# 1AC

## 1AC---Blockchain

### 1AC---Blockchain ADV

#### Contention 1 is BLOCKCHAIN.

#### Blockchain development is inevitable, but beyond the scope of antitrust---the narrow focus on the ‘firm’ is fundamentally inapplicable, creating an anticompetitive environment that’ll centralize applications and limit uptake.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 134-136

5 A WIN-WIN THEORY

The creation of a legal fiction around blockchain nuclei will benefit both antitrust and blockchain communities. By facilitating the enforcement of the rule of law, blockchain participants will indeed be able to enforce antitrust laws or be sanctioned when infringing them.

5.1 A Win for Antitrust

The theory of granularity helps create a legal fiction for public permissionless blockchains and private ones (whose governance is not vertical). Surely, other legal fictions will be proposed in the coming years. Regardless of its name, creating a legal fiction is a prerequisite for applying the rule of law to blockchain layer 1. The ability to do so is crucial.

First, the creation of a legal fiction ensures that blockchains do not escape antitrust enforcement for theoretical reasons. This is a prerequisite before discussing the technical barriers to enforce antitrust against illegal practices (see the following chapters). Second, assigning liability to the right entity ensures that whoever controls blockchains will have a strong(er) incentive to comply with legal requirements. The urge to play by the rules is always stronger when one knows that the rules could actually be enforced. As such, antitrust will not only protect actors that lie outside of blockchain ecosystems; it will also protect those inside the blockchain who cannot stop the anticompetitive practices. Antitrust will free blockchain layer 1 from these practices.

5.2 A Win for Blockchain

Creating a distinct legal fiction centered on blockchains’ nucleus will present an important step forward for related ecosystems. First, the creation of such fiction will attribute rights to blockchains’ nuclei. This will legitimize collaboration between blockchain participants in the nucleus that would otherwise have been prohibited. Indeed, I have explained that antitrust law defines a legal fiction (e.g., the firm) and then applies only to the effects that occur outside of it. Decisions that produce an effect outside of the blockchain nucleus will be submitted to antitrust law. In contrast, decisions taken by the nucleus whose effects are purely internal to that entity will be exempt from antitrust scrutiny.98

Second, creating a legal fiction will increase legal certainty pertaining to the application of antitrust law and regulation. Decades of research suggest that doing so will encourage investments,99 and will make entrepreneurs want to “embark” on the creation of innovative products and services.100 Blockchain communities say so themselves: regulatory issues and accompanying legal uncertainty are the most important reasons preventing greater investment and adoption of blockchain technology.101 The sooner a legal fiction is created, the better for the ecosystem. In its absence, one could imagine court decisions holding all blockchain participants liable for wrongdoings, even though most of them will not have the power to prevent these illegal practices.

Finally, the creation of a legal fiction will give the nucleus the right to institute legal actions and claim damages in cases of antitrust violation, whether caused by another nucleus or a non-blockchain entity. Going back to Christopher Stone’s writing, blockchain’s legal fictions will be able to institute legal actions in their name; courts will calculate injury to them, and relief will be run to their benefit. For example, one could imagine that a blockchain layer 1 (illegally) excluded from the market by another blockchain that engaged in predatory pricing could introduce a valid claim before the courts or antitrust agencies. In the following chapters, I will explain how this will play out when it comes to collusion and monopolization practices.

For all these reasons, creating an antitrust-related legal fiction will be invaluable for blockchain ecosystems and, ultimately, for decentralization. It will protect them from illegal practices that could hinder blockchain’s capacity to decentralize the economy. There is no doubt that centralized companies will multiply illegal behaviors toward blockchain ecosystems in the years to come, as we will see in the coming chapters. Being recognized as a legal entity will allow them to protect their interests and innovate toward decentralization.

6 CHAPTER SUMMARY AND BEYOND

In this chapter, 1 have used the theory of granularity to open the blockchain “black box.” First, I have discussed blockchain governance and shown how the influence of different participants neutralize their position. As no block- chain participant can control the blockchain by itself - and ensure its survival - I have explained that a group of participants may want to come together to achieve common goals. By doing so, they free themselves from other participants’ constraints and end up forming the blockchain nucleus.

The blockchain nucleus gives rise to an entity that should benefit from rights, but could also be held liable for illegal conducts. I have shown how this would work by analyzing relevant markets and market power, evaluating anticompetitive practices and assigning liability.

#### Anticompetitive exclusions and lack of legal certainty over the applicability of antitrust dry up investment and innovation, artificially consolidated digital ecosystems---applying antitrust solves.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 74-77

2 THE SPECTER OF NEUTRALIZATION

I hope to have convinced readers that antitrust law and blockchain contribute to similar, if not identical, objectives (i.e., preserving agents’ ability to act freely in the market, which entails the decentralization of decision-making processes).42 For that reason, one might expect that both communities would work hand in hand to achieve decentralization. And yet, despite pursuing a common goal, blockchain and antitrust may end up canceling each other out. Here’s why.

2.1 One Goal, Two Methods

Blockchain seeks the decentralization of decision making by eliminating intermediaries, while antitrust aims to achieve it by eliminating anticompetitive practices. They converge toward the same objective. That said, one should not be candid about how easy it will be to make them cooperate. First, the Sherman Act is concerned with trusts43 - hence the name “anti-trust”. Since there is no trustee in the sense of a third-party fiduciary in blockchain’s first layers, the target of antitrust laws is absent.44 Blockchain may thus undermine the *raison d'etre* of antitrust law, which will trigger epidermal reactions.

Furthermore, blockchain and antitrust may at times attack each other. Blockchain may be used to implement anticompetitive practices and be enforcement resistant, while antitrust may reinforce the role of intermediaries in the economy (by protecting them from different forms of anticompetitive exclusions) and label various blockchain behaviors as anticompetitive - regardless of the overall usefulness of these blockchain features.

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.45 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.

2.2 The (Long) Road Ahead

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.46 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.47

Second, antitrust agencies’ detection rate remains low, meaning that illegal behavior often goes unpunished.48 And enforcement is costly, which makes it impossible to pursue all potentially illegal practices. This is particularly problematic 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,49 and when jurisdictions are mutually unfriendly and do not enforce foreign laws.50 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,51 including in Europe.52

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. 1 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.

#### Averting the consolidation the blockchain allows scalable transaction validation.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 271-273

2 BLOCKCHAIN INTERNAL FACTORS

The evolution of blockchain also depends on internal balances in terms of design and governance. Overall, choices that will be made within each blockchain will prove important for their evolution. As I show, it all comes down to human interactions.

2.1 The Trifecta: Intra-blockchain Evolution

A blockchain trilemma has emerged in the literature over the last several years. It can be summed up as follows: ensuring blockchain’s decentralization, scal- ability and security entails tradeoffs, at least in the short term. Although this makes sense on a technical level, it does not capture the entirety of our subject. Let us take a closer look. I have discussed decentralization at length through- out this book. It is blockchain’s central feature, in terms of both architecture and philosophy. “Scalability” refers to the ability to validate large volumes of transactions rapidly. Last, blockchain’s security hinges upon its ability to maintain integrity: that only desirable transactions take place - for example, by preventing double spending.42

To a certain extent, we have seen together that the mechanisms that ensure decentralization at different blockchain layers may conflict with security.43 This is what Awemany’s story in Chapter 1 revealed. Decentralization implies the distribution of power, limiting the ability to act unilaterally in case of an emergency. At the same time, decentralization can also affect the scalability of blockchain: Proof of Work is decentralized by nature, but it prevents the rapid validation of large transaction numbers. Conversely, a private blockchain can restrict access to the ledger or certain functions, raising security and scalability issues.44

In the long run, however, these three objectives are mutually reinforcing. The more a blockchain is decentralized, the more it stands out from the centralized platforms and services that readers know only too well. By differentiating themselves, blockchains attract users by offering a different value proposition. In turn, this generates scalability. The same goes for security, as the more participants use a public blockchain, the harder it becomes to alter the registry or perform a 51 percent attack. The blockchain trilemma is thus useful for thinking about what needs to be done, but it cannot provide a coherent analytical framework in the long term. It will become less relevant with technical advances, to the point where some blockchains will maximize these three objectives. Those who manage to do so will prosper.

#### Scaling blockchain unlocks its use for energy, waste, and supply chain sustainability---extinction.

Richard H. deVries 20, Managing Director of Geber Consulting, BA from University of Waterloo in Canada, MBA from National Cheng Chi University (NCCU), Degree in AI (Artificial Intelligence), Machine Learning, and Robotics from MIT Sloan, “How Blockchain Will Save The World”, Geber Brand Consulting, 12/3/2020, https://www.geberconsulting.com/blog/how-blockchain-will-save-the-world

Two years ago nobody talked about blockchain. Now the distributed ledger technology behind cryptocurrencies like bitcoin is suddenly everywhere.

Enthusiastic experts predict that in the coming 10 years, blockchain will change the way we do everything, from financial markets to health records to supply chain management, and so much more. It's near impossible to name all the applications for the new technologies, but here are a few that will contribute to making our world a better place (or even save the planet).

Energy

Most visible for average users will be the impact of blockchain on the energy sector. The power grids of today are usually centralized oligopolies dependent on a very small selection of power sources (i.e. a few nuclear plants, augmented by oil and gas).

