resilience against cybercrime, and integrates multiple stakeholders in much better management of the economy,” says Alex Sandy Pentland, MIT professor and director of MIT Connection Science. In a world with geo-political turbulence and trade headwinds, digital leadership in sectors like central bank digital currencies and supply chains using new digital technologies really matter – welcome to the digital space race. The intellectual property, technologies, and standards in blockchain are now being used to gain a global foothold in trade. Importantly, this is helping to drive rapid adoption with low friction use cases and easy to access services. Blockchain is helping counties that are early movers and leaders in this space to position themselves to generate decades of industrial, societal, and economic growth. “Governments need to learn how to adopt and adapt to polycentric governance models to better engage the broad range of actors and stakeholders required to compete in the digital world without having to create new overarching bureaucratic institutions,” says Primavera De Filippi, permanent researcher at the National Center of Scientific Research in Paris (CNRS) and faculty associate at the Berkman Klein Center for Internet & Society at Harvard University. Most of the blockchain DLT technologies are developed in open source with large pools of developers participating by voting through digital protocol governance models which extend in many protocols to other entities becoming governance nodes. This is akin to a large mutual society and is risk adjusted both by the volume of experienced participants and stakeholders and its polycentric nature. “There are two big benefits for governments building out their programs on the blockchain; the first is COLLABORATION – governments can attract a larger and more diverse range of stakeholders to build out and adopt the digital infrastructure for trade, tax, identity, financial services, etc., and use the power of the crowd – this is markedly different to large enterprise software projects which have significant concentration risks including the number of commercial stakeholders that can engage. The second is CERTIFICATION – governments can move away from using “sticks” by offering “carrots” to stakeholders that exhibit measurable compliant behaviors – this could dramatically change the way we look at regulation and compliance. “This is all achievable through smart contracts on the blockchain and can be accomplished now without new contract law if we adopt “functional equivalence” for smart contracts, just as we adopted it moving from paper to electronic contracts. The only big decision that governments need to make upfront is whether to use public or private blockchains, or a mix, and this decision merits significant consideration of the specific use case,” says De Filippi. Adds Pentland, “there is a great transfer of “soft power” taking place with blockchain technologies, and when it comes to trade, it is Indo-Pacific led. It is important as the systems grow that they focus on a level of interoperability with each other through standards, to ultimately deliver the benefits that distributed ledger technologies offer – multi-dimensional participation. If countries seek to go down the “walled garden” route, interoperability will go down the drain and the global trade system will be open to further arbitrage opportunities by those that seek to exploit this situation.” Governments and industry must recognize that blockchain is now mature, here to stay, and ready to use, today. The technology is more than a decade old and the underlying technologies of distributed databases, cryptography, and peer to peer networking have been with us since the dawn of computing. Software developers are delivering blockchain use cases to market quicker than most industries, governments, and regulators can keep up with – that is the power of the polycentric networked crowd. There is more innovation going on outside your four walls than inside, and you need to know how to plug into it. As is often the case, it is the systematic factors coupled with institutional bias that are barriers to governments and managers understanding how and when to mobilize new innovative technologies and methods for society, and in many instances, few are really incentivized to make it happen. The blockchain revolution provides “the platform” to engage large numbers and dimensions of stakeholders in the economy through shared mutual governance – the major incentive is already there, it is baked into the governance model – greater and more efficient economic participation in the economy. Governments would be wise to be serious about prioritizing the digital space race. If the revolution is tokenized, it will be because large public blockchain consensus protocols are tokenizing it, and large swathes of global business and consumers are using it.

#### Kills interdependence – conflicts escalate to war.

Dr. Asma Iqbal & Muhammad Rafi Khan 21, Assistant Professor of Political Science, Government Graduate College for Women Samanabad; Lecturer/Research Officer at Minhaj University Lahore, “Power and Interdependence with Internet,” Pakistan Social Sciences Review, Vol. 5, No. 1, pgs. 1142-1153, 3/30/21, https://pssr.org.pk/issues/v5/1/power-and-interdependence-with-internet.pdf

Interdependence

Reflecting a softer image of power and extending its domains to global social structures, interdependence is a multidimensional term, that gained traction with the emergence of the concept of globalization. It refers to a state, or a condition, that compels two or more actors to seek cooperation. For such cooperation, the absence of enmity is not a requirement. There are many examples of interdependence between fierce enemies, like Pakistan and India, China and India, and Russia and the US. The goals of this interdependence are to fulfill domestic and international deficiencies for national interest, and sometimes, international interest. The presence of Russia and the US in the Security Council, where both take decisions together in international interest, and can also veto any move for their own or their ally’s national interest.

The world today has mostly been eradicating the threats of war and becoming increasingly interdependent. Their actions are mostly based on the cost- benefit ratio. For instance, if a state must choose between war and trade and applying the statistical models for a complete understanding of both before deciding, the trade will supersede in choice over the war in most cases. That is why even enemies are doing trade, while the war of words also gains traction. This is because the cost of war is higher, and the benefit of trade is higher. The democratic peace theory and the McDonald Peace theory exist in almost the same domains, where political relationship and economic connectivity, both are eradicating scenarios of a possible war.

As an effective tool of soft power, the interdependence has shattered the isolation of introverted peoples and merged them with vibrant, dynamic, and socially linked societies. It relies on multidimensional mediums to avoid conflicts, increase connectivity, and inculcates multilateralism. Among these, the Internet is the most obvious, effective and resourceful medium that “frees us from geographic fetters and brings us together in topic-based communities that are not tied down to any specific place. Ours is a networked, globalized society connected by new technologies” (Dentzel, 2014).

The internet, coinciding with matters related to power, is a world of unknown depth. It is the most effective tool of connectivity in this modern world. It can also be designated as a doorway between traditional unilaterality and a multilateral world. It boosted interdependence and opened new horizons of connectivity and cooperation. Therefore, the virtual age has cut the distances short and challenged the hardships of the physical world with a counterbalance, depicted in the figure below.

#### This decks digital readiness – we’re getting passed up by countries with mature infrastructure.

Andriole 21 (Steve Andriole, Thomas G. Labrecque Professor of Business Technology in the Villanova School of Business at Villanova University, 12-13-2021, The US-China Technology Arms Race. It’s Not A Two-Country Race Anymore., Forbes, <https://www.forbes.com/sites/steveandriole/2021/12/13/the-us-china-technology-arms-race-its-not-a-two-country-race-anymore/>) MAM

The race for global leadership in artificial intelligence (AI), machine learning (ML), blockchain, cryptocurrency and digital infrastructure – among many other technologies – is well underway. But now, instead of the proverbial two-country races we’re so familiar with, the race has expanded. It’s now **any country’s race**. How could this be when the US and China are spending so much money? The metrics have changed. Today it’s about patents and adoption.

There are lots of technologies that attract attention. The world is obsessed with AI/ML, blockchain, cryptocurrency, IOT, big data analytics, cybersecurity, 3-D printing and drones. It’s excited about virtual reality, augmented reality and mixed reality. Everyone loves talking about driverless cars, ships and planes. While we’re growing increasingly worried about social media and privacy (as we should), we’re still addicted to our ever-more-powerful smartphones. And then there’s The Metaverse.

AI/ML is a huge family of technologies with enormous professional levels. Lest everyone believe the US and China are the only countries investing in AI/ML, there are many countries that have unveiled substantial AI/ML research and development (R&D) strategies including the United Kingdom, Russia, Israel, Japan and France. Singapore, South Korea, Sweden, Taiwan, the UAE and Mexico are also strategically focused on AI/ML. The world is well aware of the application potential of AI/ML. In fact, the global field’s getting crowded.

While blockchain enables cryptocurrency transactions, it’s by no means limited to currency exchanges: blockchain is **transactionally agnostic**. When we look at the adoption of blockchain, more and more local, regional and national governments are adopting blockchain or approving blockchain investments. Blockchain is already widely adopted in China and Asia across multiple vertical industries, such as insurance and agriculture. Australia’s “CSIRO’s Data61 has formed a consortium with law firm Herbert Smith Freehills and IBM to build Australia’s first cross-industry, large-scale, digital platform to enable Australian businesses to collaborate using blockchain-based smart legal contracts.” The European Union (EU) has made blockchain a priority. Other countries are making similar commitments to blockchain, including Dubai, Estonia and Gibraltar, among other government offices

As of now, governments cannot control cryptocurrency – though they can – and will – regulate and tax it. More and more businesses are accepting it; many have no choice since competitors are accepting it. Crypto also provides a safer and cheaper way to transact. Payment system incumbents will eventually champion cryptocurrency. Some countries are “open” to the use of stable-coin cryptocurrencies. The US is “open” (with some yet-to-be-precisely-defined requirements) to the possibilities of cryptocurrency, as are Canada, Australia, the European Union (EU), Finland, Belgium, Switzerland, Malta, Cyprus, Bulgaria, the UK and Germany. Some countries, like China, Russia, Vietnam, Bolivia, Ecuador and Columbia, have essentially banned Bitcoin and cryptocurrency, though several of these countries have a lot of blockchain and cryptocurrency start-up activity. In short, crypto is almost everywhere. The real race here is about acceptance.

In addition to AI/ML, blockchain and cryptocurrency, is a country’s ability to participate in the technology arms race through the readiness of its digital infrastructure. Digital readiness describes the condition of a country’s overall digital infrastructure and its ability to adopt AI/ML, blockchain, cryptocurrency and other emerging digital technologies. Countries that have well-developed digital infrastructures – such as Sweden and Norway – are able to leverage technologies as long as, of course, they’re inclined to do so. In order for countries to leverage technology they must possess basic and always-improving digital infrastructure capabilities (broadband, cloud, big data, cybersecurity, etc.) because adoption and scalability require a modern digital infrastructure. The mature countries here include Estonia, Finland, Norway, Denmark, New Zealand, Israel, Canada, Sweden, South Korea, the Netherlands and Singapore. Surprised by the list? (The comparison of this list with the list of military powers is fascinating, and clearly differentiates the military and technology arms races.)

#### Leadership on digital trade reinvigorates partnerships in the Indo-Pacific.

Bera and Cutler 10/8 (Ami Bera, Congressman for Sacramento/California District 7, and Wendy Cutler, Vice President at the Asia Society Policy Institute (ASPI), 10-8-21, Bring Washington Back to the Table, The Diplomat, <https://thediplomat.com/2021/10/indo-pacific-trade-bring-washington-back-to-the-table/>) MAM

If there is one major tenet that sets apart the foreign policy approaches of U.S. President Joe Biden and former President Donald Trump, it is this: Abandoning American leadership in the international community cedes the power to set international norms, rules, and values to other nations. Rejoining various multilateral organizations and agreements and reinvigorating our global partnerships, in areas like COVID-19 response and climate change, are welcome steps by the Biden administration. However, international engagement should not stop there. Rather, the Biden administration should build on this model and prioritize a forward-looking and impactful economic and trade agenda with the Indo-Pacific region, particularly in working with like-minded regional partners to **set the rules of the road on digital trade.** We were both involved in boosting our economic engagement with the Indo-Pacific region during the Obama administration, one as a senior official at the Office of the U.S. Trade Representative (USTR), the other as a member of Congress working to build support for and provide oversight of the president’s agenda. What we experienced during that time was the United States taking the lead in developing policies to open markets for U.S. exporters, workers, and farmers, while also using the United States’ prestige and leadership to foster more pro-worker, pro-democracy, and pro-consumer policies in the region. Make no mistake — the effort to remove trade barriers and expand economic opportunity in the Indo-Pacific has continued, with countries in the region actively working on agreements among themselves and with nations in other regions. The countries of the region are talking, debating, and negotiating over trade policies to help promote growth, create jobs, and improve livelihoods for their citizens. While taking place far from Washington, these discussions are impacting our economy, given global supply chains and future agreements the U.S. may want to develop. But right now, we’re not at the table. Biden and USTR Ambassador Katherine Tai have made it clear that they want to take a thoughtful approach on U.S. trade policy, particularly to ensure it continues to be pro-worker and pro-environment. We don’t disagree, having seen both the policy and political benefits when forces aligned during the re-negotiation of NAFTA that resulted in USMCA. There were improvements, compromises, and tough decisions made all around, and the agreement is better for it. That’s why we strongly believe the United States must continue that work and look for opportunities elsewhere to expand economic opportunity, lead with our values, and develop policies that benefit the U.S. and like-minded partners. One important way the U.S. can do this is by working on a regional digital trade agreement with our friends in the Indo-Pacific region. Digital trade touches all sectors of our economy, including manufacturing and agriculture, and involves rules around access to the internet, digital inclusiveness, trade facilitation, sharing and storage of data, and others — all critical issues for which rules and norms and policies are still being developed and decided, and which grow in importance every single day. As other countries are far along in this work with each other, we risk losing the opportunity to shape policies that directly affect American citizens and businesses here at home. We’re also losing the opportunity to ensure the policies that ultimately get enshrined are ones that prioritize democratic values, such as a free sharing of ideas and information, individual privacy, and business and consumer protections. We remain optimistic that the Biden administration will succeed in repositioning the United States as a force for good and a force for international cooperation after four tumultuous years under the previous administration. There is no better way to do that than by advancing economic opportunity and freedom of choice in one of the most economically important and dynamic regions in the world – the Indo-Pacific. The Biden administration has a unique window of opportunity to do so. We hope they seize it before the table is set without us.

#### That solves global existential risks – it’s reverse causal.

Joseph S. Nye Jr. 20. Harvard University Distinguished Service Professor, Emeritus. "COVID-19’s Painful Lesson About Strategy and Power". War on the Rocks. 3-26-2020. https://warontherocks.com/2020/03/covid-19s-painful-lesson-about-strategy-and-power/

In 2017, President Donald Trump announced a new National Security Strategy that focused on great-power competition with China and Russia. While the plans also note the role of alliances and cooperation, the implementation has not. Today, COVID-19 shows that the strategy is inadequate. Competition and an “America First” approach is not enough to protect the United States. Close cooperation with both allies and adversaries is also essential for American security.

Under the influence of the information revolution and globalization, world politics is changing dramatically. Even if the United States prevails in the traditional great-power competition, it cannot protect its security acting alone. COVID-19 is not the only example. Global financial stability is vital to U.S. prosperity, but Americans need the cooperation of others to ensure it. And while trade wars have set back economic globalization, there is no stopping the environmental globalization represented by pandemics and climate change. In a world where borders are becoming more porous to everything from drugs to infectious diseases to cyber terrorism, the United States must use its soft power of attraction to develop networks and institutions that address these new threats. For example, this administration proposed halving the U.S. contribution to the World Health Organization’s budget — now we need it more than ever.

A successful national security strategy should start with the fact that “America First” means America has to lead efforts at cooperation. A classic problem with public goods (like clean air, which all can share and from which none can be excluded) is that if the largest consumer does not take the lead, others will free-ride and the public goods will not be produced. As the technology expert Richard Danzig summarizes the problem:

Twenty-first century technologies are global not just in their distribution, but also in their consequences. Pathogens, AI systems, computer viruses, and radiation that others may accidentally release could become as much our problem as theirs. Agreed reporting systems, shared controls, common contingency plans, norms and treaties must be pursued as a means of moderating our numerous mutual risks.

Tariffs and border walls cannot solve these problems. While American leadership is essential because of the country’s global influence, success will require the cooperation of others.

On transnational issues like COVID-19 and climate change, power becomes a positive-sum game. It is not enough to think of American power over others. We must also think in terms of power to accomplish joint goals, which involves power with others. On many transnational issues, empowering others helps us to accomplish our own goals. The United States benefits if China improves its energy efficiency and emits less carbon dioxide, or improves its public health systems. In this world, institutional networks and connectedness are an important source of information and of national power, and the most connected states are the most powerful. Washington has some sixty treaty allies while China has few. Unfortunately, as Mira Rapp-Hooper recently argued, the United States is squandering that power resource.

In the past, the openness of the United States enhanced its capacity to build networks, maintain institutions, and sustain alliances. But will that openness and willingness to engage with the rest of the world prove sustainable in the current populist mood of American domestic politics? Even if the United States possesses more hard military and economic power than any other country, it may fail to convert those resources into effective influence on the global scene. Between the two world wars, America did not and the result was disastrous.

#### Effective regulations key to US competitiveness in blockchain – organizations want reliable and stable regulatory environment to build trust

Werbach 18 [Kevin, Professor of Legal Studies & Business Ethics at the Wharton School, FCC Agency Review Co-Lead, “Trust, but Verify: Why the Blockchain Needs the Law,” *Berkeley Technology Law Journal* 33, heinonline, JCR]

One difference between the regulatory debates in the dot-com and distributed ledger eras is that the United States is no longer the dominant source of activity. The Internet today is highly globalized, but in the 1990s, usage and startup creation were heavily centralized in the United States. In contrast, there are concentrations of distributed ledger activity around the world. London, Berlin, Switzerland, and Singapore are major hubs, with significant centers in mainland China, Canada, South Korea, Japan, Estonia, Argentina, and Hong Kong.209 Vitalik Buterin, leader of the Ethereum project, is a Russian who grew up in Canada, heads a foundation headquartered in Switzerland, and now lives in Singapore. If he had created an early Internet startup, he would have likely headed to Silicon Valley. The global distribution of blockchain development activity encourages jurisdictional competition among regions. U.S. dominance of the early Internet industry produced major benefits, both economic and in terms of global soft power. Hoping to be the Silicon Valley of the crypto economy, countries ranging from tiny Gibraltar to Russia are creating new legal frameworks to attract blockchain startups, coin offerings, and other activity. The early leader is the canton of Zug, Switzerland, which combines a stable government, a central location in Europe, a welcoming environment for cryptocurrency companies, and very favorable tax policies. 210 It is bidding to be the cryptocurrency equivalent of Delaware for U.S. incorporation, although the real Delaware, among other locales, seems determined to compete. The U.S. is still a very important driver of blockchain activity. A significant portion of core Bitcoin development occurs in the United States. New York is one of the primary centers for distributed ledger technology in financial services. Many of the most significant investors in blockchain startups are in the United States, including Digital Currency Group, Blockchain Capital, Andreessen Horowitz, and Union Square Ventures. U.S. technology and services firms such as IBM, Microsoft, and PwC are at the forefront of most large-scale enterprise implementations of distributed ledger applications. The technical talent and technology startup ecosystems in the United States remain unmatched. It bears repeating that major Internet companies did not locate in Sealand or island tax havens; they went to where the developers and customers were. Organizations do not just seek the least regulation; they seek the best regulation, among a slate of other factors. A reliable and stable regulatory environment will be important for building trust in blockchain platforms that seek a large user base. Similarly, even jurisdictions keen to attract entrepreneurial businesses in fields such as cryptocurrency do not simply engage in a race to the bottom. Singapore is a hotbed of blockchain activity, due in part to its permissive regulatory attitude. However, the Monetary Authority of Singapore made clear in an August 2017 announcement that initial coin offerings there would be subject to money laundering and terrorist financing restrictions.' They would also be regulated as securities offerings when they "represent ownership or a security interest over an issuer's assets or property. "212 Some small territories focused on generating revenues may take an "anything goes" attitude, but ICOs based there will eventually be less trusted and therefore less successful in attracting capital. Moreover, the countries where that capital comes from will not be shy about exercising jurisdiction. These are the same reasons why all companies today do not domicile in offshore tax havens. While the BitLicense may have given the United States a poor regulatory reputation in some cryptocurrency circles, more recent initiatives were more thoughtfully drawn. The Uniform Law Commission, which creates model codes that are widely adopted by state legislatures, adopted a model cryptocurrency law in 2017 that limits the scope of regulation.213 The CFTC created a LabCFTC group to study cryptocurrencies and engage with the nascent industry.214 The SEC's investigative report on initial coin offerings and The DAO was widely praised as measured and technically knowledgeable.21 s There is no certainty that the United States, or any jurisdiction, will strike the appropriate balance between flexibility and protection in its regulatory approaches to blockchain-based systems. The debates have just begun. Overall, though, regulators who do nothing will be a greater threat to the development of the market than those who engage in thoughtful and evolving efforts to address public policy considerations.