That means long distribution lines, bad management of demand, and susceptibility to power outages during earthquakes and other natural disasters.

A peer-to-peer blockchain-based energy system would reduce the need to transmit electricity over long distances. It will certainly reduce the need to store energy in inefficient ways, which means fewer batteries, for example, which are expensive and need a lot of raw materials whose extraction often causes massive pollution. Imagine if every house had a solar panel and a wind turbine, or produced electricity from new smart materials on the outer walls.

Add road surfaces that produce kinetic or solar energy, and add in all the existing infrastructure like nuclear plants, oil or coal. Now imagine every one of these sources could trade with every other source, all managed automatically by a computer system, with unfalsifiable records based on blockchain. And everyone gets paid for it into their digital wallet. This is the future of energy.

Waste Recycling

Current systems for recycling are often cumbersome and don't give enough incentives to participate. Even the best intentions fall foul to human greed and laziness.

Here then is the future of recycling: you identify yourself with your smartphone at any recycling station and deposit your empty bottles (or batteries etc.). The system scans what you deposit and credits your electronic wallet.

If done right, this system could enable users in countries without local recycling industries to get paid the same way as users in locations with large recycling operations.

Companies could set up recycling plants and literally collect garbage from anywhere in the world. It would make it easy to transparently track data like volume, cost, shipping data, and profit, and to evaluate the impact of each location, company, or individual participating in the program.

Think one step further and the recycling containers could be fitted with solar drone technology and fly themselves to the recycling center when full.

Supply Chain Management

The way we transport goods around the world is wasteful and damages the environment. Industry 4.0 is bringing us a revolution of already connected devices; 3D printing means more decentralized manufacturing in much smaller batches.

Blockchains can be used to track products from the manufacturer to the shelf and help prevent waste, inefficiency, fraud, and unethical practices by making supply chains more transparent.

They improve shipping ways, volumes, avoid empty shipments and will thus allow for fewer ships and trucks. Combined with drones and solar-powered airships we could even see pollutant-free solar shipments of individual consignments over long distances, secured, tracked and paid for through blockchain technology.

Or think about this: a blockchain enabled 3D-printer as a public service, secured, tracked, and monetized through blockchain.

The food industry is forging ahead hear with the tracking of origin and transportation paths of food.

Environmental Protection

From waste and transportation, it is an easy jump to the overall enforcement of environmental protection. Blockchain is ideally suited to manage records and incentives.

In can be difficult to track the real impact of environmental protection plans, agreements, or even international treaties. Very often incentives are misaligned, or corporate interests and even criminal elements prevent successful implementation.

Blockchain could discourage stakeholders from reneging on their commitments, misreporting progress, or giving in to pressure from nefarious players, because the technology would allow the reliable tracking of important environmental data.

After all, data in the public ledger of the blockchain is transparent and traceable forever. Environmental protection is at its core a contractual problem. Just like blockchain will revolutionize the storage and manipulation of legal records, it will reduce or eliminate fraud and manipulation of environmental schemes.

Development programs

Like environmental protection, development programs are contracts between remote parties that need to be enforced.

When you donate to a charity, non-profit, development program or similar entity, you hardly ever know what really happens with your money. Bureaucracy, corruption, and inefficiency are still common in the charity space. Blockchain technology can ensure that money intended to be a reward for conservation, or a payment to a specific cause, does not disappear into unintended pockets through bureaucratic labyrinths.

Blockchain-based money could even be released automatically to the correct parties in response to meeting specific environmental targets. This is particularly relevant in countries without modern banking structures. In particular, there are several schemes under consideration for the tracking of water usage in very dry areas of the planet.

Carbon Tax

In the current system, the environmental impact of each product is difficult to determine, and its carbon footprint is not factored into the price.

This means that there is little incentive for consumers to buy products with a low carbon footprint, and little incentive for companies to sell such products.

Tracking the carbon footprint of each product using the blockchain would protect this data from tampering, and it can be used to determine the amount of carbon tax to be charged on at the point of sale. If a product with a big carbon footprint is more expensive to buy, this would encourage buyers to buy products that are more environmentally friendly, and would therefore encourage companies to restructure their supply chains to meet the demand for such products.

Such a blockchain-based reputation system would compute a score for each company and product. This would make manufacturing more transparent, and discourage wasteful and environmentally unfriendly practices.

You could automatically see (e.g. by scanning a barcode on a product), if it was made by an environmentally sound low-carbon facility, or a wasteful polluter.

Access to credit

Just as it tracks financial payments and all the data mentioned above, blockchains could be configured to manage access to credit.

This would enable millions of people to escape poverty, by giving them easy access to small amounts of money and start their own business. Unlike the micro-finance banking model, such a credit blockchain would be entirely transparent and thus safe from abuse.

Summary

In short, blockchain technology allows the management of incentives.

Consumers, companies, and governments would immediately see the direct effects of their actions on the planet. The blockchain can be used to transparently track a variety of data like the carbon footprint of each product, the greenhouse gas or waste emissions of a factory, or a company's overall history of compliance to environmental standards.

Companies and individuals can be incentivized to act in an environmentally sustainable way through the availability of information, tokenized credits being issued for taking certain actions, or blockchain-based reputation systems.

There are many hurdles to overcome. We still do not know if the blockchain is really as safe and unhackable as promised. As a cybersecurity consultant I spoke to for this article said: "sooner or later, everything will be hacked."

There are still doubts about the usability of blockchain for micro-transaction, due to the time proof-of-work takes, and the energy cost associated with computing.

The final hurdle is the willingness of governments to change, and the willingness of participants to live in such a transparent world.

But I believe that managing incentives on the micro-level with blockchain could completely change the drivers of our economy, and benefit not only us but the future generations living on our planet.

#### Cryptocurrency reach a wide rollout---that builds resilience to survive inevitable existential filters.

Alex McShane 21, Writer and Head of Video for Bitcoin Magazine, BA from the University of Iowa, Degree from the University College Dublin, Degree from Kirkwood Community College, “Bitcoin and Existential Risk”, Bitcoin Magazine, 9/5/2021, https://bitcoinmagazine.com/culture/bitcoin-and-existential-risk-alex-mcshane

TL;DR - An existential risk is the possibility of an event or series of events that could drastically curtail humanity’s potential. A hypothetical global catastrophe could be anthropogenic or non-anthropogenic and internal or external in nature. The adoption of Bitcoin will better position us to address these risks as a society.

EXTERNAL NON-ANTHROPOGENIC

A catastrophic collision with an astronomical object, such as an asteroid impact would be an external non-anthropogenic risk. This has already occurred here several times. During the Permian Triassic period (ending 250 million years ago) an astronomical impact killed 90 percent of the species on Earth. It took tens of millions of years for life on Earth to repopulate and Earth’s intelligence potential to recover.

One interesting external non-anthropogenic risk is Earth’s reflected light, which could be measured by an external intelligence who then come to extinguish us. (The topic of our own signal bringing about this death by misadventure is discussed further below.)

What does this have to do with Bitcoin?

Generally, hard money facilitates greater innovation and technological process. At this point one might argue that if we do not migrate to some degree from Earth as a species, and are subsequently wiped out by an astronomical object impact or a super-volcanic event, the risk becomes anthropogenic in nature. We are a centralized species on a grand scale, and at this point one could say we have through consensus chosen to remain vulnerable to a single vector of attack by staying here.

Bitcoin is not only the hardest money known to man, it is the most responsible from this standpoint. Bitcoin as it currently operates is currency that can provide a monetary framework on which humans can achieve greater capital growth, collaboration, resource allocation, and therefore technological progress. Because the terminal supply of Bitcoin is capped, we can store value in it indefinitely as a society.

66 Million years ago the Cretaceous-Paleogene Extinction Event extinguished the life and intelligence potential of the non-avian dinosaurs. This series of events was external, and broadly non-anthropogenic in the sense that no form of life on Earth at the time contributed to its own demise, but more specifically, at the time of those astronomical impacts the first humans hadn’t split from chimpanzee lineages. This split is thought to have occurred between between 4 and 8 million years ago.

An important distinction between astronomical impacts or super-volcanic events of the past and such events if they were to happen today is that one could argue that our intelligence potential is now mature enough to tackle certain of the external existential risks. Today, the risk posed by an asteroid impact or something similar would still be external in its origin, but at what point does the burden of responsibility to migrate off of the planet fall upon our population? We can surely solve for some external existential risks, and in any case, no one is going to do it for us. You could say that failing to collectively pursue a solution when technically we could have would recategorize a civilization-extinguishing asteroid impact as an external but anthropogenic risk.

At what point do innovation dampening authoritarian states and their mandated broken money cause society to stall at a local optimum? Surely the government has already caused this. It’s only a matter of time before another object strikes the Earth with devastating consequence. I would argue it is irresponsible to continue life here with government money. Government money is an existential risk. Bitcoin is not only a solution, it is a societal responsibility.

INTERNAL ANTHROPOGENIC

Nuclear war is one example of an internal anthropogenic risk. That is, should nuclear war arise, it would be both self destructive, and relatively self contained on a cosmic scale. It follows that biological warfare is an internal anthropogenic risk, the reality of which we as a species can surely understand now. If I were to hazard a guess I would say virtual emergencies and cyber pandemics are next. These self constructed catastrophes are the government’s misguided attempts at proof of work. This is a topic for another time. Do not surrender your ability to think and speak freely.