#### Focusing antitrust law on practices that artificial centralize blockchain creates synergy that assures cooperative relationship between blockchain & antitrust – solves regulatory certainty and innovation

Schrepel 21 [Thibault, Assoc Prof of Law at VU Amsterdam Univ, Faculty Affiliate at Stanford Univ CodeX Center, blockchain expert appointed to the World Economic Forum, *Blockchain + Antitrust: The Decentralization Formula*, p.75-8, JCR]

In fact, antitrust law and blockchain ecosystems seek decentralization at two different levels. Antitrust law prohibits certain categories of conduct, creating tensions with tech communities without focusing much on digital architectures. Blockchain, on the contrary, seeks to decentralize by providing its users with a specific digital architecture. It does not prohibit (anticompetitive) practices where code allows. This creates tensions between them, as I show in Part 2 of this book. Their cooperation will require the identification of ways to deal with these mutual provocations, as I will explain in Part 3. As things stand, both of these communities exhibit what Veblen called "trained incapacity" — the difficulty to think beyond a set of constraints and assumptions. Policymakers tend to believe that the law should be the most important constraint organizing our lives. For that reason, legal rules are often applied without looking for ways to coordinate with other constraints, including digital architectures." In the meantime, blockchain communities tend to view legal enforcement as an adversary, and not as an ally, As John Perry Barlow stated in 1996: "I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather." After all, the law liberates, but it also implies illegality, lawsuits, liability assignment and sanctions. The antitrust and blockchain communities will gain from over-coming these biases. If we want antitrust and blockchain to collaborate on a long-term basis, we need to talk about the problems that their cooperation will encounter along the way. The challenge before us is intricate." On the one hand, it is a matter of getting legal minds to recognize that technology can help achieve objectives that the law cannot achieve on its own. There are three reasons for this. First, blockchain provides a technical approach to the subject. It serves as a framework for decentralizing the economy by default, while antitrust mostly applies ex post by correcting past behaviors." Second, antitrust agencies' detection rate remains low, meaning that illegal behavior often goes unpunished." And enforcement is costly, which makes it impossible to pursue all potentially illegal practices. This is particularly prob-lematic in a world where illegal practices can be implemented through coding that quietly and immediately affects billions of users. Also, the rule of law is (unfortunately) inapplicable in some places. This is the case when the state bypasses legal constraints,'" and when jurisdictions are mutually unfriendly and do not enforce foreign laws." For example, enforcement of U.S. court judgments abroad can prove especially difficult in light of divergent rules on jurisdiction, requirements for special service of process, reciprocity and some foreign countries' public policy concerns," including in Europe." Finally, antitrust law is complex and cannot be fully mastered by all companies — the compliance costs are high and many firms unwittingly infringe the law. Blockchains could therefore supplement antitrust by creating an architecture that leads to fewer anticompetitive practices. On the other hand, blockchain communities would gain from working with (not against) antitrust law enforcers. That is because antitrust would eliminate practices that artificially centralize blockchain ecosystems and that blockchain architecture cannot stop or prevent. I will analyze them in Part 2. Doing so would also provide legal certainty, thus fostering investments and benefiting all the actors involved in commercial activities that rely on blockchain. For these reasons, one should think of antitrust and blockchain as allies —not enemies — as they both seek the same objective, while presenting complementary strengths and defects. Doing so would lead policymakers to promote and implement a new "law + technology" approach that recognizes that the benefits of cooperation outweigh those of one-off confrontations. A game theorist would represent that approach as illustrated in Figure 5.1. That bigger picture should guide every one of our actions in the field, including how we deal with mutual aggressions. After all, no great player has ever won a game of Go without conceding a few territories. In this chapter, I first discussed decentralization in the context of antitrust law. I showed that antitrust law's objective has always been to free markets from economic coercion. In other words, it protects consumers by ensuring the decentralization of market players' decision making. The Sherman Act translates that objective, and so does the TFEU. Despite having a similar objective, I explained that blockchain and antitrust do not automatically benefit from one another — their cooperation must be willingly enacted. Mainly, there are situations in which the law cannot be (fully) enforced. That is true when technology (such as blockchain) prevents legal enforcement and when the rule of law is not actionable (because one country is disregarding it, or because two jurisdictions are unfriendly). In other situations, the law interferes with technology developments; it creates a different type of tension. That absence of mutual assistance between blockchain and the law would be problematic at two levels. First, it would be troublesome because blockchain could achieve decentralization in areas where the law does not apply. And second, by increasing the number of transactions executed, blockchain will simultaneously increase the number of anticompetitive practices that take place. Antitrust will thus be needed to eliminate these practices. This latter point — how blockchain may (be used to) violate antitrust — is the subject of Part 2 of this book. When entering it, let us keep in mind that the "big picture" (the mutually beneficial nature of the cooperation between antitrust and blockchain) must inform how we deal with the "small one" (areas of tension between them). Failure to do so would lead to a lose-lose situation.

#### Antitrust action against artificial centralization is key to collaborative relationship between antitrust agencies and blockchain communities. Necessary for long term economic stability

Schrepel 21 [Thibault, Assoc Prof of Law at VU Amsterdam Univ, Faculty Affiliate at Stanford Univ CodeX Center, blockchain expert appointed to the World Economic Forum, *Blockchain + Antitrust: The Decentralization Formula*, p.247-9, JCR]

1.2.1 Not this... Enforcement is the second pillar of a collaborative approach between law and tech, antitrust and blockchain. I realize that this may seem counterintuitive; enforcement is, by definition, confrontational. In reality, distinct types of enforcement can lead to varying degrees of confrontation: some harm the entire blockchain, while others target the sole perpetrators of illegal practices. One should avoid the former, as it would reduce blockchain's usefulness and thus deprive policymakers and regulators of an important ally. It is in the interests of both communities to encourage the latter. I concluded the first part of this book by underlining that making law and tech work toward the same objective implied bearing with some assaults by each on the other. This means that blockchain communities should not only tolerate antitrust sanctions, but also facilitate them, because they ultimately lead to further decentralization. It also means that antitrust agencies and courts should direct their enforcement activities in a specific way. Overall, they should seek to preserve blockchain. This will be challenging, as agencies generally conduct their enforcement activities one case after the other, without such a long-term objective. That being said, agencies could still achieve the overall goal of enabling blockchain technology to flourish while ensuring case-by-case enforcement. For that, agencies should avoid enforcement activities against practices that directly arise from the intrinsic characteristics of a blockchain. For example, public permissionless blockchains distribute information throughout the marketplace, including the number of transactions implemented by specific users, the fees being paid and so on. This transparency could lead to antitrust concerns, especially when it comes to tacit collusion.'" Nevertheless, because this essential feature makes markets more fluid and mitigates information asymmetry," enforcement activities should not be directed at it. The same goes for the opacity that blockchains create. As we have seen together, the identity of a blockchain's participants and the content of their transactions are protected by encryption. Yet one should not consider this a relevant element in European competition law for presuming the intention to collude (moral component), for systematically making cartelization on block-chain a restriction "by object" rather than "by effect," or for easing the burden of proof on antitrust agencies. Doing so would deter legal uses of blockchain. More generally, it is important to underline that all blockchain participants agree to the same set of rules. That should not be seen as an illegal agreement between them, even though it affects their economic behavior. Agreeing to the same rules is, in fact, necessary for blockchain's survival, as it creates consistency in the blockchain ledger in the absence of central coordination. It solves the Byzantine Generals Problem, according to which a central power is always needed to coordinate actions and maximize outcomes. That applies to forks, which should only rarely be seen as illegal (as I discussed in Chapter 8), because they create checks and balances within each blockchain. Let me reiterate that without consensus regarding the rules and their modification, the whole system would collapse, as the ledger integrity could not be maintained. All practices engaged by the blockchain nucleus to ensure survival, such as their forks and modifications of the core client, should thus be presumptively legal as far as antitrust enforcement is concerned. 1.2.2 ...but that! I recommend that antitrust agencies focus their enforcement activities on practices that affect the "real space", and on practices that defeat blockchain's purpose. As I discussed in Chapters 9 and I1, the first type of practice covers the use of blockchains to support firms' efforts to collude or monopolize markets. These practices have a strong and direct impact on consumers. Detecting this type of behavior will require proactive actions by antitrust agencies. If they engage in such actions, enforcement in the field will increase consumer welfare. The second category concerns practices that centralize blockchain eco-systems artificially. More specifically, agencies should target practices that centralize the infrastructure level of a blockchain. As I have explained, that level has a critical influence on the decentralization of other levels. Prohibiting artificial forms of centralization at that layer will free most of the ecosystem from coercive forms of power. In doing so, it will make blockchain a more potent ally to antitrust law. Furthermore, this type of enforcement will prove increasingly important over time. If blockchain adoption continues to increase, it could very well become a key infrastructure for the world economy. At that point in time, the artificial centralization of blockchain will become antitrust agencies' top enforcement priority. Overall, directing enforcement activities toward these two types of practices would free blockchain, and its economic ramifications, from the most restrictive practices without diminishing its usefulness or creating resentment within blockchain communities. Antitrust would thus become the ally of blockchain ecosystems and would start being perceived as such.

#### Antitrust oversight keeping blockchain open & decentralized is key to innovation

Massarotto 20 [Giovanna, Academic Fellow at the Center for Technology Innovation and Competition (CTIC) at UPenn, “Antitrust in the Blockchain Era,” *Notre Dame Journal on Emerging Technologies*, <https://ndlsjet.com/wp-content/uploads/2020/04/Antitrust-in-the-Blockchain-Era.pdf>, JCR]

Thus, someone might be led to question the future role of antitrust to tackle monopolizing conduct and regulate data. Although the main goal of antitrust law could be achieved through open and decentralized networks, such as public blockchains, antitrust enforcers still need to play a fundamental role as gatekeepers of the economic democracy in markets. As the Supreme Court recognized, the Sherman Act is the “Magna Carta of free enterprise”105 which needs to be enforced to be effective. The railroads and the Internet network created potential open platforms and infrastructures, which required an antitrust intervention to guarantee equal access to all market participants and prevent possible abusive practices.106 In order for open platforms to function, antitrust agencies are irreplaceable neutral bodies to oversee that no one engages in anticompetitive conduct to profit beyond that attainable in open and free markets. Standard Oil, 107 AT&T108 and more recently U.S. and EU Microsoft109 have shown that the temptation for companies that have the most to lose in a totally open market to engage in illegal anticompetitive behavior is often compelling.110 Antitrust agencies are responsible to ensure that there is a level playing field to compete in the evolution of existing technologies or the creation of new ones. Through the support of antitrust law, the largest companies can continue in the development of competitive technologies, creating alternative platforms or advancing the existing ones in open democratic (socially scalable) markets. As a football match needs both rules and referees, markets need rules and neutral bodies to oversee the compliance of those rules. Otherwise it is hard to tell who wins the competition or to even have a competition at all. Initially, markets based on the blockchain technology might not need a complex set of rules—an antitrust supervision and regulation might be sufficient. Greater forms of oversight might be desirable if such markets become increasingly high-traffic areas and a crucial component of our economic system.111 In a perfect world, self-regulation would be ideal.112 But as the financial crisis of 2008 revealed, specific forms of regulation are often necessary when antitrust alone is insufficient to regulate high-traffic industries.113 As one looks back on the Internet regulatory framework, it is true that the “Internet is the least regulated part of the telecommunications world today[,]”114 and it is also true that the fundamental compatibility rule is enforced.115 Although it is the least regulated, the Internet is still public in nature and governed by public rules enforced by public bodies.116 The following section explores some regulatory issues related to blockchain. Antitrust law originated in the United States as the first arm of government regulation117 on the booming oil market to limit the risks linked to the monopoly power of Standard Oil. Data represent the ‘new oil’ and instead of being traded in physical platforms (like the railroad) are being traded in online digital platforms based on the Internet. As a consequence, data have attracted even more and varied businesses, creating new, digital, online platforms. Such platforms based on the Internet network became increasingly high-traffic marketplaces and a crucial part of today’s economy, thereby requiring sophisticated regulations.118 Similar to the Internet through the Web, as above outlined, we might consider having a single universal blockchain that includes a variety of different markets. Blockchain markets built on a single universal blockchain infrastructure might become a fundamental component of our economy and require government intervention to regulate competition and possible legal issues. Markets require trust in order to attract business. The blockchain is not an exception to this fundamental economic principle. As learned from the past, self-regulation has often failed to maintain trust in markets from the Great Depression to the cryptocurrency crash of 2018. 119 Antitrust and effective forms of regulation are necessary to build—trust. 120 The blockchain technology is in its infancy and the creation of a universal public blockchain is merely an idea. At this moment, it might be difficult to elaborate specific forms of regulation for new markets that we cannot even envisage, but the Internet and the Web can certainly be used as a useful model of reference both to anticipate and to regulate a future single blockchain network. Similar to the Internet, government agencies might start theorizing rules to guarantee the compatibility in a public blockchain platform and prevent an uncontrolled centralization and private supervisory powers. Sir Tim Berners-Lee suggested the adoption of a Magna Carta or Bill of Rights for the Web to prevent Internet fragmentation into private networks and get everybody on the open and universal Web platform.121 Should we theorize a Magna Carta for the Blockchain to protect users’ rights related, for example, to their data? Perhaps, similar to the Web, we might start from setting some universal open standards to guaranty inter-operability of data122 and a socially scalable platform. The World Wide Web Consortium (W3C) set the open standards principles for the Web—open and free standards for a World Wide Blockchain might be defined in a similar fashion. The blockchain network, as well as the Internet platform, would certainly raise some specific legal and ethical issues, which cannot yet be envisaged. Thus, let us start from what we already know about the Web and the Internet regulations to anticipate and prevent some negative consequences that might also affect the creation of a single blockchain. Regulators are encouraged to envisage rules to protect ethical principles in blockchains123—for example, rules to prevent access by minors or people that might be interested in using a blockchain to commit crimes. This regulation may also cover the uncontrolled exchange or storage of sensitive information,124 or generally illegal and speculative activities. For example, the FBI expressed their concerns about the criminal exploitation of Bitcoins as the parties of bitcoin transactions are unknown.125 As with any tool, blockchain is not immune to abuses. Similar to the Internet, a public universal blockchain might need rules to guarantee non-discrimination among market players. A regulator may choose to adopt a net-neutrality regulation to prevent a paid prioritized blockchain in a single universal blockchain.126 In Europe and in part of the United States, net-neutrality or open internet regulation127 have allowed corporations of all sizes to act without the interference of the big Internet providers companies, creating a ‘neutral’ environment where every company can benefit from the same Internet speed and indiscriminately grow.128 Learning from the Internet, a paid prioritization blockchain network could generate a dual speed blockchain which would require one to pay for the benefits of a high speed blockchain or use a slower speed one for free.129 This duality might be prevented through the creation of developing technologies. The lightning network, for example, has the potential to make blockchain transactions faster and less expensive. It is based on a payment channel that is simple and fast in a decentralized manner. 130 Parties pay a fee only once and can transact back and forth without paying fees to miners. 131 With each transaction, parties sign a balance sheet confirming the new balance and when their transactions are completed, the parties pay to close the channel.132 The lightning network is a technology less developed than blockchain. However, it demonstrates along with the same blockchain ingenuity, how the creation and development of new technologies can provide more organic solutions which can be more ideal than regulation in certain circumstances. If we look back historically, regulation and guidelines are fundamental components in the prevention of forms of inequality, illegal activities, and the abuse of market power in free and open markets. Presently, there are basically no regulations to guide the growth and ensure an environment of trust among blockchain providers and users. Antitrust surveillance is the first step in preventing monopolies and forms of collusion among network participants in addition to overseeing markets until regulations are in place.133 Regulators and antitrust enforcers have a huge responsibility in the development of blockchain markets that we cannot fully envisage presently, although we know it very possibly might include the creation of a universal public blockchain. By its nature, the competitive market process looks for innovative and unanticipated solutions. As outlined above, antitrust, regulation, and innovation are not separate issues.134 The path of innovation largely depends on the action of both regulators and antitrust agencies, the results of which are unpredictable. The creation of a single universal blockchain where new markets run is feasible if such a blockchain can be kept free and open while subject to the supervision of regulatory bodies. History told us that individual market participants cannot be trusted to operate in the public interest in a total laissez-faire market. Markets rely on the trust of users. Market speculation, uncontrolled centralization and private supervisory powers can all promote a lack of trust rather than trust. In the context of antitrust, the likely shifting from closed-centralized platforms to open-decentralized networks, based on blockchain technology, is as compelling, critical, and revolutionary as the Internet has been over the past decades. Today antitrust agencies are concerned with a few powerful hi-tech companies which control most digital markets through their centralized platforms and databases.135 This economic scenario is likely to change soon, not by means of an antitrust intervention, but rather by decentralized networks based on blockchain technology. Antitrust enforcers then need to preserve both economic democracy and innovation to benefit consumers and the economy overall. Antitrust law should encourage competition to increase consumer welfare by improving, for example, social scalability and stimulate the growth of markets—no matter what the harm to a competitor, if the result of such conduct benefits consumers. Antitrust enforcers must endorse and oversee the process of the decentralization phenomena on behalf of free open markets and economic democracy. They will also be crucial in maintaining the delicate balance between over controlling the actions of large players and keeping them incentivized to lead the creation of new technologies.

### Adv – Digital Security

#### Scenario 1 – AI

#### High risk of AI targeting the financial sector now.

Cantos 19 [Michelle, Strategic Intelligence Analyst, former defense contractor and helped develop human-computer symbiosis programs for clients in the federal government, “Breaking the Bank: Weakness in Financial AI Applications,” 03/13/19, <https://www.fireeye.com/blog/threat-research/2019/03/breaking-the-bank-weakness-in-financial-ai-applications.html>, accessed 10/29/21, JCR]

Currently, threat actors possess limited access to the technology required to conduct disruptive operations against financial artificial intelligence (AI) systems and the risk of this targeting type remains low. However, there is a high risk of threat actors leveraging AI as part of disinformation campaigns to cause financial panic. As AI financial tools become more commonplace, adversarial methods to exploit these tools will also become more available, and operations targeting the financial industry will be increasingly likely in the future. Financial entities increasingly rely on AI-enabled applications to streamline daily operations, assess client risk, and detect insider trading. However, researchers have demonstrated how exploiting vulnerabilities in certain AI models can adversely affect the final performance of a system. Cyber threat actors can potentially leverage these weaknesses for financial disruption or economic gain in the future. Recent advances in adversarial AI research highlights the vulnerabilities in some AI techniques used by the financial sector. Data poisoning attacks, or manipulating a model's training data, can affect the end performance of a system by leading the model to generate inaccurate outputs or assessments. Manipulating the data used to train a model can be particularly powerful if it remains undetected, since "finished" models are often trusted implicitly. It should be noted that adversarial AI research demonstrates how anomalies in a model do not necessarily point users toward a wrong answer, but redirect users away from the more correct output. Additionally some cases of compromise require threat actors to obtain a copy of the model itself, through reverse engineering or compromising the machine learning pipeline of the target. The following are some vulnerabilities that assume this white-box knowledge of the models under attack: Classifiers are used for detection and identification, such as object recognition in driverless cars and malware detection in networks. Researchers have demonstrated how these classifiers can be susceptible to evasion, meaning objects can be misclassified due to inherent weaknesses in the mode (Figure 1). Researchers have highlighted how data poisoning can influence the outputs of AI recommendation systems. By changing reward pathways, adversaries can make a model suggest a suboptimal output such as reckless trades resulting in substantial financial losses. Additionally, groups have demonstrated a data-poisoning attack where attackers did not have control over how the training data was labeled. Natural language processing applications can analyze text and generate a basic understanding of the opinions expressed, also known as sentiment analysis. Recent papers highlight how users can input corrupt text training examples into sentiment analysis models to degrade the model's overall performance and guide it to misunderstand a body of text. Compromises can also occur when the threat actor has limited access and understanding of the model’s inner-workings. Researchers have demonstrated how open access to the prediction functions of a model as well as knowledge transfer can also facilitate compromise. AI can process large amounts of information very quickly, and financial institutions are adopting AI-enabled tools to make accurate risk assessments and streamline daily operations. As a result, threat actors likely view financial service AI tools as an attractive target to facilitate economic gain or financial instability (Figure 2). Branding and reputation are variables that help analysts plan future trade activity and examine potential risks associated with a business. News and online discussions offer a wealth of resources to examine public sentiment. AI techniques, such as natural language processing, can help analysts quickly identify public discussions referencing a business and examine the sentiment of these conversations to inform trades or help assess the risks associated with a firm. Threat actors can potentially insert fraudulent data that could generate erroneous analyses regarding a publicly traded firm. For example, threat actors could distribute false negative information about a company that could have adverse effects on a business' future trade activity or lead to a damaging risk assessment. Manipulating the data used to train a model can be particularly powerful if it remains undetected, since "finished" models are often trusted implicitly. FireEye assess with high confidence that there is a high risk of threat actors spreading false information that triggers AI enabled trading and causes financial panic. Additionally, threat actors can leverage AI techniques to generate manipulated multimedia or "deep fakes" to facilitate such disruption. False information can have considerable market-wide effects. Malicious actors have a history of distributing false information to facilitate financial instability. For example, in April 2013, the Syrian Electronic Army (SEA) compromised the Associated Press (AP) Twitter account and announced that the White House was attacked and President Obama sustained injuries. After the false information was posted, stock prices plummeted. Malicious actors distributed false messaging that triggered bank runs in Bulgaria and Kazakhstan in 2014. In two separate incidents, criminals sent emails, text messages, and social media posts suggesting bank deposits were not secure, causing customers to withdraw their savings en masse. Threat actors can use AI to create manipulated multimedia videos or "deep fakes" to spread false information about a firm or market-moving event. Threat actors can also use AI applications to replicate the voice of a company's leadership to conduct fraudulent trades for financial gain. We have observed one example where a manipulated video likely impacted the outcome of a political campaign. Several financial institutions are employing AI applications to select stocks for investment funds, or in the case of AI-based hedge funds, automatically conduct trades to maximize profits. Financial institutions can also leverage AI applications to help customize a client's trade portfolio. AI applications can analyze a client's previous trade activity and propose future trades analogous to those already found in a client's portfolio. Actors could influence recommendation systems to redirect a hedge fund toward irreversible bad trades, causing the company to lose money (e.g., flooding the market with trades that can confuse the recommendation system and cause the system to start trading in a way that damages the company). Moreover, many of the automated trading tools used by hedge funds operate without human supervision and conduct trade activity that directly affects the market. This lack of oversight could leave future automated applications more vulnerable to exploitation as there is no human in the loop to detect anomalous threat activity. We assess with moderate confidence that manipulating trade recommendation systems poses a moderate risk to AI-based portfolio managers. The diminished human involvement with trade recommendation systems coupled with the irreversibility of trade activity suggest that adverse recommendations could quickly escalate to a large-scale impact. Additionally, operators can influence recommendation systems without access to sophisticated AI technologies; instead, using knowledge of the market and mass trades to degrade the application's performance. We have previously observed malicious actors targeting trading platforms and exchanges, as well as compromising bank networks to conduct manipulated trades. Both state-sponsored and financially motivated actors have incentives to exploit automated trading tools to generate profit, destabilize markets, or weaken foreign currencies. Russian hackers reportedly leveraged Corkow malware to place $500M worth of trades at non-market rates, briefly destabilizing the dollar-ruble exchange rate in February 2015. Future criminal operations can leverage vulnerabilities in automatic training algorithms to disrupt the market with a flood of automated bad trades. Financial institutions and regulators are leveraging AI-enabled anomaly detection tools to ensure that traders are not engaging in illegal activity. These tools can examine trade activity, internal communications, and other employee data to ensure that workers are not capitalizing on advanced knowledge of the market to engage in fraud, theft, insider trading, or embezzlement. Sophisticated threat actors can exploit the weaknesses in classifiers to alter an AI-based detection tool and mischaracterize anomalous illegal activity as normal activity. Manipulating the model helps insider threats conduct criminal activity without fear of discovery. Currently threat actors possess limited access to the kind of technology required to evade these fraud detection systems, and therefore with high confidence we assess that the threat of this activity type remains low. However, as AI financial tools become more commonplace, adversarial methods to exploit these tools will also become more available and insider threats leveraging AI to evade detection will likely increase in the future.

#### Financial panic causes World War III – monetary measures that protected us after 2008 no longer work

Sundaram & Popov 19 [Jomo, a former economics professor, was United Nations Assistant Secretary-General for Economic Development, and received the Wassily Leontief Prize for Advancing the Frontiers of Economic Thought, Vladimir, Research Director at the Dialogue of Civilizations Research Institute in Berlin, “Economic Crisis Can Trigger World War,” 02/12/19, <http://www.ipsnews.net/2019/02/economic-crisis-can-trigger-world-war/>, JCR]

Economic recovery efforts since the 2008-2009 global financial crisis have mainly depended on unconventional monetary policies. As fears rise of yet another international financial crisis, there are growing concerns about the increased possibility of large-scale military conflict. More worryingly, in the current political landscape, prolonged economic crisis, combined with rising economic inequality, chauvinistic ethno-populism as well as aggressive jingoist rhetoric, including threats, could easily spin out of control and ‘morph’ into military conflict, and worse, world war. The 2008-2009 global financial crisis almost ‘bankrupted’ governments and caused systemic collapse. Policymakers managed to pull the world economy from the brink, but soon switched from counter-cyclical fiscal efforts to unconventional monetary measures, primarily ‘quantitative easing’ and very low, if not negative real interest rates. But while these monetary interventions averted realization of the worst fears at the time by turning the US economy around, they did little to address underlying economic weaknesses, largely due to the ascendance of finance in recent decades at the expense of the real economy. Since then, despite promising to do so, policymakers have not seriously pursued, let alone achieved, such needed reforms. Instead, ostensible structural reformers have taken advantage of the crisis to pursue largely irrelevant efforts to further ‘casualize’ labour markets. This lack of structural reform has meant that the unprecedented liquidity central banks injected into economies has not been well allocated to stimulate resurgence of the real economy. Instead, easy credit raised asset prices to levels even higher than those prevailing before 2008. US house prices are now 8% more than at the peak of the property bubble in 2006, while its price-to-earnings ratio in late 2018 was even higher than in 2008 and in 1929, when the Wall Street Crash precipitated the Great Depression. As monetary tightening checks asset price bubbles, another economic crisis — possibly more severe than the last, as the economy has become less responsive to such blunt monetary interventions — is considered likely. A decade of such unconventional monetary policies, with very low interest rates, has greatly depleted their ability to revive the economy. The implications beyond the economy of such developments and policy responses are already being seen. Prolonged economic distress has worsened public antipathy towards the culturally alien — not only abroad, but also within. Thus, another round of economic stress is deemed likely to foment unrest, conflict, even war as it is blamed on the foreign. International trade shrank by two-thirds within half a decade after the US passed the Smoot-Hawley Tariff Act in 1930, at the start of the Great Depression, ostensibly to protect American workers and farmers from foreign competition!

#### Decentralized blockchain prevents AI monopolization and drives AI innovation.

Karger et al. 21(Erik, Research Assistant and Ph.D. Student, Marvin Jagals, Research Assistant and Ph.D. Student, Frederik Ahlemann, chair for Information Systems and Strategic IT Management; all are at the University of Duisburg-Essen, Germany, 2021, Blockchain for AI Data – State of the Art and Open Research, Forthcoming Forty-Second International Conference on Information Systems, <https://www.researchgate.net/profile/Erik-Karger/publication/355174945_Blockchain_for_AI_Data_-_State_of_the_Art_and_Open_Research/links/61697bc8039ba2684441b860/Blockchain-for-AI-Data-State-of-the-Art-and-Open-Research.pdf>) MAM

Artificial intelligence (AI) and blockchain are currently trending terms that become increasingly present in people's everyday lives. Blockchain has been adopted for various other use cases since its first appearance as the Bitcoin’s underlying technology in 2008 (Nakamoto 2008). Blockchain allows the tamper-proof transfer of data or other assets without the involvement of an intermediate third party. As a new computational infrastructure**, blockchain has the potential to change many business, governance, and societal processes** (World Economic Forum 2018). AI is another technology that becomes increasingly influential for both research and practice. Self-learning algorithms are already part of many people’s everyday routines. AI drives many **aspects of modern society**. These aspects range from web searches to content filtering on social networks, to e-commerce website recommendations. This technology is also increasingly present in consumer products, such as cameras and smartphones (LeCun et al. 2015).

Next to the increased amount of available computing power that improved tremendously over the last years, data are another crucial driver behind the current growth and rise of AI systems. The reliability, security, trustworthiness, and credibility of the data sources or platforms from which data are collected and obtained are very relevant (Salah et al. 2019). If the data quality is poor, the quality of the AI models trained with these data suffers as well. Especially smaller companies may find it difficult to obtain sufficient data for training models. In contrast, large companies, such as Facebook and Google, usually find the acquisition or use of a large amount of data easy to implement. This centralization of data causes concerns about the possible **AI monopolization** by a few big companies (Dinh und Thai 2018). This could also negatively affect balanced competition between AI researchers and companies, eventually leading to a **slow down** in the development of AI (Dinh und Thai 2018). Furthermore, centralized data storage via clouds, data centers, and clusters might be obstructive for the development of highly secure and data protection-relevant AI applications. Particularly, centralized data storage is very vulnerable in terms of data protection and security when involving personal and sensitive data on users, locations, activities, or health records (Salah et al. 2019).

Given by its nature, the blockchain can tackle data quality and storage issues. For certain parties, blockchains natively already deliver **quality assurances** regarding the data stored on them: The employment of hashes to connect blocks prevents interfering with data (Cappiello et al. 2019). **Besides, blockchain's main benefit is decentralized trust.** The blockchain establishes a distributed chained data structure by using technologies such as smart contracts. These features enable blockchains to serve as a technical foundation for cryptocurrencies and as a system for data quality improvement and assurance (Wang et al. 2018; An et al. 2020). The blockchain has significant advantages for end users, as it can provide a secure and trusted shared ledger of data and transactions (Salah et al. 2019). The blockchain’s abilities might, therefore, **increase data creators' and owners’ motivation to share their data**. The users of AI systems can benefit directly from these data, as they **can be used as learning data** for the development of AI systems. This can help companies **generate more reliable AI** system results.

#### This is essential to secure AI from devastating attacks

Platz 20 [Brian, member of Forbes Technology Council, Co-CEO and Co-Chairman of Fluree, PBC, an open-source platform for data ecosystems, “Why We Shouldn't Have AI Without Blockchain,” 07/23/20, <https://www.forbes.com/sites/forbestechcouncil/2020/07/23/why-we-shouldnt-have-ai-without-blockchain/?sh=be795394c4eb>, accessed 10/29/21, JCR]

As AI continues to permeate the online world, it opens up a Pandora's box of unintended consequences. That’s because unleashing AI on the current version of the internet and letting it feed on potentially inauthentic data can lead to devastation. Our increasing reliance on machine learning opens the floodgates for hackers and other bad actors to manipulate data and exploit algorithms in dangerous ways. From entering counterfeit products into the supply chain to changing software source code to meddling with voter registration databases, data tampering is already being used as a powerful weapon. Introducing AI into the equation only amplifies the danger. AI is powerful enough to drive autonomous machines, and hackers are powerful enough to get past any firewall. Damage can be done in just a few seconds, and it could be months before anyone notices that something is off. To confidently support the expansion of AI as we move toward the next phase of the internet, the internet itself must adapt — with blockchain serving as the root of the change. The internet is already untrustworthy. Spurred on by game-changing events like the uncovering of AI-generated fake news and deep fake photos, internet users are being forced to rethink their faith in the internet as solely a force for good. Facebook’s Cambridge Analytica scandal and Equifax’s data breach exposed another one of the internet’s major problems: database vulnerability. Here, too, the public is beginning to turn against the internet. For evidence, look no further than the EU's General Data Protection Regulation (GDPR) or the California Consumer Privacy Act (CCPA) — two pieces of legislation both meant to place extreme limitations on the collection and storage of personal data. The underlying problem is that database security never caught up to the raw computer power that allows companies to collect and store more consumer data than ever thought possible. Instead of rethinking databases from the ground up to adjust to this new reality, the growing trend has been to introduce point fixes, further exacerbating the mess of APIs that have bogged down "modern" internet architecture. Yet it is the ability to gather and store data that drives the modern economy. Data is what enables companies to bring about the next generation of services custom-tailored to our preferences and needs. Web 3.0 ups the ante — and it needs a defense mechanism. It is possible to salvage the best of the internet while starting to solve some of its most pressing concerns. That’s because the internet is quickly moving into a new phase known as the Semantic Web, or Web 3.0. Web 3.0 aims to empower machines that are connected to the internet to communicate directly with each other — this is known as machine-to-machine (M2M) communication. Additionally, Web 3.0 will rely on AI to learn more about a user’s preferences from their past interactions, providing a richer and more personalized user experience. Search engines, for example, will be able to provide more accurate and intelligent results based on an individual’s habits and previous activities. On first blush, this may sound like an entrenchment of the problem: If we’re already concerned about our data, why move to a Web 3.0 model that depends on personal data even more? The answer is simple: It’s true that Web 3.0 will be data-driven, but it will no longer rely on centralized and insecure databases. Additionally, Web 3.0 has an essential tool in its toolkit that fundamentally changes the security profile of user data: blockchain. Blockchain can mitigate AI’s risks as a key part of Web 3.0. Blockchain provides the necessary technology to make sure that AI architects can understand and trace the path of machine learning, allowing them to be confident in the integrity of the data that powers AI. That’s because blockchain provides a tamper-proof public record, ensuring each individual piece of data’s end-to-end traceability. Using this digital audit trail, AI decisions and results become easily explainable. That explainability will become increasingly important as machine learning becomes more pervasive in online operations. With more deployments, there will be more adversarial attacks. Strong data integrity along with a provable history that can track the chain of updates over time will be absolutely critical to fighting against foul play. Perhaps one of the best things about blockchain protection is that a tamper-proof record not only helps identify suspicious cases of “data poisoning” in the past, but it also helps prevent them from happening in the future. On the blockchain, AI has access to data that is not only tamper-resistant and secure by design, but comes with a mathematical record that proves it has not been tampered with. This enables more open, decentralized, even permissionless environments, democratizing AI for all. The next generation of the AI-powered internet requires the next generation of defense mechanisms, and blockchain is the perfect match.