The second law of thermodynamics can summed thus, processes that involve the transfer or conversion of heat energy are irreversible. The law indicates we have not observed a spontaneous transfer of energy from cold to hot. Another way to think of this is that there is no such thing as cold, only lesser degrees of hot. Nothing cannot transfer. So broadly, within a closed system, the second law of thermodynamics would indicate that all differences tend to level out.

So what has this got to do with Bitcoin?

Well firstly, all hardware is subject to entropy. The distributed nature of the blockchain increases the probability that it will survive centralized entropy. At Bitcoin’s inception, imagine a failure because Satoshi’s computer randomly crashed. Distributed networks are inherently hedged against this particular centralized form of existential risk.

The second law of thermodynamics also suggests that on a grander scale, relatively isolated (centralized) systems will degenerate more and more into disordered states. Proof of work, and network growth are two ways Bitcoin fights against falling into disrepair.

Bitcoin uses proof of work to stave off entropy. The system cannot stay dormant. It must continue to use proof of work to advance the state of the chain, and to fight entropy to secure the monetary value all of the users have stored in the network. The U.S. dollar, as many have pointed out, relies on proof of war, or distributed political energies to maintain dominance. Its methodology can be described as haphazard at best.

INTERNAL NON-ANTHROPOGENIC

One internal non-anthropogenic risk is that of a super-volcanic eruption, provided it wasn’t humans who brought about the eruption. Just like with external non-anthropogenic risks, Bitcoin alone cannot prevent them, but it can help humans prepare for them such that we may survive these relatively small intelligence filters the universe throws our way.

Bitcoin allows for fundamental capital accumulation and human innovation, and promotes collaboration to such a degree that we will find an increased collective problem solving power as humans the further Bitcoin adoption spreads. It is worth mentioning that Bitcoin also maintains and appreciates wealth to such a degree that often those of us to chose to live our lives on a Bitcoin standard will experience relatively greater freedoms, and vastly greater amounts of free time than our peers who chose to continue their lives on a fiat standard, and are perpetually working to outpace their chronic debt. Many Bitcoiners will likely forego that newfound free time to work and continue to provide value to others in whatever area interests them, because Bitcoin incentivizes the collaborative accumulation of capital but also the responsible reallocation of it.

EXTERNAL ANTHROPOGENIC

An external anthropogenic risk has the least probability of occurring. This is a problem of reach. Imagine human intelligence being sent into the cosmos and signaling or generally causing an external intelligence or astronomical object to come back to extinguish us. This is a most improbable extinction by misadventure.

The probability that we send messages of consequence into the cosmos that in turn cause some other far-flung intelligence, with knowledge enough to reach us, to come and bring about our own destruction is next to zero, but it isn’t zero.

I would posit that the probability increases every day that Bitcoin survives, with each person that chooses to hold Bitcoin over fiat, because on a fiat standard we are again, stuck at a local optimum at best, and each day the global monetary system devolves further into chaos. The fiat world may continue to be habitable chaos, but our technological progress and our greatest capacity for innovation cannot be achieved on a fiat standard.

A Bitcoin standard is not only our current best bet, it is the only monetary vehicle that will take us from here, or enable us to build technology that can effectively communicate with places in the universe where other intelligence has emerged. The other reason this fatal miscommunication is unlikely to occur is that once through a Bitcoin standard we have manage to build a society that can effectively reach and communicate at greater depths of the cosmos we will at that time have already become a multi-planetary, if not transitory, if not multi-solar system species. The topic of Bitcoin in space and planetary interoperability will be discussed in a later essay.

The most distant human made object from the earth is the Voyager 1, which is over 13 billion miles away. (For perspective, Apha Centuri, the nearest star system to Earth, is 25 trillion miles away.) Human radio signals have announced our presence and our intelligence to the cosmos since around 1900. The first human radio signals have all ready traveled 114 light years, that is 681,920,540,000,000 miles. Although the reach of our radio signals is very great, the probability of us being heard and subsequently extinguished is negligible. External anthropogenic risks are the least of our concerns at the moment.

As Bitcoin adoption grows, it serves to promote advances in artificial intelligence and nanotechnology. External anthropogenic risks will become more relevant to human intelligence at a much later time. External non-anthropogenic risks are similarly out of our hands for the time being. That is, at the moment there is nothing we can do to prevent the Sun from becoming a red giant star and subsuming the Earth.

But we do already have the monetary technology upon which to engineer solutions to some of these problems. We have the potential as humans to prevent internal global catastrophes, both those set on by us and not. Survival and longevity is arguably our greatest task as a species. Adopting Bitcoin, and protecting this network is proceeding with diligence and a long eye toward the future in all of our political and scientific affairs. The existential risks of living are great, though it is human nature for our ambitions to out pace our current abilities. The only evidence of life is change. To change is to exit fiat currency, it is to use Bitcoin instead.

#### Decentralized and competitive blockchain’s vital to IoT effectiveness.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 269-270

1.2 Blockchain and Other Technologies (Collaboration)

1.2.1 Blockchain and the Internet of Things

Technologies tend to accelerate each other,30 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.31 In the subsequent developments, I will limit myself to discussing the IoT and AI, as blockchains may serve as an infrastructure for these two technologies, therefore shaping their use and developments.

To put it simply, the IoT 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 IoT devices in circulation today and this number will likely triple by 2025.32 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 2019.33

Blockchains could boost IoT. First, blockchains could be used as the infrastructure layer on top of which IoT 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 IoT devices to interact with each other on specified terms and ensure that they stick to them.34 Most of all, blockchain technology provides IoT 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 IoT solutions and this number will likely grow in the future.35

If blockchain technology does indeed become the infrastructure upon which most IoT 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 IoT 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.

#### IoT prevents pollinator collapse---extinction.

Tash Bandeira 20, Reporter at Ubibots, an Engineering Services Firm, “Saving the Bees with IoT”, Ubidots, 7/15/2020, https://ubidots.com/blog/saving-the-bees-with-iot/

Sometime in late 2006, beekeepers across North America started seeing drastically high losses among their western honey bee colonies. Less dramatic disappearances were also observed in Europe and around the world, causing significant losses in agricultural crops that depend on bee pollination to survive.

Now known as Colony Collapse Disorder (CCD), these sudden losses occur when most of a colony’s worker bees leave their queen and plenty of honey and pollen reserves behind. With few dead bees found nearby, the phenomena didn’t correspond to any previously known causes of bee death.

Without worker bees, hives die out and the repercussions go far beyond honey shortages. We see significant agricultural losses and accompanying economic effects worldwide. Approximately 75% of our food supply depends directly on honey bee pollination, which corresponds to a global worth of hundreds of billions of dollars. And with no end in sight for CCD, there’s a lot at stake in the bee crisis.

Scientists have yet to settle on a single cause for the decline - attributing it to a combination of pesticides, disease, nutritional deficiencies, and commercial beekeeping itself - so it’s unlikely there’ll be a simple resolution. The EU voted to ban the use of neonicotinoid pesticides in 2018 but in lieu of global policy change, innovative IoT solutions have already shown serious promise for helping bees survive.

The Internet of Stings

Being able to know when a colony is in trouble and act quickly is imperative to beekeeping. Traditionally, this has meant regular check-ins with the hive, a practice that comes with some disruption to bee life. But with IoT solutions that incorporate wireless in-hive sensors, beekeepers can better keep tabs on their colonies in real time and from a distance.

At the Polytech Sorbonne University in Paris, a student developed a precision beekeeping box that can take temperature, humidity and weight readings, as well as detect the presence of a queen bee. With the data displayed on their Ubidots dashboard, beekeepers can then take steps to decrease resource consumption and increase productivity.

In Costa Rica, college students developed the Ubidots-powered Internet De Las Abejas, a project aimed at controlling varroa mites. Varroas stick to bees, suck their hemolinph, and spread the diseases they carry - posing a major threat to honey bee health. In better controlling them, beekeepers can improve the quality of life of their hives, while also increasing honey production and pollen mobility.

Another approach, developed by researchers in Manchester, is the tagging of bees with RFID chips to track their movements. With location data, beekeepers can follow their comings and goings to better understand and predict their behavior. Grad students in Canada have also been studying the use of sensor data to listen in on beehives and detect communication patterns in the buzz.

But easily the biggest buzz in IoT-enabled solutions is the development of robot bees, or pollination drones. Straight out of a “Black Mirror” episode, RoboBees were introduced by Harvard University researchers in 2013. While their first iterations were limited to flying and hovering, they can now swim underwater and stick to various surfaces. Robotic bees of the future could potentially work farms like their natural counterparts, pollinating crops and helping offset population losses.

No matter what form our ‘IoBees’ solutions take, the collecting and sharing of data will give us profound insights into their lives. Researchers and IoT Entrepreneurs all over the world are realizing the potential of aggregating this data into IoT dashboards, creating IoT solutions that can be commercially offered to either the farmers or research institutions.

Such array of projects aimed at tackling the bee crisis shows the powerful potential for IoT to help save the bees that feed our world.

#### Federal antitrust signals a balanced, light-touch approach that reinvigorates U.S. global leadership on blockchain.

Matt Sandgren 21, Former Staff Director of the Senate Republican High-Tech Task Force, Former Senior Counsel on the Senate Judiciary Committee, Final Chief of Staff to Senator Orrin G. Hatch, Executive Director of the Orrin G. Hatch Foundation, “How New Regulations from Washington Could Lead to a Blockchain Brain Drain”, The Hill, 10/27/2021, https://thehill.com/blogs/congress-blog/technology/578834-how-new-regulations-from-washington-could-lead-to-a-blockchain

The internet is what it is today—with its ability to connect people across countries, time zones, and cultures—thanks to the friendly regulatory climate it was born into. Sadly, the regulatory climate of 2021 is far less welcoming to disruptive technologies. This is bad news for the future of U.S. innovation and the emerging blockchain industry.

Whether Washington takes a heavy-handed or a light-touch approach to crypto regulation over the next few months could make a multitrillion-dollar difference over the next few years. To understand how much we stand to lose as a result of bad blockchain policy, it’s first important to understand just how much we have gained as a result of good internet policy in the ’90s.

It’s easy to forget that the success of today’s internet behemoths was anything but certain in the early years of the tech boom. During the Dotcom Bubble of the late '90s, for example, many companies were dismissed as scams (and some of them were). But even the most promising companies were still seen as speculative bets, and their stock prices were subject to extreme volatility.

It’s also easy to forget that the very concept of the internet was foreign to most people in its early years. By today’s standards, it was slow, overly complex, and difficult to use by anyone without a strong technical background. Many dismissed the internet as a fad, including Nobel Prize-winning economist Paul Krugman, who made this prediction in 1998: “By 2005 or so, it will become clear that the internet’s impact on the economy has been no greater than the fax machine’s.”

Noted.

“A scam,” “a fad,” “a bubble,” “overly complex,” “too volatile.” Does any of this sound familiar? History doesn’t rhyme so much as it plagiarizes. And it’s impossible to ignore that the crypto skeptics of today use the same vocabulary as the internet naysayers of yesteryear.

Now imagine if U.S. policymakers had heeded the words of the internet’s critics in the mid-to-late ’90s. Imagine if they had cracked down on e-commerce, digital publishing, and fledgling social media platforms to preserve the old way of doing things. Imagine if they had shaped regulations to stem the free flow of physical goods, ideas, and information made possible by the internet.

The American people would have missed out on trillions of dollars in economic opportunity—and the bounties of the digital age would have gone to countries with more tech-friendly policies.

This is the risk we face today.

We find ourselves at the dawn of a new age of American innovation. Like the internet before it, crypto has the potential to redefine everything we know about how business, politics, media, finance, and even relationships work. But if legislators give in to crypto’s critics by taking a draconian approach to regulation, the U.S. will fail to reap the economic rewards of this world-changing technology—and entrepreneurs will flee to friendlier shores.

Even now, the stage is being set for a blockchain brain drain. Take the Senate-passed infrastructure bill, which includes a provision that would define crypto miners, validators, and even software developers as “brokers,” requiring them to report information to the IRS about anonymous blockchain participants that they would have no way of obtaining. In effect, this provision would kill the nascent DeFi (decentralized finance) industry and make it almost impossible for everyday Americans to invest in new cryptocurrencies. In other words, this latest move sends a hostile message to blockchain advocates: “We don’t want you here.”

At best, the Senate proposal belies a gross misunderstanding of how cryptocurrencies work; at worst, it exposes regulatory capture and the willingness of legislators to give in to special interests.

Sadly, the threat of bad regulation doesn’t end there. SEC Chair Gary Gensler has expressed his belief that many digital assets are not commodities but securities and should be regulated as such. Following this same logic, he’s signaled his intent to crack down on the use of stable coins—cryptocurrencies pegged to the value of the U.S. dollar. Americans are using stable coins to earn 4 to 8 percent APY on their savings through various lending programs. But the SEC wants to put a stop to these lending programs, ostensibly “to protect investors.” (What’s unclear is which government agency will protect investors from the unlimited money printing that is devaluing their dollar savings at a rate of 5.3 percent per year.)

Washington has gotten off on the wrong foot when it comes to crypto. But it’s not too late to correct course.

Regulation of crypto is not necessarily a bad thing. In fact, it’s a key step on the path to mainstream adoption. It’s critical, however, that policymakers shape regulation in a way that minimizes the risks of this new technology without eliminating its benefits. Congress found a way to do this with the internet in the ’90s. Section 230—while far from perfect and in need of reform today—paved the way for a flexible regulatory environment that allowed for many online companies to thrive. In the famous words of Jeff Kosseff, Section 230 contains “the 26 words that created the internet” (and, it’s worth adding, “trillions of dollars in economic wealth”).

Indeed, regulatory clarity is key to extracting maximum value from the emerging crypto economy, whether that value comes from DeFi protocols, decentralized forms of social media, tokenized assets, NFTs, or some other application of blockchain technology that we can’t even imagine today.

As policymakers seek to find the right balance on regulation, they should remember that the U.S. didn’t become the tech capital of the world by choking innovators with red tape. The U.S. became what it is today by taking a prudential approach to regulation—one that enabled the entrepreneurial spirit.

This is the same entrepreneurial spirit that inspired the private sector technological advances that made the Apollo moon landing possible. It’s the same spirit that brought about smartphones millions of times more powerful than the Apollo 11 guidance computers. And it’s the same spirit that has motivated a group of visionaries to push the boundaries of the digital frontier through blockchain technology.

Will Washington’s leaders stifle that spirit to the detriment of our economy and our reputation as a global leader in innovation? Or will they nourish that spirit to usher in the next chapter of the digital revolution?

Let’s hope they choose the latter.

#### That allows international standard-setting that leverages it for public benefits internationally.

Lou Kerner 18, Head Crypto Analyst at Quantum Economics, Partner at Blockchain Coinvestors Acquition Corp, MBA from the Stanford University Graduate School of Business, BA in Economics from UCLA, “A Call For U.S. Leadership in Crypto”, Medium, 7/6/2018, https://loukerner.medium.com/a-call-for-u-s-leadership-in-crypto-4b74d6deb4ad

Despite the striking fact that most of the programmers the U.S. has ever known are alive and working today, despite the fact that the U.S.’s technical capabilities are growing exponentially, despite that, the vast stretches of the unknown and the unanswered and the unfinished still far outstrip our collective comprehension.

No man can fully grasp how far and how fast we have come, but condense, if you will, the 50,000 years of man’s recorded history in a time span of but a half-century. Stated in these terms, we know little about the first 40 years, except at the end of them man had learned to use the skins of animals to cover them. Then 10 years ago, under this standard, man emerged from his caves to construct other kinds of shelter. Five years ago man learned to write and use a cart with wheels. The printing press came this year, and two months ago, the steam engine provided a new source of power. Last month electric lights and telephones and automobiles and airplanes became available. Only last week did we develop penicillin and television. Two days ago the internet browser was introduced. And earlier today, Satoshi wrote his white paper.

This is a breathtaking pace, and such a pace cannot help but create new ills as it dispels old, new ignorance, new problems. Now, when refer to “Crypto”, I mean the four technologies (blockchain, cryptocurrency, smart contracts, and zero knowledge proof), which collectively enable decentralization, all fueled by community. Surely these technologies promise disruption and high reward.

So it is not surprising that when it comes to Crypto our government would have us stay where we are a little longer to rest, to wait. But this city of New York, and this country of the United States was not built by those who waited and rested and wished to look behind them. Technological breakthroughs are driven by those who move forward — and we will continue to do so.

If this capsule history of our progress teaches us anything, it is that man, in his quest for knowledge and progress, is determined and cannot be deterred. The development of Crypto will go ahead, whether the U.S. regulators joins in or not. And I believe Crypto is one of the great adventures of all time, and no nation which expects to lead the world in technology can expect to lead while staying behind in the development of Crypto.

Our forefathers made certain that the U.S. rode the first waves of the industrial revolutions, the first waves of modern invention, and the first wave of the internet. This generation does not intend to founder in the backwash of the coming age of Crypto. We mean to be a part of it — we mean to lead it. For the eyes of the world will increasingly look at Bitcoin and blockchain and beyond. And those of us in Crypto are working to see it governed by a banner of freedom. We have vowed that we shall not see Crypto filled with scammers, but with scalable protocols that make the world a better place.

Yet the promise of Crypto can best be fulfilled if we in this Nation are there, and leading the way. In short, our leadership in technology, our hopes for a better future, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world’s leading Crypto nation.

We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and used for the progress of all people. For Crypto, like all of technology, has no conscience of its own. Whether it will become a force for good or ill depends on [hu]man[s], and only if the United States occupies a position of pre-eminence can we help decide how this new technology evolves. I do not say that we should or will go unregulated against the misuse of Crypto any more than we go unprotected against the hostile use of cyber warfare. But I do say that Crypto can be developed and mastered without repeating the mistakes of past regulatory overreach.

Crypto’s development deserves the best of all [hu]mankind and its opportunity for community. But why, some say, Crypto? Why choose this as our next computing platform? And they may well ask why climb the highest mountain? Why, 75 years ago, fly the Atlantic?

We choose to to develop Crypto, and do the other things, not because they are easy, but because they are hard, because the goal of decentralization will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win.

It is for these reasons that I’m concerned by the inaction of our government to provide greater regulatory clarity. In the last months, we’ve seen progress in scaling like the Lightning Network. We’ve seen securities infrastructure like Templum and OpenFinance and Polymath being built.