#### Scenario 2 – Internet of Things

#### Blockchain will revolutionize IoT security, but artificial centralization wrecks the benefits

Schrepel 21 [Thibault, Assoc Prof of Law at VU Amsterdam Univ, Faculty Affiliate at Stanford Univ CodeX Center, blockchain expert appointed to the World Economic Forum, *Blockchain + Antitrust: The Decentralization Formula*, p.269-70, JCR]

1.2.1 Blockchain and the Internet of Things. Technologies tend to accelerate each other," and for that reason, it is useful to analyze how they interact. Blockchain has direct implications for quantum computing, 3D printing, biotech and nanotechnologies, among others." In the subsequent developments, I will limit myself to discussing the loT and Al, as blockchains may serve as an infrastructure for these two technologies, there-fore shaping their use and developments. To put it simply, the loT is all about connecting the analog world to the digital one. Physical products are equipped with sensors or connectors that can send information or be controlled by online applications. There are over 20 billion loT devices in circulation today and this number will likely triple by 2025." Each of these devices generates information that is then turned into data, thus accelerating the already exponential production of data. In fact, the world is expected to produce six times as much data in 2025 as in 2019." Blockchains could boost loT. First, blockchains could be used as the infra-structure layer on top of which loT ecosystems are built. Second, blockchains, combined with algorithms, could help monitoring devices and spot anomalies. Should, for example, a product malfunction, blockchain ledgers could help identifying why—without permitting the constructor to tamper it. Third, smart contracts could allow loT devices to interact with each other on specified terms and ensure that they stick to them. Most of all, blockchain technology provides loT systems with security. By eliminating a single point of failure, blockchains ensure continuity even when a server is down. Not so surprisingly, 86 percent of blockchain adopters are combining the technology with loT solutions and this number will likely grow in the fidure.35 If blockchain technology does indeed become the infrastructure upon which most loT systems are built, it will be necessary to ensure that the technology's internal layers are free from economic coercion. If not, artificial forms of centralization will impact loT markets — for example, notably through anticompetitive practices that affect the validation of transactions or that raise prices. We can find a direct relationship between these external applications and blockchain's fourth and fifth layers.

#### Attacks on critical infrastructure on the rise. IoT attack would ripple across sectors.

Horwitz 21 [Lauren, senior content director at IoT Today, winner of the Silver Award from the American Society of Business Publican Editors, “IIoT Software Vulnerabilities Fuel Critical Infrastructure Attacks—Again,” 08/16/21, <https://www.iotworldtoday.com/2021/08/16/iiot-software-vulnerabilities-fuel-critical-infrastructure-attacks-again/>, accessed 10/21/21, JCR]

In August 2021, Forescout Research Labs and JFrog Security Research identified 14 vulnerabilities affecting the NicheStack TCP/IP stack, which the organizations dubbed INFRA:HALT. TCP/IP stacks enable vendors to implement basic network communications for IP-connected systems, including IT, operational technology (OT) and Industrial Internet of Things (IoT) devices. Indeed, NicheStack is present in myriad OT devices that are commonly used in several critical infrastructure sectors, such as manufacturing plants, water treatment, power generation and more. The new vulnerabilities enable remote code execution, denial of service, information leak, TCP spoofing, or DNS cache poisoning. Critical Infrastructure Attacks Reveal ICS Weak Spots The vulnerabilities discovered illuminate the risk to critical infrastructure systems should they be compromised by malicious actors. These systems are aging and vulnerable, said experts. “It is … an unfortunate example of the huge vulnerability of an aging infrastructure that has been connected, directly or indirectly, to the Internet,” said Curtis Simpson, CISO at Armis in a recent article on increasing attacks on critical infrastructure. Forrester Research’s Brian Kim said that critical infrastructure organizations need to focus on identifying vulnerable OT devices within their estate, then focus on building a zero-trust strategy, using least privilege and network segmentation to prevent malicious actors from gaining access to critical systems. “One of the best ways we can reduce the impact of a breach is a zero-trust strategy by limiting the communications of these ICS [industrial control systems],” Kime said.. “We can create an allow list that only allows communications with control systems that run a process–allowing least privilege for network connections … is a best practice. And ideally, we should have a barrier between IT and OT and segment each facility to have its own network. JFrog and Forescout research teams will present a webinar on August 19 to provide additional information about how these vulnerabilities were identified and how they can be mitigated. Critical Infrastructure Attacks on the Rise. Last year, there were some 65,000 ransomware attacks, according to the Recorded Future, a Boston-based cybersecurity firm. Cyberattacks on critical infrastructure present certain benefits from the attackers’ perspective, even if the objective of attackers is not a payout. First, malicious attackers can gain access to these vulnerable devices with ease, as OT devices may be older and lack the security protocols of newer technologies. Second, once critical operations are affected, it can grind operations to a halt. Affected organizations have great incentive to pay ransomware demands just r resume operations. “The nature of these vulnerabilities could lead to heightened risk and expose national critical infrastructure at a time when the industry is seeing an increase in OT attacks against global utilities, oil and gas pipeline operators as well as healthcare and the supply chain,” wrote Forescout Research Labs in an announcement regarding the vulnerabilities. Third, access to OT devices can always provide entrée to other systems within organizations. “Once accessed, the stack becomes a vulnerable entry point to spread infectious malware across IT networks,” the researchers continued. Kime noted that attacks like the recent one on Colonial Pipeline revealed that critical infrastructure systems are interconnected, creating the opportunity for ripple effects within these systems, then across the chain to IT systems as well. “An event like Colonial Pipeline has revealed that these are more systems of systems rather than independent, isolated sectors that operate within their own little world,” Kime said. Ultimately, Kime noted, critical infrastructure operators need to shift their perspective to enable more thoroughgoing protection of the critical infrastructure they manage. “There should be a strong focus among critical infrastructure on not just security but resilience,” he said.

#### Operational technology attacks are a unique terminal risk – economic and societal collapse.

Murphy 19 (Hannah Murphy, Tech Correspondent at Financial Times, 10-13-2019, Companies urged to bolster infrastructure cyber defences, Financial Times, <https://www.ft.com/content/797e1e5e-ca53-11e9-af46-b09e8bfe60c0>) MAM

Hackers have traditionally focused their attention on computer software, resulting in a mushrooming of cyber security companies that promise protections for office-based clients. But there is another, less well-known hacking threat: cyber attacks on big corporate operations, such as **manufacturing facilities or power plants, as well as other vital infrastructure.** Such attacks are becoming more commonplace, fuelling concerns that companies should ramp up their efforts to guard against them. This is no small challenge. For companies with operational technology — the computerised systems used to control industrial operations — the risks of a breach are plentiful; disruptions to machinery processes could dent revenues or cause an accident. For those involved in “critical infrastructure” — the **dams, energy, oil and gas facilities** required for society to function smoothly — the risks are more dramatic and may attract nation state hackers, not just those seeking financial gain. “Our economy will disappear, society will collapse — and these things are possible,” says Sujeet Shenoi, professor of computer science at the University of Tulsa, who has been involved in multiple government-led critical infrastructure projects. “**There’s never been a war** in human history **where** the **critical infrastructure hasn’t been damaged**.” He notes that some 80 per cent of critical infrastructure in the US is privately run. “These companies are not prepared for [a cyber attack]. You need extremely well trained people,” he says, noting the many former government experts are moving into the sector. Historically, critical infrastructure and operational technology were kept separate from the computer networks typically used in corporate headquarters. However, those worlds are now converging as outdated analogue systems have become increasingly digitised. “Systems that have been developed over 30 or 40 years are having the internet introduced to them,” says Casey Ellis, founder and chief technology officer at Bugcrowd, a cyber security group. But **retrofitting systems** that were never intended to be on the internet **creates new opportunities for hackers**, he says. “The attack surface is expanding rapidly.” As with normal IT systems, ransomware and malware can be used to infect operational technology and critical infrastructure. The most high-profile worm was the 2010 Stuxnet malware, which targeted Iran’s nuclear facilities. Operations at the food company Mondelez and drugmaker Merck were disrupted by the ransomware dubbed NotPetya in 2017. Ukraine has suffered a spate of attacks on its power grid system recently, and earlier this year, Norwegian aluminium maker Norsk Hydro had to freeze operations earlier after it fell victim to ransomware. While the marketplace for cyber security companies offering support to such groups is smaller than the traditional IT security space, experts caution that companies should take action. Moves might include assessing company **systems to ensure staff know what devices are connected to the network,** testing and monitoring those systems, and devising a plan for worst-case scenarios. Above all, companies should isolate the most critical systems to ensure they can keep them operating no matter what, says Pedro Abreu, chief product and strategy officer at online security company Forescout, who dubs the process “containing the blast area”. “If a WannaCry [attack] happens, I want to [be able to] shut down that facility or country” while the rest of the network remains running, he says. Various sectors are equipped differently, experts say. Where deep-pocketed energy, and oil and gas groups have been able to pour investment into bolstering their protections, others, such as the water sector, are thought to be lagging. To their advantage, Michael Fabian, principal consultant at Synopsys, notes that operational technology systems are “very restrictive”, meaning that “some expertise is needed to hack [them]”. By comparison, “**people providing consumer services have a massive attack surface**,” he says, citing the likes of Citibank, Target or Amazon. Nevertheless, operational technology systems have their own nuances. First, testing them for vulnerabilities can be difficult because the systems are too sensitive or essential to pause. “There are things that are ultra critical that we can’t put at risk by testing them, but we are doing just that — putting them at risk — by not testing them,” says Charles Henderson, global head of IBM’s hacking unit X-Force Red. This means cyber security companies may have to test for vulnerabilities against a less reliable reproduction of an actual system. And if a problem is uncovered, it is harder to fix. “The life cycles of those systems in the field is extraordinarily long,” says Eric Cornelius, chief product officer at BlackBerry Cylance, a cyber security group. Moreover, even if cyber security companies offer solutions, it can be many years before a system can be updated. For example, many companies would opt to rebuild an offshore gas plant once it has finally stopped running, rather than upgrade at great cost, Mr Cornelius says.

#### Goes nuclear

Vladimir Orlov 20, Founder & Director of the PIR Center, President of the Trialogue Club International, Head of the Center for Global Trends and International Organizations at the Diplomatic Academy, Ministry of Foreign Affairs of the Russian Federation, Co-Founder and Academic Supervisor of the International Dual Degree MA Program in Nonproliferation and Global Security Studies, MGIMO University, Professor at MGIMO University, author (or coauthor) of more than a dozen books and monographs and more than three hundred research papers, articles, and essays, publishes his views in Russian and foreign periodicals, “‘No Holds Barred’ and the New Vulnerability: Are We in for a Re-Run of the Cuban Missile Crisis in Cyberspace?,” SSRN Scholarly Paper, ID 3538078, Social Science Research Network, 02/14/2020, papers.ssrn.com, doi:10.2139/ssrn.3538078

Not hundred per cent of the dialogue has been frozen, fortunately. Certain informal, mostly offthe-record, meetings of US and Russian experts on cyber agenda continue taking place, both through Track 2 and Track 1.5. One of the most intellectually stimulating meetings, with frank exchanges, took place in Vienna in December 2018. The report produced after the meeting stressed “the significant risk […] that cyber-attacks could conceivably lead to a military escalation that may further trigger a nuclear weapons exchange, a fact that became more explicit with the adoption of the current Nuclear Posture Review. This issue gets complicated given that third parties may have the capabilities to invoke a cyber conflict between Russia and the United States. Whether a country or a non-state actor, they could put the two countries on the verge of an armed conflict by attacking critical infrastructure of either of them and making it look as if the aggressor were the other one”[22]. However, one should have no illusion: such informal meetings may be fully fruitful only when their reports and policy recommendations are utilized by the governments. And for that, a warmer climate in bilateral relations is a must. So far, we see exactly the opposite: mercury falling to freezing levels.

Risk of cyber clashes growing into a chaotic global cyber war has been emphasized by the UN Secretary-General Antonio Guterres in his Agenda for Disarmament: “Malicious acts in cyberspace are contributing to diminishing trust among States… States should implement the recommendations elaborated under the auspices of the General Assembly, which aim at building international confidence and greater responsibility in the use of cyberspace.[23]” However, as the members of the US-Russian Track 1.5 working group on strategic stability recently concluded, “without a constructive dialogue on cyber issues between the United States and Russia, the world would most likely fail to agree on any norms of responsible behavior of states in cyber space”[24].

Do we really have to survive a cyber equivalent of the Cuban Missile Crisis to realize the importance of achieving some kind of agreement on cyber issues, and on the broader agenda of international information security?[25] Or is that kind of talk plain old alarmism?

I don’t want to sound a fatalist, but I am even less keen on sounding like an ostrich that’s buried its head in the sand. We cannot ignore the obvious: whether the world’s most powerful actors like it or not, the world is sliding to another major crisis like the one in 1962. The cyber war is already raging. There are no rules of engagement in that war. The uncertainty is high. The spiral of tension is getting out of control. The cyber arms race is gaining momentum. And there are no guarantees that the next crisis will be controllable, or that it will result in a catharsis as far as international information security regulation is concerned. There’s no telling what will happen once the cyber genie is out of the bottle.

#### Cooperation between blockchain and antitrust enables innovation via legal comfort zones – prevents fears of regulatory capture.

Schrepel 22 (Thibault, Assoc Prof of Law at VU Amsterdam Univ, Faculty Affiliate at Stanford Univ CodeX Center, blockchain expert appointed to the World Economic Forum, 1-17-2022, Unlocking the Potential Between Blockchain and Antitrust, <https://www.theregreview.org/2022/01/17/schrepel-potential-between-blockchain-antitrust/>) MAM

Law and technology overlap in many ways, but scholars and regulators tend to focus on incompatibilities between the two. I propose that they also explore synergies between law and tech, and address frictions in a way that preserves them. This exploration should begin with blockchain and antitrust. In recent months, a body of blockchain antitrust cases has emerged. Looking at the cases in isolation could give the impression that the interaction between blockchain technologies and antitrust laws is only a point of friction. In Gallagher v. Bitcointalk.org, a Bitcoin enthusiast filed a claim against the Bitcoin Foundation and the forum owners for excluding him from the website. He argued that the defendants conspired against him to prevent new competition in the space, therefore violating Section 1 of the Sherman Act. In another case, United American Corporation v. Bitmain, the plaintiff argued that various firms—including those of prominent Bitcoin investor Roger Ver—schemed to hijack the Bitcoin Cash network, here again in violation of Section 1 of the Sherman Act. More recently, in In re Tether and Bitfinex Crypto Asset Litigation, plaintiffs argue that Tether and Bitfinex have coordinated to manipulate the price of Bitcoin. They seek $1.4 trillion in compensation. All these cases are directed against the blockchain ecosystem—for good or bad reasons. They provide only a partial view of the relationship between blockchain and antitrust. As I argue in a new book, Blockchain + Antitrust, regulators should approach blockchain and antitrust **from a cooperative angle**. Both blockchain and antitrust seek to decentralize economic opportunities despite frictions that can arise. In fact, not only do blockchain and antitrust have the same focus, but they also complement one another and create synergies in a “1 + 1 = 3” fashion. In the field of antitrust, if big tech companies abuse their dominant positions in the advertising market against specific blockchain, blockchain participants could enforce the rules against monopolization and claim for damages. They could also enforce anti-cartel rules, should on-chain or off-chain agents coordinate their behavior against the interest of decentralized communities. Code alone cannot provide a complete solution, and the law can overcome many of its shortcomings. Policymakers and regulators could use blockchain to supplement antitrust rules where such rules prove ineffective or unenforceable. Empirical works show that agencies detect few infringements to antitrust laws or cannot enforce the laws when jurisdictions are mutually unfriendly. Blockchain removes intermediaries with the power of command and control, which de facto eliminates abuses of that power. Furthermore, blockchain aligns value creation with value capture. For example, through NFTs, creators can capture the economic value of what they create. This alignment works in favor of antitrust enforcers. And agencies could also use blockchain to improve their merger control processes and, eventually, decentralize antitrust enforcement. Law alone cannot provide a complete solution, and code can help achieve the objectives set by the legal rules and standards. Despite being two complementary parts of the same equation, the cooperation between blockchain and antitrust requires action. If not, frictions between the two will transform into retaliation strategies that reduce the common good. Cooperation requires a proactive approach followed by legal and tech communities. On the side of public institutions, cooperation requires three actions. First, regulators should direct enforcement activities toward the practices that artificially recentralize blockchains. Including punishment for illegal behaviors implemented outside the chain to protect blockchain participants. Second, when imposing remedies, courts and regulators should preserve blockchain decentralization. The same goes for the design of new regulations. If regulators force blockchain centralization for the convenience of applying the law, they will reduce its differentiation from centralization systems to the point where blockchain’s chances of survival will become too thin. Finally, regulators should create legal comfort zones for blockchain innovation. They should also be concerned about regulatory capture and create a task force to prevent and document it. On the side of blockchain communities, cooperation requires enabling easier legal enforcement by implementing new technical features where necessary. These features could be voting mechanisms to decide on impacting immutability, generalize modifiers, enums, and chameleon hash, or bypass immutability by pruning blockchains. Such features could also take the form of templates and legal factories. There is a difficult balance between enforcement capacity and decentralization, but not an impossible one. The stakes are high. Antitrust is at the very center of most discussions about big tech companies. It will soon be equally prevalent in blockchain ecosystems. We need to foster cooperation between law and technology, and eventually extend the “law + technology” movement beyond antitrust.