To be sure, from a regulatory standpoint, we are behind. But we should not stay behind. This year, we should make up and move ahead. The growth of our science and education will be enriched by new knowledge of Crypto, by new decentralized governance mechanisms, by new token economics.

The Crypto community itself, while still in its infancy, has already created a great number of new companies, and tens of thousands of new jobs. Crypto is generating new demands in investment and skilled personnel, and New York and the U.S. can share greatly in this growth.

To be sure, all this comes with uncertainty of the role of government and fiat in the future. I recognize that the belief in Crypto’s potential is in some measure an act of faith , for we do not now know what benefits await us.

But I believe that we can develop a decentralized currency that can be used as a means of exchange. I believe we can leverage blockchain technology to provide identity for the 23 million children on this planet without identity papers. I believe we can use these technologies for voting purposes, and ensuring our elected officials follow through on their promises.

However, if we’re going to do all those things, and countless other positive things for mankind, then we must pass accommodating regulations. I‘m encouraged that New York and the United States are playing a big part in the development of Crypto,. With more regulatory clarity, we can solidify our leading position in Crypto, the greatest adventure on which [hu]man[ity] has ever embarked.

#### Globally collaborative blockchains prevent nuclear war from miscalc, accidents, and arms racing AND build global co-op, stopping existential threats.

Dr. Lyndon Burford 21, PhD in Politics and International Relations from the University of Auckland, Visiting Research Associate at the Centre for Science and Security Studies at King’s College London, Member of the New Technologies for Peace Working Group, a Part of the Vatican’s COVID-19 Commission, “Could Blockchain Technology Help Advance Nuclear Disarmament?”, Medium International Affairs Blog, 2/19/2021, https://medium.com/international-affairs-blog/could-blockchain-technology-help-advance-nuclear-disarmament-6efaab35e277

New and maturing technologies are often seen as possible drivers of conflict, not least in the context of rising nuclear risks. In 2019, for example, the UK House of Lords Select Committee on International Relations concluded, “The risk of the use of nuclear weapons has increased, in the context of rising inter-state competition, a more multipolar world, and the development of new capabilities and technologies.” In a recent policy report published by the Centre for Science and Security Studies at King’s College London, I explored the flipside of that coin. The trust machine: blockchain in nuclear disarmament and arms control verification looks at how blockchain technology could help to reduce nuclear risks, by strengthening systems to verify the dismantlement of nuclear warheads.

The ‘trust machine’

Blockchain is best known as the technology that underpins the cryptocurrency Bitcoin, but it already has a wide range of alternative uses in areas such as medicine, transport, manufacturing, finance and governance. During the COVID-19 crisis, blockchain was used to produce a cheap, reliable solution for contact tracing. In Syria, blockchain is being used to create a permanent record of potential war crimes, increasing the security and integrity of the data and strengthening its admissibility as evidence in future war crimes prosecutions.

Contests of legitimacy and value: the Treaty on the Prohibition of Nuclear Weapons and the logic of…

Blockchain is a de-centralized, digital record-keeping technology. It combines cryptography and social/economic incentives to build a shared, permanent, and virtually un-hackable record of events, without needing to trust a third party authority to manage the data. Unlike Bitcoin, which is a ‘public’ network that allows anyone to interact with it, a private blockchain creates a ‘permissioned’ network of participants who collectively store and manage data in a way that allows them to maintain extremely high confidence in the integrity of the data. The result is a shared, digital record of events — a blockchain — that is practically immutable, establishing a single, collective, and irrefutable ‘truth’ about the nature and sequence of events within the network. In a post-truth world, blockchain thus offers an invaluable technical foundation for cooperation among parties that have a limited basis to trust each other, leading to its nickname, ‘the trust machine’.

Blockchain as a disarmament mechanism

At present, extremely low levels of international trust hamper efforts to advance nuclear disarmament. The ongoing development of new nuclear weapons, warheads and increasingly capable ballistic missile defences are undermining the theories and practices of deterrence, and point to the resurgence of a spiral of mistrust that characterized the Cold War nuclear arms race. Developing robust, multilateral verification tools and processes could help to mitigate the trust deficit. It would enable countries to pursue their shared interests in nuclear disarmament — reduced costs, less chance of escalation and nuclear use, greater scope to cooperate on global threats like climate change and pandemics — by increasing confidence that other countries are fulfilling their disarmament commitments in good faith. One way to strengthen verification would be to use a private blockchain to manage and store the data that a disarmament process creates.

In a verified disarmament process, parties need to track and record things like the status and movements of individual inspectors and weapon parts, and the status and material holdings of different facilities. These activities create large amounts of data that need to be stored in a secure, permanent and transparent manner that also allows for its easy retrieval by permissioned actors. The core attributes of blockchain correspond closely to these requirements. The technology would allow parties to maintain very high confidence in the immutability of verification data, creating a strong technical foundation for future cooperation from a shared, trusted baseline.

International collaborations like the 25-country International Partnership for Nuclear Disarmament Verification and the Quad Nuclear Verification Partnership (made up of Norway, Sweden, the United Kingdom and the United States) are already exploring how nuclear-armed and non-nuclear-armed states can cooperate in verifying the dismantlement of nuclear warheads without revealing sensitive information. Blockchain could complement their approach, enabling countries to create a permanent, immutable record of verification data.

Nuclear weapons threaten the survival of humanity and divert tens of billions of dollars each year away from efforts to address other collective security challenges like mitigating and adapting to climate change and responding to pandemics like COVID-19. As such, we all share an interest in disarmament processes that can reduce the likelihood of deliberate or accidental nuclear explosions and free up urgently needed resources for other global security priorities. We owe it to ourselves and to future generations to consider all options that could help to advance nuclear disarmament. In addressing the regular obstacle of distrust between the nuclear powers, blockchain is one technological option that we should be exploring.

#### Blockchain ensures a credible verification system---that restores the NPT AND momentum for disarm.

Michal Onderco & Madeline Zutt 21, Associate Professor, International Relations, Erasmus University Rotterdam; Research Associate, Erasmus University Rotterdam, "Emerging Technology and Nuclear Security: What Does the Wisdom of The Crowd Tell Us?" Contemporary Security Policy, Vol. 42, Issue 3, pg. 299-302, 2021, T&F.

Our third finding focuses on whether emerging technologies could enhance or impede nuclear disarmament efforts. Some work has already exposed how new technologies have the potential to strengthen nuclear disarmament and verification measures. A prototype “SLAFKA” was recently jointly developed by a nuclear regulator in Finland (STUK), the University of New South Wales in Australia, and the Stimson Center in the United States which tests whether a distributed ledger technology (DLT) can effectively safeguard nuclear material (Stimson Center, 2020). A DLT platform is “a system of electronic records that enables independent entities to establish consensus around a “ledger”—without relying on a central coordinator to provide the authoritative version of the records” (Rauchs et al., 2018, p. 23). Blockchain is the most well-known type of distributed ledger. Importantly, blockchain is structured in such a way that all who participate in the shared ledger must agree upon a set of records or data, and this data cannot be changed or tampered with by one actor alone (Rockwood et al., 2018). When it comes to accounting for nuclear materials, blockchain could be used by member states to confidentially and securely provide data to the IAEA (Vestergaard, 2018). By using a shared ledger system, the transmission of data by a member state would be visible to other member states, while maintaining the anonymity of participants (Rockwood et al., 2018).

In a recent report, Burford (2020) notes that the characteristic features of blockchain, namely its immutability and security as a data management tool, are uniquely suited to “help to build technical capacity among [non-nuclear weapons states] and habits of cooperation among NPT parties, while protecting proliferation-sensitive data” (p. 21). Finally, others have noted that advances in image-recognition software combined with the increased sophistication in and availability of satellite imagery could open up space for more actors to get involved in verification activities (Kaspersen & King, 2019). This would make verification more robust by allowing a greater number of states to participate in what has traditionally been the domain of states that are more technologically superior.

The security, transparency, and confidence-building features of these emerging technologies could thus enhance verification by strengthening the safeguards system as well as increasing trust and cooperation among states normally suspicious of one another. These features could prove useful in helping to close both institutional and compliance gaps within the non-proliferation regime. That said, as with any other global governance regime, a compliance gap is very difficult to fully bridge. On this point, Sagan notes that even with advances in verification technology “there will remain the problem of what to do if an erstwhile nuclear nation is caught secretly preparing to rearm” (see Sagan in Sagan & Waltz, 2010, p. 90). While the inclusion of new technologies in verification and safeguards will not wipe away the challenges associated with verification, emerging technologies can play a role in strengthening verification and safeguarding measures.

Since we were interested in whether the experts and policymakers considered the positive applications of new technologies on disarmament efforts, our final question in the survey asked experts to express their views on nuclear disarmament.

Table 3 illustrates that the majority of our experts across regions agreed that complete nuclear disarmament would happen when leaders are confident that technology will allow for its verification, underlining the pivotal role verification plays in disarmament. This was echoed by some of the policymakers whom we spoke to who said that AI and remote sensing could help make verification measures more robust (Interviewee I & F). On the other hand, Table 3 also highlights that European and American experts are more skeptical (than experts in other regions) of the fact that nuclear disarmament will occur when leaders believe new technologies make nuclear weapons unnecessary.

#### Policy must be certain and originate at the federal level to signal U.S. commitment to accommodative blockchain policy.

Michele Benedetto Neitz 21, Professor of Law at the Golden Gate University School of Law, Member of the California Blockchain Working Group, Affiliated Scholar at LexLab at the U.C. Hastings College of the Law, “How to Regulate Blockchain's Real-Life Applications: Lessons from the California Blockchain Working Group”, Jurimetrics Journal, 61 Jurimetrics J. 185, Winter 2021, Lexis

A. Why Create Laws Related to Blockchain Technology?

1. Protecting the Public from Harm

Blockchain technology is a complicated field, and innovation in this space is developing rapidly. This innovation will occur regardless of a legislature's reluctance or willingness to draft laws to regulate this industry. As state and federal legislators are struggling to define a regulatory scheme, members of the public who are excited about the possibilities of investing in something new like digital assets may suffer from harm.

This has, of course, already happened in various ways. In a recent high-profile example, members of the public were invited to invest in initial coin offerings (ICOs), buying tokens as a way to invest in start-up companies. 25 One study reported that approximately 78 percent of the ICOs offered in 2017 were actually scams. 26 In the United States, 33 percent of ICO investors believe that ICO operators "deceived them or withheld information from them." 27 The ICO market significantly cooled as federal prosecutors and the SEC began aggressively taking action against leaders of fraudulent ICOs, demonstrating how regulatory enforcement can indeed protect investors from harm. 28

[\*190] However, cryptocurrency scams are persisting beyond the ICO craze. The FTC recently warned the public that scammers are continually finding new ways to "trick people." 29 Members of the public are clearly at risk of a multitude of foreseeable--and unforeseeable--problems as applications of this technology develop, including fraudulent investments, breaches of privacy on blockchain platforms, digital identity theft, and insufficient data protection. Given these threats to the public, it is not appropriate for regulators to dawdle as blockchain applications continue to rapidly advance.

2. Attracting Innovation

While they work to protect the public, legislators and regulators can also use laws to signal their commitment to attracting blockchain-related companies to their locations. Some jurisdictions, including countries like Estonia and Switzerland 30 and U.S. states like Wyoming, 31 have already implemented regulatory schemes designed to win the interjurisdictional competition for blockchain business. 32

The resulting tension between protecting the public while promoting innovation lies at the heart of regulating digital assets and other applications of blockchain technology, as discussed in more detail in Section III.A. Despite the need for blockchain-related regulation, numerous challenges exist for lawmakers seeking to draft laws in this area--starting with the fact that the word "blockchain" does not have a commonly understood definition.

B. The Legislative Definition Problem

What is the legal definition of blockchain? This simple question has proved to be exceedingly difficult to answer. States considering blockchain legislation have focused on different characteristics of this new technology, meaning that "[d]efinitions in legislation introduced in 2018 in California, Florida, Nebraska and Tennessee differ[ed] from those of industry groups and from each other." 33 In some cases, the definitions were in conflict. 34 These inconsistent definitions [\*191] are problematic, as they "actually introduce legal uncertainty where it did not previously exist, and invite unnecessary and expensive litigation." 35

A clear definition of blockchain is necessary for legislative purposes as well, as it is required to help a jurisdiction create clear policies. 36 Moreover, a state's definition should enable policymakers and the public to focus on "the most unique value that the technology can deliver. It should be accessible to and understandable by the public, and yet technically specific enough to ensure that the [jurisdiction] can reap maximum benefit." 37 With such a high bar, legislators have understandably struggled to construct a working definition for this new technology.

The California Blockchain Working Group, after much discussion and debate, created a new definition of blockchain in 2020 for state legislative purposes:

"Blockchain" is a domain of technology used to build decentralized systems that increase the verifiability of data shared among a group of participants that may not necessarily have a pre-existing trust relationship.

Any such system must include one or more "distributed ledgers," specialized datastores that provide a mathematically verifiable ordering of transactions recorded in the datastore. It may also include "smart contracts" that allow participants to automate pre-agreed business processes. These smart contracts are implemented by embedding software in transactions recorded in the datastore. 38

The New York Senate took a simpler approach, defining blockchain as "a mathematically secured, chronological, and decentralized consensus ledger or database, whether maintained via internet interaction, peer-to-peer network, or otherwise used to authenticate, record, share and synchronize transactions in their respective electronic ledgers or databases." 39

Both of these definitions are technically correct, and they both reflect the policy decisions of their respective states. For example, California deliberately used the more flexible term "datastore," instead of "record" or "log," to reflect the verifiability of data shared amongst participants, the many use cases of this type of ledger, and the fact that many datastores could exist at once. 40

[\*192] One could argue that the lack of a uniform statutory definition is partly responsible for the patchwork nature of state blockchain regulation. After all, without a similar definition, it is nearly impossible to set policy goals and pass parallel legislation in multiple jurisdictions. However, the problem of inconsistent definitions is just the tip of the iceberg of interjurisdictional competition. 41 This competition is unlikely to subside even if the federal government or the Uniform Law Commission enacted a well-accepted, standardized definition of blockchain technology.

C. The Fast Pace of Blockchain Technology Development

Law always moves slower than technology. 42 This is partly because lawmakers and agencies can "struggle to capture emerging technologies in dusty regulatory frameworks." 43 For example, securities laws drafted in the 1930s could not have anticipated the sale of digital assets. 44 Even more recently drafted laws and regulations relating to the Internet do not fit blockchain technology. 45 Lawmakers must decide whether to fit this revolutionary technology within existing legal frameworks or start all over with new legislative schemes.

The constantly evolving nature of blockchain technology presents another challenge. This "industry is in its early stages of maturation," making it difficult to determine the initial policy choices that would lead to effective regulation. 46 There are also technical concerns still lurking within blockchain technology, such as locating the "weak points" that might be "gamed by bad actors," which could give rise to unanticipated legal problems. 47

Finally, even at this early stage, lawmakers must consider which aspects of the technology are important enough to regulate. Some of these are obvious, such as cryptocurrency and other forms of digital assets that involve sales to members of the public. But even within this category, it is "still too early to tell exactly which of the drivers of digital asset excitement is dominant," putting [\*193] "regulatory bodies in a tough position." 48 In this way, the wide variety of blockchain projects and the speed at which they are developing creates an additional barrier to effective regulation.

As an example, imagine a developer creates a brand-new digital asset and offers it to the public. How should regulators approach the regulation of this asset? Should regulators first consider the substance of the project, its connection to a decentralized ledger, its effect on consumers' privacy and security, or its potential to evade anti-money laundering and "[k]now [y]our [c]ustomer" laws 49 (or all of the above)? An effective regulatory scheme would need to include rules that are flexible enough to manage future technical developments as well as today's technologies. Otherwise, laws may need to be reconsidered and amended whenever a new technical application emerges.

D. Blockchain Technology's High Learning Curve for Lawmakers

Blockchain technology can be complicated and intimidating, and few lawmakers have training in computer science. A 2016 survey found only that only four of the 535 members of Congress had formal computer science degrees. 50 While the technical aspects of blockchain can be difficult to explain, most legislators can learn enough to understand the fundamentals. 51

New York's State Senate offers a case in point. The Senate's technical advisor reported that in 2019, "staffers and senators asked basic questions about blockchain and distributed ledger technology, prompting [the technical advisor] to develop an explainer presentation." 52 One year later, in 2020, many of the senators "appear more comfortable with the technology, which helps them see the value of [potential] legislation." 53

Legislators need not dive into minor technical details of blockchain to be able to regulate it. It is more important for legislators to focus on the function of blockchain and its practical applications, asking not "what is blockchain?" but [\*194] "what can blockchain do?" 54 Policymakers should focus on the use cases of blockchain, rather than its underlying technology. 55

Professor Angela Walch offered prescriptive recommendations for regulators learning about blockchain, advising them to cultivate their expertise (including self-education), consult with other regulators, follow the activity of standards organizations and academia, and "[w]atch and [l]earn" as the technology stabilizes. 56 Professor Walch also counsels lawmakers to "[a]dopt a [c]ritical [m]indset" in this educational process, to ensure they are not unduly influenced by hype or unreliable sources. 57

Legislators could also learn more about blockchain through the use of legislative working groups or task forces. For example, California's Blockchain Working Group drafted a report in accessible language, enabling state legislators to learn more about the technology and its potential applications for California in one comprehensive document. 58 The federal government has tried to follow this path. In 2019, a bipartisan group of senators proposed a bill directing the Secretary of Commerce to establish a federal Blockchain Working Group in 2019. 59 However, the bill, entitled the "Blockchain Promotion Act," is still currently in committee. 60

As a law professor who taught the first Blockchain and the Law class in San Francisco, I can anecdotally report that blockchain and cryptocurrencies are not easy concepts for nontechnical learners to grasp. However, over the course of one semester, my law students (most of whom did not have any technical training beforehand) were able to draft final reports and presentations not just describing the technology, but also analyzing the use cases deploying the technology. With a bit of time and effort, state and federal lawmakers can understand the potential for blockchain to transform their jurisdictions.

II. FIVE FACTORS FOR LEGISLATIVE CONSIDERATION

In light of the difficult nature of regulating blockchain, this Part offers five factors lawmakers should consider as they work to draft blockchain and crypto regulation.