#### States fail – biases, lack of clarity to businesses, state enforcement interference.

Jacob P. Grosso 21. J.D. Candidate. “The Preemption Of Collective State Antitrust Enforcement In Telecommunications” University of Richmond School of Law. 02-11-21. https://lawreview.richmond.edu/files/2021/04/5-Grosso-552.pdf

Preemption would result in cognizable benefits to the regulatory and business spheres. These benefits would include **clear guidance**, **increased enforcement efficiencies**, and the ability to pursue nonenforcement agendas and broader policy goals.236 Businesses would receive clear guidance on the legality of their business choices. State antitrust enforcers would redeploy costs to state-specific issues. Federal enforcers would be able to effectively pursue broader policy goals. Consolidated enforcement and regulatory schemes would provide clarity to businesses through more uniform regulations and decreased litigation concerns. This consolidation, in turn, would reduce costs for the government and the competitors while encouraging competition and unnecessary compliance costs.237 Clear regulations serving a common goal, without the inherent biases of individual state interests, can provide clarity to businesses and preserve the balancing of consumer welfare with the aggregate social welfare. Individual states make decisions based on their individual needs, as seen in the T-Mobile-Sprint merger.238 When federal law conflicts with state law, federal law controls.239 Despite this standard, multistate task forces continue to come forward as the interpreters of federal law.240 This approach poses problems because of the inherent state biases that underlie the enforcement actions. **Preemption could decrease the effects of individual state biases on the guidance given to competitors**. Antitrust analysis considers geographic differences in determining the concentration of a market, meaning a one-size-fits-all approach does not work for aggregating individual state markets.241 This restructuring would reduce the effects of an individual state’s interests on collective action.242 While any individual state may be best served by one plan, the economy as a whole might suffer for that decision.243 “Divergent approaches to the exercise of enforcement discretion are not just possible, they are likely.”244 States likely face pressure from several groups that can influence their enforcement decisions, as well as the selfish motivation to protect their consumers regardless of the cost to national welfare.245 **Uniform, clear guidance at the federal level**, **without state interference, will reduce opportunities for the individual motivations of states to negatively impact a clear enforcement scheme**. Adding states as parties to a telecommunications antitrust lawsuit complicates the suit by increasing the number of parties that must agree to a settlement.246 The effects of the preemption and resulting enforcement system will create efficiencies for federal and state enforcers, as well as for businesses. For telecommunications antitrust enforcement actions, this will limit costs to the federal agencies, prevent the duplication of effort (in reviewing transactions), and eliminate the costs of coordination that NAAG multistate enforcement teams face.247 Extending even beyond telecommunications, this results in a net positive for the antitrust sections of state attorneys general offices to redeploy resources to monitor and combat anticompetitive behavior in the state-specific areas that these sections were designed to handle.248

#### Progressive decentralization causes venture capital follow-on – specified plans spur investor confidence.

Miller 20 [Evan, Senior Associate, Vinson & Elkins LLP, “A tale of two regulators: antitrust implications of progressive decentralization in blockchain platforms,” *Washington & Lee Law Review* 77, <https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1141&context=wlulr-online>] MAM

B. Progressive Decentralization Requires Trust That Platform Sponsors Will Actually Decentralize

Decentralization is the linchpin of the procompetitive potential for blockchain-based platforms, as envisioned by competition regulators. Indeed, Nick Grossman captured the sentiment of many competition regulators when he explained that people are worried about sponsor-led platforms like app stores where they could be “cut off,” which is why his **venture capital** firm is “**so excited about the crypto and blockchain space because** that is one area where the platform is an **open, unowned, uncontrolled** platform.”56 From Libra’s example, it is clear that an unspecified path to decentralization is **insufficient** to quell the concerns that industry observers and regulators share regarding sponsor-led platforms in the blockchain space. Interestingly, there are a handful of mechanisms (some unique to blockchain) that may help companies address concerns regarding their commitment to decentralization.

Arthur Camara, one of the founders of CryptoKitties, a blockchain-based game, describes a scenario in which a game is run on a smart contract that implements ascending levels of decentralization.57 The first level allows the contract owners to modify gameplay, the second level revokes their ability to modify gameplay but preserves certain other special privileges, and the third level revokes all special privileges assigned to the original contract owner.58 This means that the game would be fully autonomous, self-executing based on the smart contract’s terms without external influence from any party, including the creators.59 Camara suggests that creators can hold themselves accountable to their progressive decentralization roadmap by implementing time- or block-based maturity, where the smart contract described above ascends levels after a predefined period of time, or at the point that the blockchain passes a certain block number.60 Founders can also create an economic incentive to decentralize, where the portion of the fee for using the service that the founders retain, or the fee itself, increases with each level of decentralization.61 Competition regulators appear open to using smart contracts to effectuate behavioral remedies in competition cases, so implementing progressive decentralization through smart contracts might be compelling.62 Companies can take other steps to instill confidence within their community that they will follow through on decentralization. For example, blockchain-based startup Compound eliminated the ability for its creators to make sudden changes to the platform’s rules, implementing a 48-hour waiting period or “time lock” before changes take effect.63 Compound, a proponent of progressive decentralization, plans to test, in a transparent way, on-chain governance mechanisms that allow the community, instead of the core team, to govern the platform.64

There is not one right way to implement a progressive decentralization strategy, and only time will tell how embracing a clear roadmap to community ownership and taking consistent action in line with that goal—such as publishing high-quality, open-source developer materials—may reduce the risk of antitrust scrutiny associated with sponsor-led platforms.

# 2AC

## OFF

### 2AC – Arbitration

#### Legislation and precedent is key for the CP’s success – Gonzaga in yellow!

Michaelson and Jeskie ’21 [Peter L. Michaelson; Sandra A. Jeskie; June 2021; Arbitrator, mediator and attorney with Michaelson ADR Chambers LLC; Partner at Duane Morris, working in Philadelphia and California offices, and is an arbitrator and mediator in complex disputes involving technology, intellectual property, and complex commercial matters; Alternatives; “Blockchain and Smart Agreement Disputes Call for Arbitration’s Strengths,” vol. 39, p. 91-94]

Article II of the 1958 New York Convention on the Enforcement of Foreign Arbitral Awards (the “Convention”) requires that, for international enforcement under the Convention, agreements to arbitrate be in writing. It defines the term “agreement in writing“ to be “an arbitral clause in a contract or an arbitration agreement, signed by the parties or contained in an exchange of letters or telegrams.”

Smart Legal contracts are, however, nothing more than software code, which usually only a programmer fully understands. It would therefore be nearly impossible to meet the Convention’s consent-to-arbitrate requirements without an analogous text-based contract as a companion to a Smart Legal Contract.

Arbitral Seat

The framework for the arbitration is established by the arbitral seat. Selection of the seat will have practical and legal consequences. For example, the law of the seat provides the procedural law for the arbitration, including a tribunal’s authority, powers, and duties. It also establishes the court where an award may be challenged.

Because smart agreements are geographically distributed by nature, it is important to consider the practical and legal effect a seat may have on the dispute being arbitrated. Given the novelty of smart agreements, parties should fully consider how the arbitral seat may affect the dispute and specifically whether smart agreements are legal, enforceable and arbitrable in the seat and where awards can be enforced. Once consideration is given to those factors, the seat can be specified accordingly.

Enforceability & Validity

Unless and until there is sufficient participant confidence and legal clarity on Smart Legal Contract enforceability—whether in the United States or elsewhere—parties intending for their underlying transactions to have a legally binding effect should consider incorporating arbitral clauses, governance and/or automatic enforcement mechanisms to limit circumstances in which they will require judicial intervention, and/or to facilitate enforcement of arbitral or judicial decisions.

Internationally, arbitral awards rendered in any signatory member state are enforceable, under the Convention provisions and subject to its conditions, in about 160 other signatory member states.

As the concept of awards for Smart Legal Contracts, produced through automated blockchain technology, is novel, a question invariably arises as to whether these awards constitute a valid award for purposes of enforcement under the Convention and particularly by national courts of its member states.

Article I of the Convention is silent on any specific form an arbitral award must take, including whether it must be in written form or not, or in a specific format, to be signed by the arbitrators. Hence, it is likely that, under the Convention itself, a blockchainbased award, authenticated in code, may be considered valid, though the authors are not presently aware of any ruling from a court or other forum which addresses the issue. Sara Hourani, “The Legal Reality of the Recognition and Enforcement of Cross Border Blockchain based Arbitral Awards: Beyond Futuristic Idealism?” Off the Chain (May 18, 2019).

Assuming the Convention per se presents no evident limitation to recognizing and enforcing such awards, then the focus shifts from the Convention to national legislation, which might recognize and enforce such an award, or not.

In that regard, the Convention contains provisions that refer judges back to the application of relevant domestic law. For example, a national court may refuse to recognize and/or enforce an arbitral award if, under Article V(1) (e), it has not yet become binding on the parties or has been set aside or suspended by the competent court at the seat of arbitration—or if, under Article V(2)(b), it lies contrary to that nation’s public policy.

Consequently, Article V may limit recognition and enforcement of blockchain-based Smart Legal Contract awards that are only authenticated in code, if those awards are invalid under applicable national law at their seats of arbitration or their places of enforcement.

So far, the current legal framework under the Convention appears to allow for recognizing and enforcing blockchain-based arbitral awards if they are valid under the law at the seat of arbitration and/or the place of enforcement.

Clearly, over time, some jurisdictions may be more willing than others to recognize and enforce these novel forms of arbitral awards. In that regard, Article VII(1) encourages other multilateral or bilateral state agreements on the recognition and enforcement of arbitral awards to take precedence over the provisions of the Convention to encourage recognition and enforcement of foreign arbitral awards, potentially motivating agreements among member states to specifically validate blockchain-based awards. It remains to be seen, once appropriate jurisprudence starts appearing from the former jurisdictions, just how open they will be and what conditions, if any, they will impose.

#### Only new rules and guidelines increase certainty.

Miller 20 [Evan, Senior Associate, Vinson & Elkins LLP, “A tale of two regulators: antitrust implications of progressive decentralization in blockchain platforms,” *Washington & Lee Law Review* 77, <https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1141&context=wlulr-online>] MAM

Blockchain technology and its use cases are still developing, and so too is the regulatory response to blockchain-based platforms. This Article proposes two recommendations for consideration in light of the apparent tension between the priorities for securities regulators on the one hand and competition regulators on the other.

First, competition regulators should consider the current regulatory dynamics that are shaping the blockchain market when considering whether to investigate conduct or initiate an enforcement action. For example, competition regulators should realize that the current regulatory environment may force a company to delay decentralization and instead adopt a sponsor-led model. This could take a handful of forms, including an association of companies that control the platform in its early days. Competition regulators should carefully consider a project’s progressive decentralization roadmap, and the mechanisms in place to ensure decentralization is achieved, before reacting negatively to the involvement of an incumbent firm in a blockchain project or other sponsor-led platform dynamics. Additionally, competition regulators should thoughtfully consider whether leveraging an existing ecosystem (e.g., a messaging app) will actually lead to de facto control over the blockchain platform, or if such product integration is merely one step in the progressive decentralization roadmap. Integrating blockchain technology with an existing product or service is one of the most likely ways to achieve mass adoption of blockchain at an early stage and to more quickly realize its procompetitive benefits.

Second, regulators and policymakers should strive to resolve the tension that exists between the actions of securities and competition regulators. To date, the SEC has largely regulated the blockchain and cryptocurrency community through enforcement actions. An alternative approach is to implement rules and guidelines that take into account feedback from stakeholders. The clarity of rules over fact-specific enforcement actions would bring a degree of certainty that is currently missing from the market. Additionally, the SEC and the DOJ can use their MOU as a framework to better align their objectives as it relates to the future of blockchain platforms.

Lastly, policymakers should seek to clarify laws and regulatory mandates that give rise to the tension in the first place.

#### Status quo enforcement fails – pro-blockchain regulations are key.

Schrepel 11/1 (Dr. Thibault Schrepel, Associate Professor of Law at VU Amsterdam and Faculty Affiliate at Stanford University’s CodeX Center, interviewed by Abhinav Chugh; Acting Content and Partnerships Lead, World Economic Forum, 11-1-2021, How to predict where blockchain regulation may be heading: an expert explains, World Economic Forum, https://www.weforum.org/agenda/2021/11/how-to-predict-where-blockchain-regulation-may-be-heading-an-expert-explains/)

I wish we could move beyond the “anti vs. pro” enforcement debate. My work does not fit anywhere on this scale because it seeks to contribute to a different enforcement, hopefully more dynamic, more in line with complexity theory and innovation. For one, I see the use of computational tools – computer-based problem-solving methods, such as natural language processing, unsupervised machine learning or agent-based modeling – as a way to get antitrust enforcement closer to market realities. In addition, blockchain antitrust begs for a **different type of enforcement activities,** called pro-blockchain, which implies protecting the technologies from artificial forms of centralization without challenging blockchain core characteristics.

### 2AC – Antitrust PIC– Michigan

#### Antitrust is best for guiding innovation in young markets – applying other regulations before blockchain becomes high-traffic will disrupt its development

Massarotto 19 [Giovanna, Academic Fellow at the Center for Technology Innovation and Competition (CTIC) at UPenn, “FROM DIGITAL TO BLOCKCHAIN MARKETS. WHAT ROLE FOR ANTITRUST AND REGULATION,” January, <https://bit.ly/3BvPmrz>, JCR]

Antitrust has always played a fundamental role in guiding the innovation process. The AT&T antitrust consent decree of 1956 led to the creation of Unix, the first and most important universal computer operating system80 and the underlying language of the Internet. The Internet is probably the main technological innovation that has affected markets in the last thirty years taking us in the Internet Era and massively generating digital online markets.81 Based on Pen Internet surveys, in mid-2011, seventy-eight percent of the American people interviewed were Internet users.82 Hi-tech companies built on the Internet platform, such as Google and Amazon, exponentially increased in size in a few years. In 1998, Google counted six million of Web pages; in two years Google ran a billion of pages.83 The blockchain has the potential to be the next cutting edge technology which will change markets paradigm again bringing us to a new era—the Blockchain era. Similar to Java technologies developed in the late 20th, blockchain represents a world of new opportunities for some companies. Alternatively there is a looming threat for others who hold market power in present centralized networks as such platforms may become unnecessary. At the end of the 1990s Microsoft, which held over ninety percent of the world’s personal computer (PC) market, had to confront the threat of Java. Microsoft v. Java is an interesting case and useful to the blockchain discussion, because Java technology was the first open technology to enable software developers to write programs that could run on any operating system or microprocessor, bypassing Microsoft. Present large players, including Google and Amazon, may be tempted to engage in anticompetitive conduct to slow down the success of the blockchain technology or to misuse this technology to increase their market power or to collude with others. Blockchain technology is in its infancy and far from being perfect. Private/closed blockchains can, for example, create the perfect conditions for companies to collude and smart contracts automatically punish deviations by participants from cartel agreements. In private/closed blockchains exclusionary conduct might also occur, as the participation to those networks is by invitation only. Antitrust enforcers have the responsibility to investigate similar risks and be proactive. On the other hand, a public and open blockchain devises an open democratic platform that preserves economic democracy and open markets. Since Standard Oil, the creation and preservation of open and free markets is the primary antitrust goal; the same goal should be encouraged for blockchain technology today. Standard Oil, 84 AT&T85 and more recently U.S. and EU Microsoft86 cases have shown that the temptation for companies that have the most to lose in a totally open market to engage in illegal anticompetitive behavior is often too compelling.87 Antitrust enforcers are markets’ irreplaceable gatekeepers and need to be aware and prepared for such a risk without compromising companies’ incentives to innovate as it is explained in the following section—Microsoft v. Java. A. Microsoft v. Java (1995) In 1995, Sun Microsystem (Sun) released the Java platform,88 which included a set of computer software and specifications;89 the DOJ saw in Sun and its development of Java technologies a potential alternative to Microsoft’s quasi-monopoly in operating systems. At the time that Sun developed Java technologies, which included both Java programming language, Java class libraries, and Java Virtual Machine (JVM), Microsoft held about 95 percent of the “licensing of all Intel-compatible PC operating systems worldwide.”90 Java technologies enabled software developers to write computer programs that could run on any operating system through a JVM, a virtual translator that enabled software written in Java or other computer languages to be executed in different operating systems or directly on microprocessors like Intel. Before Java was released, all computer programs were written to and run only on a specific operating system or microprocessor. Microsoft Windows or Apple IOS needed specific compilers (called platforms-dependent)91 to execute computer programs because each operating system reads/understands a specific machine language. Conversely, the JVM is a virtual machine (not a compiler designed for a single operating system) that enables operating systems to run any computer programs, significantly lowering the barriers of the operating systems market. By doing so, the JVM could have become the common platform used to perform computer programs on any machines. Sun, in addition to collaborating with Netscape,92 started collaborating with Intel, the market leader of computer microprocessors (Intel x86 CPU). Sun and Intel aimed at optimizing the translation of the computer program codes directly to Intel microprocessors, bypassing the Microsoft operating system (Windows).93 In 1996, as Java was increasing in size and threatened to overshadow Windows’ quasimonopoly, Microsoft created a fork of Java technologies. In particular, the Microsoft fork included the Microsoft version of the JVM that was intentionally incompatible with any Sun products.94 Although the DOJ considered that Microsoft’s fork of Java aimed at weakening the JVM competitive position, the district court did not embrace the DOJ’s complaint. As the Microsoft JVM ran faster than “ones calling upon Windows APIs with Sun’s method,”95 the district court recognized Microsoft’s conduct as lawful. In other words, Microsoft invested in developing a JVM for Microsoft that ran faster and was incompatible with Sun products, to prevent the JVM, and more generally Java’s technologies from jeopardizing Microsoft’s dominance. Although de facto Microsoft’s conduct was directly focused on limiting Sun’s success through the standardization process of its technologies, Microsoft developed a higher quality product for its operating systems than Sun. Considering the fact that antitrust law encourages competition among companies and competitors,96 no antitrust intervention was taken with respect to the Microsoft/JVM fragmentation issue. Antitrust enforcers thought that no matter what the underlying intent of Microsoft conduct was or whether its conduct damaged competitors, in the end, Microsoft created a better version of this operating system which increased consumer welfare. Although I am still not convinced that the decision of the district court was the best antitrust solution—it makes legal sense. There is much to learn from Microsoft v. Java case that can be useful as it relates to the development of blockchain and the preservation of a truly open market. Antitrust enforcers will be faced with a similar situation when confronting the potential of blockchain as it relates to the players that have the most to lose in a totally open market. Antitrust law protects consumers and markets’ efficiency—not competitors. Antitrust analysis should evaluate the overall results in the behavior of companies in the light of innovation technology and consumer welfare.97 The innovation process inevitably increases consumer welfare providing a wider variety of technological products and services at increasingly lower prices. The main focus of antitrust law should be to achieve this competitive outcome. B. Antitrust and Innovation “Without change there is no innovation, creativity, or incentive for improvement.” (William Pollard) If we look back historically, antitrust law has made clear the importance of the innovation process in preserving market efficiency and consumer welfare, often leading the path to innovation and the development of new markets. The AT&T antitrust consent decree of 1956, for example, led to the creation of Unix, the first and most important universal computer operating system.98 Although AT&T developed the Unix operating system for private use in 1969, AT&T could not sell Unix because the terms of the consent decree of 1956 prevented AT&T from selling software, such as Unix.99 AT&T decided to freely license the Unix operating system to universities and Unix soon became the most important universal operating system due to its network effects 100 and the underlying language of the Internet. In 1980, Berkeley University, which had created complementary software for Unix,101 collaborated with the Defense Advanced Research Projects Agency to adapt Unix for the creation of the precursor to the Internet—the ARPANET project. 102 Unix has been developed in many different versions, such as GNU/Linux, Sun Solaris and MacOS X.103 Linux is the open source operating system that powers Google, Facebook, Twitter and Amazon.104 In the discussion on antitrust and innovation, the IBM antitrust case and the creation of the market of operating systems represents another interesting story. In 1960s, IBM was the leading computer manufacturer, 105 which produced from the hardware to the operating system and most of software installed in IBM computers. In 1968, the DOJ required IBM to implement a software unbundling policy,106 which prevented IBM from installing its own operating system. The IBM unbundling decision opened the market of operating systems to competition. In 1980s, Microsoft started developing the operating system for IBM’s personal computers (IBM PC) 107—the rest of the story is well known. The 1956 antitrust intervention at AT&T set the tone for the creation of the Internet.108 In 2018 blockchain potentially could be the next technology that would lead the innovation process. Blockchain may change market paradigm again and markets shift from digital to blockchain platforms. Innovation means “the discovery, development, and commercialization of new and improved products and processes,”109 according to Professor Michael Carrier, hence new markets. Professor William Baumol, Robert Litan and Carl J. Schmman provided a broader definition, defining innovation as “the marriage of new knowledge, embodied in an invention.” 110 Blockchain technology falls perfectly into both of these definitions. Antitrust and innovation (such as the blockchain) are not separate issues. Antitrust and the innovation process pursue the same goals: increasing market efficiency and consumer welfare. Antitrust and innovation need each other to achieve such goals. Similar to the Internet, blockchain can change markets again bringing us to a new economic era—the blockchain era— where ‘blind alleys’ are the standard and where antitrust needs to serve as first market guidance enforcing antitrust rules and principles. 111Antitrust enforcers must endorse and oversee this new economic era maintaining the delicate balance between over controlling the actions of large high technology companies and keeping incentives for them to lead in the creation of new technologies. Alexander Graham Bell was both the founder of AT&T (the company which maintained its monopoly on U.S. telephone industry until the antitrust decision of 1982)112 and the inventor of the telephone.113 Today antitrust agencies are worried about the control of the data industry by few powerful high-tech companies (such as Google, Amazon and Facebook) which, by leveraging on network effects linked to their digital platform, are increasing further in size. Markets can naturally correct some antitrust concerns through the development of new technologies and the creation of new markets in competition with existing ones. Those anticompetitive practices that are not corrigible through self-regulation might require the intervention of antitrust agencies. In summary, the preservation of the innovation process and the likely shifting from centralized and closed to open and decentralized platforms is where antitrust enforcers should focus their attention. The real competition is inherent in such a process, namely in the creation of new technologies, new types of organisations and new sources of supply—Professor Joseph Schumpeter observed.114 In order for such a process to function antitrust agencies are irreplaceable neutral bodies to oversee that no one engages in anticompetitive conduct to profit beyond that attainable in open and free markets. C. Blockchain and the Risk of Anticompetitive Conduct Blockchain is a young technology and many unresolved issues exist. In the context of antitrust, blockchain technology may increase the risk of collusion among participants/businesses within a blockchain and exclusionary conduct.115 As discussed previously, blockchain can be public and open, or private and closed. In public blockchains everyone can potentially participate alleviating the risk of collusion and exclusionary conduct; while in private blockchains the risk of engaging in anticompetitive conduct seems to be high. 116 1. The Risk of Collusion in Public Blockchain In public blockchain transactions’ data are distributed and stored in a vast number of computers (the decentralized blockchain ledger) which can make easier for competitors to tacitly collude despite the parties of transactions are kept secret.117 As the previous example of Uber pricing algorithm revealed, the transparency of price information can increase consumer welfare;118 condemning the transparency in public blockchains under the per se rule does not seem appropriate. The adoption of a rule of reason analysis to assess potential anticompetitive effects in public blockchain seems to be a better fit. Furthermore, in public blockchains the security of the transactions relies on a consensus mechanism which also alleviates the risk of collusion, as participants do not need to trust each other to communicate.119 The consensus mechanism forms the set of rules of the blockchain network: if everyone follows the rules, everyone wins and the network properly functions. The bitcoin blockchain, for example, is a public blockchain base on a consensus mechanism (the Proof of Work (PoW)), which incentivizes participants in the bitcoin blockchain to act together for the cause of the entire network (maintaining the bitcoin platform). To successfully collude in the blockchain network a consensus of fifty-one percent of the network’s participants is required. The proof of work is not the only consensus algorithm devised for blockchain. A bitcoin mining introduced the delegate proof of stake (DPS) to save electric power120 and time (usually ten minutes) required in blockchain transactions.121 However, the DPS raises antitrust concerns. In DPS one coin corresponds to one vote and users vote to select other users they trust called witnesses. Only the top tier of witnesses who have gathered the most votes has the right to validate transactions and are paid by the network as well as any miners in a PoW system.122 In addition to the vote of witnesses, users vote for a group of delegates that are responsible for governing and performance of the blockchain protocol. Delegates do not validate transactions nor do they produce blocks. The DPS mechanism of course increases competition because users vote for people they trust more. On the other hand, the concentration of votes can compromise the decentralisation process and raises antitrust concerns related to collusion and the creation of cartels among delegates/witnesses.123 2. The Risk of Collusion in Private Blockchain In private, closed or permissioned blockchains the risk of collusion is even higher. In private blockchain there is no consensus mechanism; participants need to be invited and are only known to each other.124 There are three main types of permissions (invitations) that could be sent: Read, Write, and Commit. 125 Read permission refers to someone that can access the ledger and check transactions. Write permission is sent to the person that transacts and broadcasts the transactions to the network; Commit permission allows the participant to update the ledger.126 Instead of a consensus mechanism like the PoW, the security of the transactions relies on the fact that participants have been previously screened by the other participants to join the blockchain (participation is by invitation only) and everything the blockchain does is totally private. In a private blockchain the validating power is usually assigned to previously verified and known parties who already regularly transact with one another, creating the potential of a transparent environment among their participants.127 There are many benefits to the process of communication and cooperation in private blockchains, and the same ease of cooperation and communication can be used to facilitate collusion on prices/markets more quickly and efficiently, especially in oligopolies where a few players control the markets. 128 Similar to a joint venture or consortium,129 private blockchains can potentially create the best conditions for participants (competitors) to collude and form a cartel.130 The transparent environment can help the identification of deviations by cartel participants and smart contracts automatize the punishment for any cartel’s deviation. Smart contracts are not exactly legal contracts, but they can become legal contracts if certain conditions are met.131 Smart contracts represent the “simplest form of decentralized automation”132 as they define standard rules through a digital protocol that are self-executed by a computer or a network of computers when the participants reach an agreement and meet the conditions stated in the agreement. In other words, smart contracts are potentially selfexecuting contractual states stored on a blockchain;133 contracts built into a code and enforced by a program.134 Thus, smart contracts can be used to establish “automated punishments” 135 through a digital protocol for those who deviate from a cartel. In summary, private/permissioned blockchains and pricing algorithms can basically reach the same result in fixing goods and services’ price. Private blockchains can be more efficient than pricing algorithms in preserving confidentiality and punishing cartel’s deviations by means of smart contracts.136 Antitrust agencies need to be proactive in the development of conditions to close this gap. Similar to pricing algorithms, antitrust agencies or regulators might think of setting default standard rules or conditions that private blockchains have to follow to prevent collusion. Such standard rules or conditions can be included in smart contracts stored on private blockchains. Instead of punishing the deviations of cartels, smart contracts can represent a valuable tool to prevent and punish forms of collusion. Through greater standardization of smart contracts, line codes protocols and law become one and the same.137 Smart contracts have the potential to become a remarkable legal and antitrust tool. 3. The Risk of Exclusionary conduct in Private Blockchain A risk of exclusionary conduct exists almost exclusive in private blockchains; while in a public blockchain which is open to everybody, this risk does not really existent. As the participation in closed blockchains is by invitation only,138 successful private blockchains could acquire market power (a dominant position) and refuse to grant access to some companies. As long as private blockchains encourage synergies there is no reason for concern, and competition among blockchains can decrease the anti-competitive effects related to exclusionary conduct. 139 But in the long run a single blockchain might become dominant and exclusionary strategies effective. In that case, the regulator (antitrust or another government agency) might require the blockchain to break up into different parts.140 Or, rather, similar to the context of standard essential patents (SEP), antitrust or another neutral body could require the blockchain to open its membership for non-participants on fair, reasonable and nondiscriminatory conditions (FRAND terms).141 Antitrust agencies could also provide some guidance to markets on the risk of engaging in anticompetitive conduct through a blockchain to prevent both exclusionary conduct and agreements in restraint of trade by means of the adoption of this technology. 4. Conclusions In public blockchains the risk of collusion between validating parties (thus nodes or miners) is almost totally alleviate. Anyone can read, write or transact and those transactions are secured by proof of work or others consensus mechanisms and the Public Key Infrastructure ensures anonymity of transactions.142 In public blockchains exclusionary conduct cannot occur as the participation is open to everybody. Despite the fact that private blockchains might seem safer and more reliable for the intent of preserving the privacy of participants, the risk of collusion among participants in private blockchains is potentially very higher and exclusionary conduct is also possible. Antitrust agencies need to be proactive and balance the need of synergies, competition among blockchain participants and networks with the risks of forms of collusion and exclusionary conduct. Blockchain as any tool/technology if not used appropriately can damage instead of benefit markets and consumers. Antitrust agencies have a huge responsibility in helping participants in understanding how to use blockchain technology to increase rather than decreasing markets efficiency and consumers welfare. C. Public Blockchain and Antitrust Economic Democracy Goal Antitrust law originated in 1890, as a tool of economic democracy to contrast the increasing vast accumulation of wealth in the hands of a few powerful corporations.143 Long before the Sherman Act, legislators and judges recognized the desire of entrepreneurs to profit beyond that attainable in open markets.144 In the 19th century, with the development of the railroads U.S. companies starting producing and selling goods in a larger geographic context raising the need for a federal law to protect open markets.145 Standard Oil predicted the importance of oil and railroads in the new economy. Rockerfeller’s oil company ensured its control over the oil market through an extensive trust that existed between Standard Oil and the railroads.146 In short, the initial open and free market of U.S. oil was soon subject to Standard Oil selfregulation and supervision. The creation and preservation of open and free markets was the primary antitrust goal; the same goal should be encouraged for blockchain technology today. Public blockchains imply decentralized, open and free networks,147 and “the final victory of free markets.”148 The idea behind open and decentralized networks, such as public blockchains, is the same idea that originally formed the World Wide Web (Web). The Web made an open and decentralized platform where everybody could freely interact and work like companies act in open markets.149 Over the last years, large technology companies found ways through centralized platforms to come between the users and the open platform by making themselves an integral part of the process. As Tim Berners-Lee observed, the blockchain and the web have the chance to “connect together in lots of interesting ways,”150 which may reduce the role of big tech companies, such as Google and Facebook.151 Thus, an antitrust intervention against present monopolies or large corporations might become unnecessary thanks to the development of the blockchain technology and decentralized markets. Although the main goal of antitrust law could be achieved through open networks, such as a public blockchain, antitrust enforcers still need to play a fundamental role as gatekeepers of the economic democracy in markets. As the Supreme Court recognized, the Sherman act is the ‘Magna Carta of free enterprise’152 which needs to be enforced to be effective. The railroads and the Internet network created potential open platforms and infrastructures, which required an antitrust intervention to guarantee equal access to all market participants and prevent possible abusive practices.153 As a football match needs both some rules and referees, markets need rules and neutral bodies to oversee the compliance of those rules. Otherwise it is hard to tell who wins the competition or to even have a competition at all. D. Conclusions Looking at the past, markets are moving ever faster. Similar to what occurred with the growth of the Web, open and free technologies such as blockchain has the potential to expand exponentially due to the consensus of people in free and open platforms. As any tool or technology, blockchain can result in market inefficiency and harming consumers if not appropriately used. Antitrust enforcers are responsible for understanding and teaching markets how to use blockchain technology in a way that benefits markets and consumers in the end by means of guidelines and regulation. Antitrust agencies are fundamental in overseeing markets and preventing the large players from abusing their power. Professor William J. Baumol, Robert E. Litan and Carl J. Schramm observed that “breakthrough technologies can quickly make existing products and services obsolete and for that reason may be fiercely resisted within large organizations.”154 Antitrust enforcers should be completely prepared for this resistance and still provide support to the large companies as they are the ones that created the markets and have the resources and knowledge to create greater value (Microsoft v. Java). Antitrust agencies are responsible to ensure that there is a level playing field to compete in the evolution of existing technologies or the creation of new ones. Through the support of antitrust law, the largest companies can continue in the development of competitive technologies creating alternative platforms or advancing the existing ones in open democratic markets. V. REGULATION IN THE BLOCKCHAIN Similar to streets, markets do not need speed limits, traffic lights or stop sign to regulate the traffic if there are no cars or only a few. When a street becomes a high-traffic corridor, a traffic light or stop signs—hence some rules—becomes necessary to regulate the traffic. Regulating the traffic in streets might seem less complex than regulating markets, but both have the same purpose—finding the most efficient solution in the light of the public interest.155 Initially, markets based on the blockchain technology might not need a complex set of rules—an antitrust supervision and regulation might be sufficient. Greater forms of regulation might be desirable if such markets become increasing high-traffic areas and a crucial component of our economic system. Antitrust law originated in the U.S. as the first arm of government regulation with the then booming oil market to prevent the risks linked to private supervision and governing powers. Data represent the ‘new oil’ and instead of being traded in physical platforms (like the railroad) are traded in online digital platforms based on the Internet. As a consequence, data has attracted even more and varied businesses, creating new digital online platforms. Such platforms based on the Internet network became increasingly high-traffic marketplaces and a crucial part of today’s economy which have required sophisticated regulations.156 Blockchain markets and the blockchain network might become fundamental component of our economy and require government intervention to regulate blockchain’s goods and services, or goods and services traded on the blockchain platform. Similar to the Internet, we might consider having a single universal blockchain and a variety of different markets of services and goods based on such a blockchain. People increasingly invest in any markets they trust. The blockchain network, goods and services need the trust of participants to succeed and become increasingly successful. As learned from the past, self-regulation has often failed to maintain trust in markets. The financial crisis of 2008 is only one example of how specific forms of regulation might be necessary when markets become very high-traffic marketplaces, and antitrust alone is insufficient to regulate them.

#### ‘Systemic risk’ means nothing

John B. Taylor 9, Mary and Robert Raymond Professor of Economics at Stanford University and the George P. Shultz Senior Fellow in Economics at the Hoover Institution, “Defining Systemic Risk Operationally”, Ending Government Bailouts As We Know Them, December 2009, https://web.stanford.edu/~johntayl/Defining%20Systemic%20Risk%20Operationally%20Revised.pdf

One of the most feared events in banking is the cry of systemic risk. It matches the fear of a cry of “fire!” in a crowded theater or other gatherings. But unlike fire, the term systemic risk is not clearly defined. - George G. Kaufman and Kenneth E. Scott (2003)

For anyone interested in reducing government bailouts, a clear operational definition and measure of systemic risk for financial institutions is essential. Such a definition would set boundaries or limits on bailouts. If a particular financial firm’s failure did not satisfy the definition, then there would be no rationale for the government to bail out that firm or its creditors. A clear definition of systemic risk would also suggest alternatives to a bailout in certain cases. And if the definition was widely agreed to, then firms or their creditors could not arbitrarily cry “systemic risk” as a way to get government rescue funds. As George Shultz (2009) points out, based on his experience in government, frequently “the problem can be overestimated or can be reasonably contained.”

The more restrictive the definition and the more credibly it is adhered to by policy makers, the fewer bailouts we would see. Recognizing that bailouts are unavailable except in the most unlikely circumstances, firms and their creditors would have the incentive to adjust their behavior. But if, to the contrary, systemic risk is not clearly defined, then all such boundaries and incentives are blurred, systemic risk can be used to scare people and their government—just like the cry of fire—into bailouts, and the current bailout mentality continues or even grows.

#### \*No nuke terror –

Mueller and Stewart 10/29/18 [John Mueller is Woody Hayes Senior Research Scientist, Mershon Center for International Security Studies, and adjunct professor of Political Science, at Ohio State University. He is also a Senior Fellow at the Cato Institute in Washington. Mark G. Stewart is Professor of Civil Engineering and Director of the Centre for Infrastructure Performance and Reliability at The University of Newcastle in Australia. Terrorism and Bathtubs: Comparing and Assessing the Risks. October 29, 2018. https://www.tandfonline.com/doi/abs/10.1080/09546553.2018.1530662?journalCode=ftpv20]

However, there is of course no guarantee that things will remain that way, and the 9/11 attacks inspired the remarkable extrapolation that, because the terrorists were successful with box cutters, they might soon be able to turn out weapons of mass destruction— particularly nuclear ones—and then detonate them in an American city. For example, in his influential 2004 book, Nuclear Terrorism, Harvard’s Graham Allison relayed his “considered judgment” that “on the current path, a nuclear terrorist attack on America in the decade ahead is more likely than not.”11 Allison has had a great deal of company in his alarming pronouncements. In 2007, the distinguished physicist Richard Garwin put the likelihood of a nuclear explosion on an American or European city by terrorist or other means at 20 percent per year, which would work out to 91 percent over the eleven-year period to 2018.12

Allison’s time is up, and so is Garwin’s. These off-repeated warnings have proven to be empty. And it is important to point out that not only have terrorists failed to go nuclear, but as William Langewiesche, who has assessed the process in detail, put it in 2007, “The best information is that no one has gotten anywhere near this. I mean, if you look carefully and practically at this process, you see that it is an enormous undertaking full of risks for the would-be terrorists.”13 That process requires trusting corrupted foreign collaborators and other criminals, obtaining and transporting highly guarded material, setting up a machine shop staffed with top scientists and technicians, and rolling the heavy, cumbersome, and untested finished product into position to be detonated by a skilled crew, all the while attracting no attention from outsiders.