[\*195] A. Policy Decision: Innovation vs. Protecting the Public Interest

In an ideal world, governments would be able to promote both innovation and the public interest. In reality, however, legislators usually need to debate and choose whether they will prioritize innovative technological development or consumer/public protection. This is especially true in the context of blockchain, since the public perception of blockchain varies widely. Many members of the public first heard of blockchain through Bitcoin, the digital currency. But early illegal use cases of blockchain technology also made headlines, including the infamous Silk Road darknet marketplace 61 and repeated cases of fraudulent theft through Initial Coin Offerings. 62 While the technology is neutral, blockchain can be used in malicious ways that harm the public. 63 Even well-meaning technology can implicate privacy and data protection concerns. 64

It is therefore "essential for both the industry and society that consumers and the capital market are protected from abuse." 65 No state or federal jurisdiction should enable blockchain technology to develop without guardrails to protect the public. The question is where those guardrails should lie. If states wait too long to regulate, the public may be harmed, and the costs of imposing requirements on industries that have already been established will be too great. However, if states develop restrictive regulations too early or the laws "become onerous," 66 businesses will relocate to more friendly jurisdictions. States in this position risk killing off innovation or pushing it to other states. 67 [FOOTNOTE] Blockchain businesses will move for regulatory reasons. See Daniel Kuhn, The Cryptocurrency Act of 2020 Is 'Dead on Arrival,' Washington Tells Sponsors, COINDESK (Mar. 11, 2020, 1:19 P.M.), https://www.coindesk.com/the-cryptocurrency-act-of-2020-is-dead-on-arrival-washington-dc-tells-sponsors [https://perma.cc/AP8X-KULR] ("Many projects are simply choosing to move elsewhere" because of regulatory uncertainty.). [END FOOTNOTE]

Part of the reason blockchain technology's applications are so challenging to regulate is that it "is difficult, if not impossible, for regulators to construct a framework that achieves clear rules, market integrity, and financial innovation." 68 This complex question explains the spirit of experimentation among states discussed in Part V, with some choosing restrictive regulatory structures, some choosing permissive approaches, and others choosing the middle. Regardless [\*196] of a jurisdiction's ultimate direction, legislators drafting blockchain legislation must evaluate how to protect the public while encouraging creative technological development.

B. Ethical Considerations

California was the first (and so far, the only) state to consider ethical considerations in the early stages of regulation. This author published the first law review article analyzing ethics in the blockchain industry in December 2019, 69 and also served as the primary drafter of the Ethical Considerations section in California's Blockchain Working Group report. 70

Depending on the type of blockchain at issue, numerous ethical issues may come up for regulators. For example, the increasing centralization of permissionless blockchains and the rise of permissioned blockchains may raise concerns about personal ethics, such as bias and conflicts of interest. As trends suggest that governance of blockchain systems is moving toward centralization, 71 individuals may have power to influence decisions made on that blockchain. If so, there is a potential for that individual's bias and conflicts of interest to come into play. 72

Although ethical discussions around blockchain appear slower to develop than the technology itself, several paradigms have been put forth advocating ethical considerations in this industry. 73 For example, the World Economic Forum recently asked participants and policymakers to sign on to its "Presidio Principles," an agreement to consider transparency and accessibility, agency and interoperability, privacy and security, and accountability and governance. 74 MIT's Digital Currency Initiative included the topic of blockchain ethics at its 2019 "Cryptoeconomics Systems Summit." 75

[\*197] In addition, the Beeck Center for Social Impact + Innovation at Georgetown University published the "Blockchain Ethical Design Framework," with a focus on six "root issues": "governance, identity, access, verification and authentication, ownership of data, and security." 76 This structure more specifically applies to developers, and is not a code of conduct or a legislative model, but it reiterates the idea that "we all share the responsibility to . . . demand intentional ethical approaches in the design and application of data and technology for social good." 77

California's Blockchain Working Group considered ethical issues related to social impact, including fairness, equity, accessibility, trust and transparency, and sustainability. 78 The Group proposed an ethical framework for the adoption of blockchain technology that is directed toward lawmakers as well as industry players. 79 This framework encompasses three main principles:

i. Address key ethical design goals

a) Seek societal benefit: Maximize good and minimize bad. b) Equity: Does this benefit all Californians, or only a few? c) Efficiency and effectiveness: How can we achieve ethical design and use cases without slowing innovation?

ii. Consider ethical uses of blockchain technology

a) Fairness: Is this technology designed and deployed in a fair, nondiscriminatory manner? b) Accessibility: Design to include the most vulnerable user. c) Responsibility: Anticipate and design for all possible uses. d) Sustainability: Create technology to advance sustainability, public health, and corporate social responsibility.

iii. Minimize unintended consequences

a) Are there unintended biases or conflicts in the design or use of this technology? 80 [\*198] b) Are any populations being unintentionally harmed by the way this technology is developing? c) Does this technology promote violations of local, national, or international law? 81

This useful framework offers guidance to regulators seeking to make sure they do not inadvertently violate ethical considerations, especially with hastily drafted legislation. Two examples illustrate the usefulness of this approach. First, it could be relatively easy to create a certification process for blockchain developers who provide services to the State of California. But will that certification process limit approval to developers with degrees from elite institutions? This type of action would raise equity concerns, as the blockchain industry should be working more toward diversity in gender, cultural backgrounds, and perspectives of industry participants. Second, could companies who advance environmentally sustainable blockchain development receive tax credits from the state? Although different jurisdictions may embrace different ethical principles, legislators should discuss these issues as they contemplate ways to regulate this new technology.

C. Transparency

Since "the rule of law requires transparency," 82 jurisdictions in the United States are governed by transparency laws. The federal government's administrative agencies must abide by the Administrative Procedure Act, which (among other things) orders federal agencies to act "transparently and fairly." 83 California's Bagley-Keene Act requires state boards or commissions (including working groups) to "publicly notice their meetings, prepare agendas, accept public testimony and conduct their meetings in public unless specifically authorized to meet in closed session." 84

Legislators are likely already aware of the government transparency laws in their jurisdiction, but there are other reasons transparency is especially important in the context of blockchain regulation. First, all stakeholders should be given the opportunity to weigh in on laws governing this nascent industry. 85 The industry players on the front line have valuable perspectives to share with legislators, and input from various stakeholders will create more efficient regulation. Moreover, the technology is moving quickly, and there may be applications of blockchain in development that legislators do not even know about yet. As the Cryptocurrency Act of 2020 revealed, 86 drafting laws without the collaboration of diverse stakeholders is ineffective.

[\*199] Second, although blockchain technology may eventually touch all areas of business, members of the public may be unaware of blockchain technology's potential. Legislative debates could double as community education opportunities, allowing people who would not ordinarily be interested in blockchain to attend Working Group meetings, task force briefings, and other public discussions of this new technology. Such meetings could be advertised to nontechnical professions and community organizations, and should be held in easily accessible public places and online. Legislators themselves could reach out to their nontechnical constituents and offer ways to connect them to educators and leaders in the blockchain industry. Such transparency could create a culture of innovation in a particular jurisdiction, while increasing public credibility for whatever regulations eventually develop.

D. Interjurisdictional Competition

States have been competing with each other since the beginning of the republic, and the competition has not decreased as our economy has become more complex. 87 In corporate law, interjurisdictional competitions are a common affair. The state that "wins" the race, creating the environment to attract the most businesses to that state, can secure both tax revenue and additional jobs for state residents. Delaware indisputably won the fight for corporate charters among states, with over 1.5 million legal entities, including 67 percent of all Fortune 500 corporations, incorporated there. 88 The reasons for Delaware's success include specialized legislation that is updated each year to adapt to technical and other changes, as well as a corporate-specific chancery court that can move cases quickly along. 89

When Limited Liability Companies (LLCs) were created in Wyoming in 1977, another interjurisdictional race was on. 90 Despite concerns that interstate LLCs would have problems without uniform LLC statutes among the states, "most states enacted LLC statutes before efforts to develop standardize statutes came to fruition." 91 As a result, only twelve states ultimately adopted uniform acts, and there is less uniformity for LLC statutes than for other business forms. 92

The same is happening now with statutes related to blockchain technology. States who can win the race to attract blockchain businesses to incorporate and domicile in their state can earn more than just increased tax revenues from start-up companies. Such a state could also create a reputation for being friendly to [\*200] technological innovation, a reputation that would have impacts beyond blockchain technology. For this reason, some states (including Wyoming, the first state to draft LLC statutes in 1977) jumped out first to enact permissive blockchain-and crypto-friendly regulations. 93

Before enacting regulations, however, state legislatures should ensure they are clear on the policies underlying those regulations. For example, as discussed in Section II.A above, states should consciously strike a balance between protecting the public and encouraging innovation. Without establishing prioritized policies in advance, a state may win the interjurisdictional competition in the short term but create unintended consequences, such as unnecessary litigation or public harm, in the long term.

E. Uniformity

As a member of the California Blockchain Working Group, this author asked industry leaders in late 2019 what they preferred to see in blockchain regulation. Each of them clearly and unequivocally stated that uniformity of regulation across the United States would be good for business. It would be much easier for blockchain businesses to plan and expand their operations if states were aligned on regulatory issues, particularly in the area of digital assets.