Nor have terrorist groups been able to steal existing nuclear weapons—characteristically burdened with multiple safety devices and often stored in pieces at separate secure locales—from existing arsenals as was once much feared. And they certainly have not been able to cajole leaders in nuclear states to palm one off to them—though a war inflicting more death than Hiroshima and Nagasaki combined was launched against Iraq in 2003 in major part under the spell of fantasies about such a handover.14

More generally, the actual terrorist “adversaries” in the West scarcely deserve accolades for either dedication or prowess. It is true, of course, that sometimes even incompetents can get lucky, but such instances, however tragic, are rare. For the most part, terrorists in the United States are a confused, inadequate, incompetent, blundering, and gullible bunch, only occasionally able to get their act together. Most seem to be far better at frenetic and often self-deluded scheming than at actual execution. A summary assessment by RAND’s Brian Jenkins is apt: “their numbers remain small, their determination limp, and their competence poor.”15 And much the same holds for Europe and the rest of the developed world.16 Also working against terrorist success in the West is the fact that almost all are amateurs: they have never before tried to do something like this. Unlike criminals they have not been able to develop street smarts.

Except perhaps for the use of vehicles to deliver mayhem (though this idea is by no means new in the history of terrorism), there has been remarkably little innovation in terrorist weaponry or methodology since 9/11.17 Like their predecessors, they have continued to rely on bombs (many of which fail to detonate or do much damage) and bullets.18

### 2AC – BizCon

#### Non-unique: Economic slowdown decks investor confidence.

* Inflation, Consumer Confidence, PMIs, Bottlenecks in labor and product markets, Delta

Carlsson-Szlezak 10/7 (Philipp Carlsson-Szlezak; Boston Consulting Group's Chief Economist and a Managing Director and Partner, Paul Swartz; senior economist and director at Boston Consulting Group, and Martin Reeves, chairman of the BCG Henderson Institute, 10-7-21, 10-7-2021, The U.S. Economic Recovery Is Slowing Down. Don’t Be Alarmed., Harvard Business Review, <https://hbr.org/2021/10/the-u-s-economic-recovery-is-slowing-down-dont-be-alarmed>) MAM \*\*Edited for ableist language\*\*

With a few exceptions, we expect global growth to peak this year, followed by a deceleration next year. The economy is running into additional negative surprises, which are driving uncertainty and fear: Consumer confidence has dipped markedly in recent weeks, while firms’ outlook has dimmed too, as seen in falling PMIs. Inflation, though moderating recently, has not yet fallen back to comfortable levels, while firms are facing bottlenecks in labor and product markets. This is all occurring against the backdrop of the Delta variant, which brings the prospect of waning of vaccine effectiveness, more breakthrough infections, booster shots, and potentially new rounds of restrictions. Adding complexity, all of this is unfolding in that critical stage of the recovery when the ~~crutches~~ [assistance] of policy support fade[s] and the private sector — consumers most of all — have to drive the expansion forward. That hand-off is part and parcel of any recovery, but given the unusual size of stimulus and its withdrawal, the slowdown now happens in a high-risk window. If the hand-off to consumers is successful, we project year-over-year growth will slow from as high as 7% in 2021 to perhaps 2.9% in 2022. What looks like a brutal deceleration, however, is in fact necessary. (The economy should not overheat too much.) Plus the projected 2.9% would leave the U.S. economy still operating comfortably above its trend growth of around 2%, below which an expansion becomes sharply more vulnerable.

#### Antitrust regulation is key to establishing certainty and public trust in blockchain.

Siong 19 (Arisa Siong is currently a Public and Regulatory Affairs Director in the External Relations team for Asia, 2019, “The Blockchain Antidote to Monopolization”, Chapter 3 of *Blockchain Economics: Implications of Distributed Ledgers Markets, communications networks, and algorithmic reality*) MAM

Lack of regulatory clarity

One of the potential barriers is the **lack of regulatory clarity over blockchains** and cryptocurrencies in particular. Attempts in early 2018 to coordinate regulatory approaches at the G20 level have failed to reach consensus. Regulation, if any, has been quite ad hoc and regimes vary **regionally as well as internationally.**

Such a lack of consistency creates uncertainty and inhibits wider use of blockchain. For instance, even banks who use Ripple’s blockchain technology for cross border payment settlement would not touch its native token XRP as “there was no way they could use an instrument that regulators may never approve” [Leising and Robinson, 2018]. Further, wide fluctuations in the value of cryptocurrencies prevents them from being a useful medium of exchange.

For blockchain to be pervasive, it must permeate the analogue world. There have been some movement on this front though developments remain experimental. Dubai has ambitious plans to secure all government documents on blockchain by 2020. Meridio has tokenized a three-story building in Brooklyn, enabling trade and investment of this property via blockchain. There is a project to put the genome code of the wildlife in the Amazonian rainforest on a blockchain and track use of this information to return value to the indigenous and traditional communities of the Amazon. More generally, this will require tokenization of analogue assets to be supported by statute (discussed above), not unlike role of the United Nations Commission on International Trade Law’s model laws that allowed electronic contracts to be legally binding. In addition, sensors and smart meters that digitalize new information and signals will widen the scope for blockchain applications. Here, regulation may be required to ensure economical access to this infrastructure.

Public trust and acceptance

Another potential reason for sluggish blockchain development is the paradoxical concept of decentralized trust. Centralized trust is easy to comprehend and accept because it has been the default. In markets where authorities do not command that sort of respect, decentralized trust may be attractive. Decentralized trust offered by blockchain is built on protocol designed incentives, implemented in code. That sets the bar for trust high as these protocols are not easily understood. As it is hard to trust something you do not understand, the core blockchain community has remained small.

This also means that non-code proficient users of blockchain (most of us) must delegate trust, via interpretation of code, to trusted parties or functions — for instance in the auditability of open source code or an establishment to provide oversight of the development of the code. This however represents a move back toward centralization and hangs a question mark over the value of decentralization. It has not helped that cryptocurrencies have developed a reputation as medium for illegal activities. Bitcoin, the poster child for blockchain being the currency of choice for an underground drug bazaar (Silk Road) does not bode well for instilling trust. For all its promise of trust, blockchain’s potential downfall is the lack of trust.

Regulation can help address concerns associated with blockchain technology and foster development. As trust is increasingly delegated to protocols and code, there will be an increasing public safety dimension to the work of software engineers and developers carry out. Regulatory oversight to ensure that digital architectures and systems of tomorrow are developed with public safety in mind will help **instill public trust** in code.

The Centre for International Governance Innovation suggests some form of **self-regulation** via a Code of Ethics akin to that in the civil engineering profession [CIGI, 2018b].

Self-regulation would shift the burden of regulation to **more parties** rather than rely solely on the government, allowing regulation to be nimble and relevant. On the other hand, self-policing schemes tend to suffer from moral hazard issues and may lack effectiveness. It is important therefore, for **market forces and societal norms** to impose **constraints on** the **conduct** of firms.

The present concern over economic and political power amassed by digital giants provides an important lesson in ensuring competitiveness of markets. Competition policy and law therefore need to be alert to the potential competition issues in blockchain markets.

#### Your link is generic to antitrust -- antitrust increases business confidence and growth broadly

OECD 14, Organization for Economic Cooperation and Development, “Factsheet on how competition policy affects macro-economic outcomes”, OECD, October 2014, https://www.oecd.org/daf/competition/2014-competition-factsheet-iv-en.pdf

Most importantly, it is clear that industries where there is greater competition experience faster productivity growth. This has been confirmed in a wide variety of empirical studies, on an industry-by-industry, or even firm-by-firm, basis. Some studies seek to explain differences in productivity growth between industries using measures of the intensity of competition they face. Others look at the effects of specific pro-competitive interventions, particularly trade liberalisation or the introduction of competition into a previously regulated, monopoly sector (such as electricity).

This finding is not confined to “Western” economies, but emerges from studies of the Japanese and South Korean experiences, as well as from developing countries.

The effects of stronger competition can be felt in sectors other than those in which the competition occurs. In particular, vigorous competition in upstream sectors can ‘cascade’ to improve productivity and employment in downstream sectors and so through the economy more widely.

The main reason seems to be that competition leads to an improvement in allocative efficiency by allowing more efficient firms to enter and gain market share, at the expense of less efficient firms (the so called between-firms effect). Regulations, or anti-competitive behaviour preventing entry and expansion, may therefore be particularly damaging for economic growth. Competition also improves the productive efficiency of firms (the so called within-firms effects), as firms facing competition seem to be better managed. This can even apply in sectors with important social as well as economic outcomes: for example, there is increasing evidence that competition in the provision of healthcare can improve quality outcomes.

There is also evidence that intervening to promote competition will increase innovation. Firms facing competitive rivals innovate more than monopolies (although after such competition a firm may of course end up with a monopoly through a patent). The relationship is not simple: it is possible that moderately competitive markets innovate the most, with both monopoly and highly competitive markets showing weaker innovation. However, as competition policy does not focus on making moderately competitive markets hyper-competitive, but rather on introducing or strengthening competition in markets where it does not work well, this would still imply that most competition policies serve to promote innovation.

Because more competitive markets result in higher productivity growth, policies that lead to markets operating more competitively, such as enforcement of competition law and removal of regulations that hinder competition, will result in faster economic growth.

Is there evidence that pro-competitive policies are effective?

In addition to this evidence that competition promotes growth, there have been studies directly of the effects of competition law itself, and of product market deregulation. Although it is difficult to distinguish the effects of individual policy changes, there are some studies showing that introducing competition law raises productivity. Conversely, the selective suspension of antitrust laws in the USA during the 1930s seems to have delayed recovery.

Many studies of the effect of competition law use international comparisons of different countries’ experiences, to assess whether countries with competition laws (or longer-standing, or more effective competition laws) achieve faster economic growth. The task is a difficult one because of many other factors that affect the overall economic growth rate, including other policies introduced at the same time (e.g. Eastern Europe’s transformation after 1989). Some studies find no effect, but the overwhelming majority of such studies do find a positive effect of competition law on economic growth. Most ascribe this effect to increased productivity, although there may also be an effect on investment, especially in developing countries, perhaps because competition laws boost business confidence and reduce corruption.

#### Self-regulation allows trust and innovation on the blockchain while still punishing anticompetitive practices

Light 21 (Joe Light, Bloomberg business reporter, 11-19-2021, The Crypto Industry’s Solution for Regulation: We’ll Handle It, Bloomberg, <https://www.bloomberg.com/news/articles/2021-11-19/crypto-industry-s-solution-to-regulation-is-self-regulation>) MAM

The cryptocurrency industry suddenly found itself in the crosshairs of a host of U.S. state and federal regulators this fall, facing millions of dollars of fines, threats of lawsuits, and warnings of new rules to come. Crypto executives say the abrupt—and sometimes overlapping—spate of enforcement threatens to chill innovation, especially in areas where it’s not clear which laws apply. Their solution? Let the industry help regulate itself. Major exchanges including Coinbase and Gemini and prominent investors like Andreessen Horowitz have floated the idea of a crypto self-regulatory organization (SRO), arguing it could be better suited to oversee the new and complex industry on some issues than traditional agencies, which have struggled to apply decades-old rules to the new market. Supporters say an SRO could be more agile in deciding on rules around new products, using its members’ expertise and resources. “The job of a regulator is not easy when you’re confronting something new,” says Greg Xethalis, chief compliance officer at crypto investment firm Multicoin Capital. “The question is, how do you get to an environment where the regulatory infrastructure can be more nimble?” Self-regulation has a long history on Wall Street. SROs, which are funded and governed by their own members, set rules, perform inspections, and mete out penalties to members, with authority delegated by Congress and regulators such as the Securities and Exchange Commission. A few years after Congress formed the SEC as part of President Franklin D. Roosevelt’s New Deal, the agency delegated some oversight of brokers and brokerage firms to the newly formed National Association of Securities Dealers, an SRO. Eighty years and a few reorganizations later, the NASD is now the Financial Industry Regulatory Authority, or Finra, with 3,600 employees helping to license, police, and levy penalties on hundreds of thousands of brokers, under the SEC’s supervision. A similar SRO polices commodities brokers, and the major stock exchanges are themselves self-regulatory organizations. For crypto, an SRO could be responsible to go after at least some infractions—referring serious fraud to agencies like the SEC. For example, the SRO could adjudicate whether a newly issued token should be classified as a security, a commodity, or something else, which proponents say would go a long way toward helping firms issue new ones without fearing an enforcement action years later. It could also handle such mundane tasks as setting product disclosure rules or standards governing how to manage customer data. Its behavior would be overseen by the SEC and other agencies, which would have the final say if they disagree with an SRO’s decisions.

#### Progressive decentralization causes venture capital follow-on – specified plans spur investor confidence.

Miller 20 [Evan, Senior Associate, Vinson & Elkins LLP, “A tale of two regulators: antitrust implications of progressive decentralization in blockchain platforms,” *Washington & Lee Law Review* 77, <https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1141&context=wlulr-online>] MAM

B. Progressive Decentralization Requires Trust That Platform Sponsors Will Actually Decentralize

Decentralization is the linchpin of the procompetitive potential for blockchain-based platforms, as envisioned by competition regulators. Indeed, Nick Grossman captured the sentiment of many competition regulators when he explained that people are worried about sponsor-led platforms like app stores where they could be “cut off,” which is why his **venture capital** firm is “**so excited about the crypto and blockchain space because** that is one area where the platform is an **open, unowned, uncontrolled** platform.”56 From Libra’s example, it is clear that an unspecified path to decentralization is **insufficient** to quell the concerns that industry observers and regulators share regarding sponsor-led platforms in the blockchain space. Interestingly, there are a handful of mechanisms (some unique to blockchain) that may help companies address concerns regarding their commitment to decentralization.

Arthur Camara, one of the founders of CryptoKitties, a blockchain-based game, describes a scenario in which a game is run on a smart contract that implements ascending levels of decentralization.57 The first level allows the contract owners to modify gameplay, the second level revokes their ability to modify gameplay but preserves certain other special privileges, and the third level revokes all special privileges assigned to the original contract owner.58 This means that the game would be fully autonomous, self-executing based on the smart contract’s terms without external influence from any party, including the creators.59 Camara suggests that creators can hold themselves accountable to their progressive decentralization roadmap by implementing time- or block-based maturity, where the smart contract described above ascends levels after a predefined period of time, or at the point that the blockchain passes a certain block number.60 Founders can also create an economic incentive to decentralize, where the portion of the fee for using the service that the founders retain, or the fee itself, increases with each level of decentralization.61 Competition regulators appear open to using smart contracts to effectuate behavioral remedies in competition cases, so implementing progressive decentralization through smart contracts might be compelling.62 Companies can take other steps to instill confidence within their community that they will follow through on decentralization. For example, blockchain-based startup Compound eliminated the ability for its creators to make sudden changes to the platform’s rules, implementing a 48-hour waiting period or “time lock” before changes take effect.63 Compound, a proponent of progressive decentralization, plans to test, in a transparent way, on-chain governance mechanisms that allow the community, instead of the core team, to govern the platform.64

There is not one right way to implement a progressive decentralization strategy, and only time will tell how embracing a clear roadmap to community ownership and taking consistent action in line with that goal—such as publishing high-quality, open-source developer materials—may reduce the risk of antitrust scrutiny associated with sponsor-led platforms.

#### Heg is resilient.

TBS Report, 8-29-2021, What does the future of America look like?, The Business Standard, https://www.tbsnews.net/features/panorama/what-does-future-america-look-294661

In his piece in The Economist, author Robert D. Kaplan identified several reasons why the geography of the United States places it in a better position than most of its rivals, allowing it to maintain an imperial-like position with extensive economic and military commitments across the globe. The first reason he gives is that it has an abundance of **water resources** and is not surrounded by powerful or hostile neighbours. According to him, "Notwithstanding the pathologies of this tighter, more interconnected world - terrorism, viral pandemics, ransomware - America, unlike China, is self-sufficient in hydrocarbons…The southern border, which American conservatives wail about, involves only poor migrants, and not the soldiers of two armies facing each other like on China's southern frontier with India." "That geography helps explain why America can miscalculate and fail in successive wars, yet **completely recover**, unlike smaller and less well-situated countries which have little margin for error. Thus, stories about American decline are **overrated**," he added. The fact that the United States is currently facing a slew of unwanted internal threats, including wealth inequality, **has little bearing on this position**. In the words of the author, "America's geographical bounty still provides it with an edge against great-power adversaries. This is true despite internal threats. They include challenges to America's social cohesion from new technology and wealth inequality that geography cannot wholly defend against (and which roil other countries too, notably China and Russia, which vie for "great power" status)." This geographical advantage, however, has its limitations. With domestic tensions exposed, it may be unable to save the United States from all of the crises that it is likely to face in the near future. Thus, the United States must strive to build and maintain good relations with other countries. Robert said, "America's large and well-endowed landmass certainly helps in a drawbridge-up environment of protectionism. Yet the country still requires allies and credible deterrents in a smaller and claustrophobic world where Russia threatens Ukraine and China threatens Taiwan." He added, "Geographical bounty cannot solve every problem. It is, as Morgenthau put it, a crucial component of power among others."

### 2AC – Tradeoff

#### Tidal wave of mergers thump.

Kern 1/10 (Rebecca Kern, POLITCO tech policy reporter, 1-10-2022, Antitrust enforcers are drowning in mergers, POLITICO, <https://www.politico.com/newsletters/morning-tech/2022/01/10/antitrust-enforcers-are-drowning-in-mergers-799773>) MAM

FIRST IN MT: MORE LIKE A MERGER TSUNAMI — The Federal Trade Commission and Justice Department have been warning for months that a surge in merger filings has stretched them thin. They weren’t just grousing: In 2021, companies reported 4,130 mergers to the two agencies — more than double the number from the previous year, according to an analysis by the law firm White & Case. In December alone, businesses reported 285 mergers, dwarfing any previous December figure since 2011 (even though December often sees a surge, as companies seek to wrap up deals by the end of the calendar year).

Mergers ballooned in 2021.

The flood of deals has forced the agencies to devote more of their already scarce resources to them. The FTC has moved some attorneys focused on policy and international affairs, for example, to help with merger review. Under law, the FTC and DOJ only have 30 days to decide whether a deal warrants a more in-depth probe, an added time pressure.

Plea for funds: Neither agency responded to a request for comment from MT on how the tidal wave of mergers has affected their operations. Both the DOJ and FTC have pleaded with Congress for more money, particularly after their hopes for a $500 million boost for each agency died along with the rest of the Democrats’ social spending bill. The text of a bill by Sens. Amy Klobuchar (D-Minn.) and Chuck Grassley (R-Iowa) to increase the money the agencies receive from merger filings was tucked into the Senate-passed U.S. Innovation and Competition Act, but the House has yet to act on it.

#### It also improves overall resource efficiency and investigation accuracy

Almudena Arcelus 21, Principal at Analysis Group, Mihran Yenikomshian, Vice President at Analysis Group, and Noemi Nocera, Associate at Analysis Group, “Mitigating Antitrust Concerns When Competitors Share Data Using Blockchain Technology”, Harvard Journal of Law and Digital Technology, Harv. J.L. & Tech. Dig. (2021), Spring 2021, Lexis

C. Transparency for regulators

Implementing transparency in the network design can improve regulators' ability to investigate claims of antitrust violations. First, blockchain networks could be designed to provide antitrust investigators with a clear audit trail of the life cycle of an asset as it moves through a firm's supply chain, providing critical information to investigators as they assess when and how a firm's products transformed from raw materials to a finished good. Second, networks can be designed to provide investigators with more accurate, reliable, and comprehensive transaction data across an entire firm, rather than the piecemeal and inconsistent data that regulators often receive. Last, we could imagine the development of a blockchain, potentially accessible only by select parties or regulators, that contains industry-wide transaction data, which could provide an unmatched tool for investigators. Furthermore, the standardized data format in a blockchain may lead to faster resolution of potential antitrust investigations.

Whether or not these particular strategies would be effective in a real-world setting will depend on the industry or business context, the design of the blockchain network at issue, and the effectiveness of governance and regulatory oversight.

V. CONCLUSION

Because of its potential to change the way many governments' and firms' services currently operate, blockchain technology has attracted extensive press coverage. Although antitrust concerns exist in relation to blockchain adoption and data sharing between competitors (including access to information, collusion, abuse of dominance, and enforcement), blockchain serves mainly as a data management tool. How it affects competition will depend on network design and regulatory oversight, among other things. When examining antitrust concerns, industry observers as well as regulators should assess blockchain technology according to its specific implementation and its role in the wider framework within which it is used.

#### Food insecurity doesn’t cause war

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

It is perhaps surprising, then, that there is little scholarly merit in the notion that a short-term reduction in access to food increases the probability that conflict will break out. This is because to start or participate in violent conflict requires people to have both the means and the will. Most people on the brink of starvation are not in the position to resort to violence, whether against the government or other social groups. In fact, the urban middle classes tend to be the most likely to protest against rises in food prices, since they often have the best opportunities, the most energy, and the best skills to coordinate and participate in protests. Accordingly, there is a widespread misapprehension that social unrest in periods of high food prices relates primarily to food shortages. In reality, the sources of discontent are considerably more complex – linked to political structures, land ownership, corruption, the desire for democratic reforms and general economic problems – where the price of food is seen in the context of general increases in the cost of living. Research has shown that while the international media have a tendency to seek simple resource-related explanations – such as drought or famine – for conflicts in the Global South, debates in the local media are permeated by more complex political relationships.

### 2AC – Dollar

#### Dollar is down.

Ahmed 1/13 (Saqib Iqbal Ahmed, Stocks, options and FX reporter - Reuters, 1-13-2022, Dollar slips as positioning and technical selling weigh, Reuters, <https://www.reuters.com/business/dollar-breaks-key-support-rates-outlook-seen-unchanged-by-inflation-data-2022-01-13/>) MAM

The dollar fell against a basket of currencies on Thursday to a two-month low, a day after data that showed an expected surge in U.S. consumer prices in December fell short of offering any new impetus for the Federal Reserve's policy normalization efforts. The U.S. Dollar Currency Index , which tracks the greenback against six major currencies, was down 0.2% at 94.791, its lowest since Nov. 10. The index, which rose 6.3% in 2021, is down about 1% for the week, on pace for its worst weekly performance in about eight months. "Coming into the new year the dollar positioning was very much skewed to being long," said Mazen Issa, senior FX strategist at TD Securities. "Yesterday's inflation numbers, in conjunction with (Fed Chair Jerome) Powell's testimony for his nomination hearing, were basically just in line with what markets had already positioned for," Issa said. "There wasn't anything materially new." December's monthly U.S. consumer inflation figures, published on Wednesday, were a fraction higher than forecast and the increase in year-on-year consumer prices was, as expected, 7% - its biggest jump since June 1982. Nevertheless, traders do not see these inflation readings as urgently shifting an already hawkish Fed too much. With at least three interest rate hikes already in the market price, some investors pared bets on further dollar gains. Powell on Tuesday gave no clear indication that the Fed was in a rush to speed up plans for tightening monetary policy, putting some downward pressure on the greenback, which has benefited in recent weeks from expectations for a rapid pace of policy normalization. U.S. producer price inflation slowed in December as the cost of goods fell amid signs that stretched supply chains were starting to ease, hopeful signs that inflation has probably peaked. r As continued high inflation eats further into Americans' pocketbooks, Federal Reserve Governor Lael Brainard on Thursday became the latest, and most senior, U.S. central banker to signal that the Fed is getting ready to start raising interest rates in March.

#### There’s a global blockchain arms race---keeping the lead by setting standards early is key to leadership that stabilizes the dollar

Tal Elyashiv 21, Founder and Managing Partner at SPiCE VC, Founder and Board Member at Securitize, MBA from the University of British Columbia, BS in Math and Political Science from Bar-Ilan University, “A New Global Arms Race In Digital Finance Is Heating Up”, CNBC, 1/21/2021, https://www.cnbc.com/2021/01/21/op-ed-a-new-global-arms-race-in-digital-finance-is-heating-up.html

Today, we’re on the precipice of what could be the largest transformational period in global history. With the first Industrial Revolution, new technologies like assembly lines, factories and transportation fundamentally changed society. This time, instead of cogwheels doing the work, blockchain-based digitalization will continue to drive transactions. Specifically, this latest phase of progress has its sights set on a massive industry ripe for disruption: finance.

Digital finance and the monetary system is leveraging decentralized blockchain technology to modernize financial markets. Dominant players in these systems include the world’s biggest financial institutions and global central banks.

The rise of digital currencies and CBDCs

As tokenization is an inevitable trend, central bank digital currencies (CBDC) are surging in adoption, since they are simply one kind of a more generalized digital asset, albeit one that is bound to risk-free central bank money. The global rivalry in digital currencies is heating up as central banks from an increasingly wider swath of countries, including China, Hong Kong, Thailand, the EU, U.K., U.S., and Australia, explore potential use cases for tokenized money.

CBDC is the first place where we see top-down adoption of distributed ledger technology (DLT) from central banks and governments. The adoption of CBDCs will drive significant DLT ecosystem innovation and development that will impact financial organizations. The widespread adoption of DLT will extend beyond finance to other industry verticals like security, supply chains, healthcare, retail and ecommerce.

How institutional investors are buying into crypto via Anchorage

CBDCs will certainly make payments, settlement of deals and trading simpler, especially when it comes to global trade. It will also potentially change the role current institutions are playing regarding money and payments. CBDC implementation will also possibly make cross border payments simpler and much cheaper. One result of that will be the enablement of micropayments, allowing small businesses to be more competitive and eliminate the need for aggregators in order to make them economically viable, resulting in a different distribution of value.

Winners and losers are made from historic periods of societal shifts and advancements. The U.S. was obviously a dominant force during the first revolution. As the world embarks on a new transformational journey, who is driving it? The answer to this question is very complex and currently unclear, but there is an intense financial technology “arms race” brewing between the world’s superpowers for dominance in digital finance infrastructure and technology, spurring short-term competitive innovation with critical long-term implications.

“I believe that if America does not lead innovation in the digital currency and payments area, others will,” David Marcus, head of Diem, the cryptocurrency project founded out of Facebook, said in a statement to the U.S. Senate Committee on Banking, Housing and Urban Affairs.

Huw van Steenis of UBS said there will be a “three-horse race” around the future of money with private tokens and CBDCs developing in parallel with efforts to improve the current system. The implications of winning or losing the digital finance “arms race” are massive and far-reaching.

During the U.S. and USSR space race, NASA harnessed tremendous intellectual and technical capital to enable the moon landing and further space exploration, leading to a variety of spinoff inventions, from global positioning systems (GPS) to advances in flight technology to Velcro and even freeze-dried food. In the same way, blockchain-based digital finance technology is a means to the end of greater technological sophistication.

The three leaders in the digital currency arms race

More than 80% of the world’s central banks are exploring their own versions of digital currencies, but it’s China, the U.S. and the EU that have the resources, technology and infrastructure to determine the future of the digital economy. 2020 started with a major event within the financial world: the World Economic Forum in Davos, where the WEF released a toolkit for policymakers regarding the creation of CBDCs.

China

China is currently testing its digital yuan with a feature allowing people to send money to each other by simply touching their smartphones together. This particular effort is just one of many digital currency trials China is conducting across the country. These coordinated activities, in combination with their leadership in the crypto ecosystem (accounting for nearly 90% of trading volumes and hosting two-thirds of bitcoin mining operations), is giving China somewhat of an advantage.

Leveraging that first-mover advantage, China has ambitious plans to leverage U.S. innovation and its own digital currency to someday dominate other world currencies. As a purely aspirational endeavor, the jury is still out on whether they can actually achieve this goal.

Regardless, China is creating a significant advantage in this global race on CBDCs by investing in the technology and experimenting at a very fast pace. Even in the most isolated and underdeveloped areas, most people already use electronic forms of payment, like WeChat Pay, almost exclusively. We will continue to see advancement from China with regards to the digital yuan, where it’s currently enjoying a first-mover advantage over other digital currencies.

China has made the digital yuan a public priority, and it has an ambitious goal of competing with the U.S. dollar by creating a digital Asian alternative. China will be able to track and control the movement of money in and out of the country, which is much easier to do with a digital yuan. Given its political structure, China is able to move faster than the U.S. or Europe in implementing such changes.

Europe

Europe is in a strong position to create a CBDC, but unlike attempts by smaller, individual countries like Sweden, the size and scale of an EU digital currency would be sustainable long-term and could compete at scale. The European Central Bank is discussing launching a consideration phase for a digital euro this year and launching a digital euro is at least a five-year plan.

United States

The U.S. continues to lead in the innovation, regulation and implementation of blockchain-based digital securities, banking, payments, insurance, etc., but may not be as far along as others when it comes to CBDCs. Over the last decade, American innovators have built compelling innovations in blockchain, digital currency and cryptocurrency aimed at revolutionizing finance and creating new US tech superstars. And, as these technologies advance, they’re innovating industries beyond just finance, including retail, cybersecurity, supply chain management and so many more.

Tech leaders in the space like Securitize are paving the way for widespread adoption and access to liquidity by building the mechanisms for the industry to take hold. The benefits of CBDCs will propel the U.S. implementation of a digital dollar. The release of CBDC is not just a technical change, but it’s also the revamp of a financial system that is centuries old. US policymakers should continue to foster US leadership in technological financial innovation and ensure that the American people enjoy its benefits first.

“The United States usually wins when we unleash the power of our innovative, dynamic private sector, with the government setting the rules rather than building the products,” said Brian Brooks, former acting comptroller of the currency of the U.S. Treasury Department’s Office of the Comptroller of the Currency. “But either way, given the intense focus of other countries in this area, let me say that because of the important role of the US dollar, we need the United States to step forward on this field.”

The future of finance

What happens with CBDCs will have far-reaching implications on the future of digital finance, including cryptocurrency and digital securities. Much like the space race didn’t just put a man on the moon, but also catapulted the invention of important ancillary technologies, CBDC and DLT adoption will influence the forward-moving progress of every industry. There will be an exponential amount of innovations resulting from this digital finance arms race that we don’t even know about yet. The possibilities are endless and we’re just at the starting line.

Whoever leads this race and determines the outcome of its infrastructure and operation will most certainly gain a significant advantage and may have the possibility to spearhead many of the other innovations that come from this technology. The conversation of this tech competition between countries was even brought to the US Senate. China is far ahead in implementing real digital finance and currency programs as we speak, giving them a first-mover advantage in something as simple as experience.

The US and its regulatory bodies are still the gold standard and will ultimately set the pace and the rules. US-based innovators continue to roll out viable solutions, but which powerhouse will roll out the standard solutions first to control the space and our digital economic destiny?

#### The dollar’s resilient.

Dr. Daniel Drezner 17, Professor of International Politics at The Fletcher School of Law and Diplomacy at Tufts University, Ph.D. in Political Science from Stanford University, Nonresident Senior Fellow at the Brookings Institution, “Here’s The Thing About The Demise Of Dollar Diplomacy . . .”, Washington Post, 10/19/2017, https://www.washingtonpost.com/news/posteverything/wp/2017/10/19/heres-the-thing-about-the-demise-of-dollar-diplomacy/

Back in the depths of that crisis I wrote a small academic article arguing that the dollar wasn’t going anywhere as the world’s reserve currency: “Neither the opportunity nor the willingness to shift away from the dollar is particularly strong.” In essence, no coalition of countries possessed the economic opportunity or the geopolitical willingness to supplant the dollar.

As predictions go, that one has held up pretty well. Of course, the election of Donald Trump poses a new challenge to the system. One byproduct of an “America First” grand strategy is that allies may find fewer reasons to stick with the dollar beyond economic calculation. With the administration pursuing a mercantilist approach toward Japan, the Pacific Rim and NAFTA, it is worth asking whether they will continue to be so willing to hold dollars.

Don’t take my word for this. Barry Eichengreen, an economist, has literally written the book on the dollar’s post-2008 status. In his latest Project Syndicate column, Eichengreen observes the persistence of the dollar’s status. He also previews some new research about the role that geopolitical factors play in dollar holdings:

US diplomatic and military links encourage America’s allies to hold dollars. States with their own nuclear weapons hold fewer dollars than countries that depend on the US for their security needs. Being in a military alliance with a reserve-currency-issuing country boosts the share of the partner’s foreign-exchange reserves held in that currency by roughly 30 percentage points. The evidence thus suggests that the share of reserves held in dollars would fall appreciably in the absence of this effect. . . .

South Korea and Japan are thought to hold about 80% of their international reserves in dollars. One can imagine that the financial behavior of these and other countries would change dramatically, with adverse implications for the dollar’s exchange rate and US borrowing costs, were America’s close military alliances with its allies to fray.

Nor is it hard to imagine how this fraying could come about.

No, unfortunately it is not hard to imagine that. And this comes at the same time that some are speculating China will compel Middle Eastern oil exporters to start transacting in yuan rather than dollars.

So would a weakening of geopolitical ties threaten the dollar’s status? Sure, in theory. In practice, however, the TINA condition still holds: There is no alternative.

For countries to choose to leave the dollar, they have to prefer an alternative. At this moment the only two conceivable rivals remain the euro and the renminbi. The euro . . . um . . . has its issues. As for the renminbi, it’s tough for a government to promote a desirable reserve currency at the same time it clamps down with capital controls. Even if Japan or South Korea wants to diversify away from the dollar, it is doubtful that the diversification would go that far. And regardless of what central banks do, the private sector has excellent reasons to limit holdings of euro or renminbi.

So no, I’m not terribly worried about the status of the dollar. The geopolitical willingness to diversify might be increasing, but not by that much, and the economic opportunity for a switch has moved in the opposite direction over the past decade. Basically, it’s a wash.

But the hard-working staff here at Spoiler Alerts would like to close with a warning: When thinking about the U.S.-led order, pundits often point to the dollar’s role as an important sign that things have not changed all that much. My current research suggests, however, that if the current order starts to break down, the dollar will be the last pillar to fall. The reasons are variegated, but in essence, the reserve currency is the last pillar that an aspiring superpower should want to take on when challenging an existing hegemon. The switching costs are considerable, and the speed of the transition has the potential to be very rapid. Superpowers will only try to produce a reserve currency after they have a dominant position on all the other pillars in the global economy. There is a reason why the last vestige of British hegemony in the global economy was the pound sterling’s status.

So loyal readers should take comfort that the dollar is not going anywhere anytime soon. They should not take comfort, however, that the dollar’s status reflects persistence for other dimensions of American power.

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#### Too many thumpers - Major push on antitrust now

Cecilia Kang and David McCabe 1-20-22 (NY Times. Efforts to Rein In Big Tech May Be Running Out of Time. https://www.nytimes.com/2022/01/20/technology/big-tech-senate-bill.html)

Biden’s comments are an acknowledgement of two important factors: the immovable force that is Sen. Joe Manchin (D-WV) and the political reality that moderate Democrats who are about to embark on a particularly difficult re-election cycle need something—anything—to run on.

Lawmakers on Capitol Hill are readying a major push on bills aimed at restraining the power of the country’s biggest tech companies, as they see the window of opportunity closing quickly ahead of the midterm elections.

In a significant step forward, a Senate committee voted on Thursday to advance a bill that would prohibit companies like Amazon, Apple and Google from promoting their own products over those of competitors. Many House lawmakers are pressing a suite of antitrust bills that would make it easier to break up tech giants. And some are making last-ditch efforts to pass bills meant to strengthen privacy, protect children online, curb misinformation, restrain targeted advertising and regulate artificial intelligence and cryptocurrencies.

Most of the proposals before Congress are long shots. President Biden and top Democrats in Congress have said addressing the industry’s power is a high priority, but numerous other issues rank even higher on their list. These include passing voting rights legislation, correcting labor and supply chain constraints, enacting a social services package and steering the nation out of the Covid-19 pandemic.

#### Blockchain cases now thump and control the link perception – that’s Schrepel 22 – many cases are already on the docket, means the aff is grouped with those and it doesn’t require any new resources or tradeoffs.

#### Biden pushing antitrust measures now – the plan would just be folded into the existing push

Bordelon 2/4 (Brendan Bordelon, POLITICO Reporter, 2-4-2022, Under pressure, Biden backs antitrust push, POLITICO, https://www.politico.com/newsletters/morning-tech/2022/02/04/under-pressure-biden-backs-antitrust-push-00005579)

WHITE HOUSE GETS OFF THE FENCE — The Biden team came out in favor of the antitrust measures moving through both houses of Congress late Thursday — but how much public support and political capital the White House aims to spend on reining in giant tech companies remains an open question.

The move, coming hours after the Senate Judiciary Committee advanced a bill to break Apple and Google’s hold on app stores, marks the first time the White House has officially weighed in on the congressional antitrust push, Leah and POLITICO’s Adam Cancryn reported. While the White House held a “listening session” with supporters of tech antitrust reform two weeks ago, it offered a neutral readout afterward, saying only that officials “look forward to working with Congress to make bipartisan progress on the issue