The Uniform Law Commission (ULC) has made several attempts to create a standardized approach to digital asset regulation. 94 In 2017, the ULC proposed the Uniform Regulation of Virtual-Currency Businesses Act to provide "a statutory framework for the regulation of companies engaging in 'virtual-currency business activity.'" 95 An accompanying "Supplemental Act" in 2018 provided rules related to commercial law and the Uniform Commercial Code. 96

These model acts had a short and controversial lifespan. No state enacted the model legislation, and only a handful of states introduced it. 97 Wyoming actively resisted the ULC's request to withdraw Wyoming's pending blockchain [\*201] legislation in favor of adopting the ULC's approach. 98 Wyoming's legislators noted that the ULC's model acts had not yet been enacted by any jurisdictions, and explained why they considered Wyoming's regulatory approach to be the superior one. 99 One month later, the ULC recognized the need to convene a committee to study how the Uniform Commercial Code could be amended in order to "deal with emerging technologies." 100 The ULC urged "states to refrain from enacting legislation pending the result of the committee's work," 101 an act suggesting that the ULC recognized flaws in its proposed acts. 102 Given the ongoing interjurisdictional race described in Section II.D, it seems absurd to ask states to wait on enacting blockchain legislation.

As of December 2020, only one state (Louisiana) had passed a virtual currency licensing statute based on the ULC's uniform act. 103 It is clear that, much like the race for corporate and LLC charters, the uniformity train has left this station. In the absence of federal legislation or effective model acts, states have already invested time and energy into drafting new laws. States like Wyoming, which has "actively decided to lead the charge in ensuring solvent, blockchain based" companies, 104 will not willingly give up their leading positions in this area.

III. THE CURRENT UNEASY MIX OF FEDERAL AND STATE BLOCKCHAIN REGULATION

Federal and state regulators are struggling to keep up with the fast pace of blockchain technology development. This Part will demonstrate how this struggle is creating a wide variety of regulatory approaches.

[\*202] A. Patchwork Agency Regulation

The federal government's attempt to regulate blockchain technology, particularly cryptocurrencies, is (to put it bluntly) a mess. Federal authorities interpret laws relating to blockchain and cryptocurrencies differently. 105 This confusing, piecemeal approach is epitomized by the struggle to determine how to even classify digital currency for regulatory purposes. The Internal Revenue Service (IRS) views cryptocurrency as property, the Securities and Exchange Commission (SEC) classifies such currencies as securities, and the Commodity Futures Trading Commission (CFTC) considers cryptocurrency to be a commodity. 106 There is clearly a need for a unified methodology, even just within blockchain's narrow use case of cryptocurrencies, but this confusion is not a surprising result when "neither Congress nor the SEC has formally elucidated which digital assets are securities and which are not." 107

Different agencies are sending different messages, creating "regulatory whiplash." 108 Some, like the CFTC, are inclined toward experimentation to support blockchain and cryptocurrency development, while others are more cautious. 109 All of the agencies seeking to regulate blockchain technology and its applications would benefit from consideration of the five factors listed in Part III. Below is a short explanation of three distinctive agency approaches.

[\*203] 1. SEC Safe Harbor Provision--A Work in Progress

The SEC missed its chance to establish a clear regulatory framework early in the life span of blockchain technology, instead adopting an approach characterized by delay and a series of reversals on important decisions. 110 The SEC's delay "simultaneously encouraged unscrupulous actors to take advantage of ambiguous regulations" and issue fraudulent tokens to Americans, while "driving away conscientious developers and entrepreneurs" to places with more developed laws. 111 The SEC's attempt to clarify its position in a limited area with the April 2019 issuance of a "Framework for 'Investment Analysis' of Digital Assets" has been called "too little too late." 112

In the meantime, SEC Commissioner Hester Peirce has earned the nickname "Crypto Mom." 113 In early 2020, she offered her take on the legislative problems related to blockchain technology, saying "[i]t is important to write rules that well-intentioned people can follow. When we see people struggling to find a way both to comply with the law and accomplish their laudable objectives, we need to ask ourselves whether the law should change to enable them to pursue their efforts in confidence that they are doing so legally." 114 Peirce clearly views law and regulation as a way to promote, not thwart, the development of blockchain and its use cases.

In February 2020, Peirce proposed a safe harbor provision for firms in the cryptocurrency space selling tokens to the public. 115 Peirce described her proposal as recognizing "the need to achieve the investor protection objectives of the securities laws, as well as the need to provide the regulatory flexibility that allows innovation to flourish." 116 The safe harbor proposal includes disclosure requirements for issuers and good faith obligations to ensure that token issuers are not fly-by-night companies. It also sets forth rules related to the purpose of token issuances and efforts to create liquidity for token users. 117

[\*204] The idea underlying the proposal is to "give new projects some breathing room where they can do their work without fear of being fined, arrested or having their offices raided." 118 This also filters "out the bogus projects that have no intention of building a workable, decentralized product." 119 Peirce appears to be seeking a way to protect consumers from unscrupulous token issuers while allowing companies to move forward with technical developments.

Many members of the blockchain industry welcomed the safe harbor proposal. The General Counsel for a cryptocurrency exchange declared, "Today we both congratulate and thank SEC Commissioner Hester Peirce . . . . This is a great day for the blockchain industry and the United States." 120 But the proposed safe harbor is just that: a proposal. It is not yet law, and may never become law. 121 Even so, the willingness of Commissioner Peirce to think outside of the box with this proposal has reinforced her reputation (and her nickname) within the blockchain community.

2. The Federal Reserve's Digital Dollar

The Federal Reserve revealed in February 2020 that it was working toward a potential central bank digital currency (CBDC). 122 A CBDC, colloquially [\*205] known as a "digital dollar," is not a token based on a decentralized blockchain. 123 It would instead be a "debt notation on a centralized ledger maintained by the Federal Reserve," which would use a centralized database to track consumer or business balances. 124 Individuals could "access funds through digital dollar wallets, which would also be managed by the Fed." 125

Although the digital dollar is different from a crypto asset on a blockchain, the policy issues at hand are quite similar. The Federal Reserve recognizes that these policies include financial stability and legal considerations, such as privacy concerns and protections for data and digital identity safety. However, the Federal Reserve clearly wishes to be on the cutting edge of the digital dollar debate, with one of its members noting that "it is essential that we remain on the frontier of research and policy development regarding CBDC." 126

At the time, there was pressure on the Federal Reserve to begin researching a digital dollar. China is creating a digital yuan, 127 and some argue that the United States is already "falling behind" other countries in developing a CBDC. 128 In addition, the surprise release of Facebook's Libra in 2019 (now rebranded as "Diem") apparently inspired the Federal Reserve to accelerate its research on the potential of a CBDC. 129 The arrival of the COVID-19 pandemic expedited the discussion, as millions of people around the world moved toward cashless payments. 130

The discussion of a digital dollar jumped quickly during the pandemic from the Federal Reserve to Congress. Drafts of congressional emergency pandemic relief legislation in March 2020 included a digital dollar concept to speed up the delivery of stimulus payments. 131 A Congressional Task Force on Financial [\*206] Technology held hearings on the issue in June 2020. 132 Indeed, "the question might be not if digital currencies will find their way into the financial system, but when--and how." 133 As federal lawmakers move toward the creation and regulation of a CBDC, they should be pondering how to encourage innovation while protecting consumers. In addition, anyone involved with the CBDC should consider transparency issues involving the input of multiple stakeholders, as well as ethical considerations such as concerns for unbanked populations.

3. Treasury Department Regulations to Increase Cryptocurrency Transparency

Unlike SEC Commissioner Hester Peirce and the Federal Reserve, U.S. Treasury Secretary Steven Mnuchin has taken a more cautious (and arguably negative) approach to cryptocurrency. 134 In February 2020, Secretary Mnuchin told the Senate Finance Committee that the Treasury Department would be enacting "stricter regulations around digital currencies to help expose 'secret' accounts and other nefarious activities." 135 Although Mnuchin acknowledged that "[w]e want to make sure that blockchain technology moves forward," he also noted that "[w]e want to make sure cryptocurrencies aren't used for the equivalent of old Swiss secret number bank accounts." 136

The goal of Treasury regulations will be to "ensure law enforcement can see where the money is flowing, and that it's not used for money laundering." 137 A March 2020 press release from the Treasury Department announced that the Department had held a meeting of "industry thought leaders and compliance [\*207] experts" on the issue of cryptocurrency regulation. 138 The press release also explained that as these regulations develop, Treasury will remain focused on preventing illegal conduct by "money launderers, terrorist financiers, and other bad actors." 139 The repeated use of such negative terms indicates the Department's adverse stance toward cryptocurrencies, as well as an example of lawmakers and regulators "still cling[ing] to an outdated trope where cryptocurrencies are used to underwrite criminal activity." 140

What can we make of this patchwork approach to regulation among U.S. federal agencies? Some may argue that it is better for the federal government to allow the blockchain industry and cryptocurrency markets to evolve before finalizing a regulatory structure. There can also be benefits to regulatory divergence, such as enhanced innovation as agencies compete to become the preferred regulator in a particular field. However, the absence of "intelligent rules and regulations that provide a clear and predictable framework for investors, issuers, and their lawyers" is complicating that evolution. 141 How can lawyers advise clients--such as start-up companies desiring to operate in the cryptocurrency sphere or offer tokens to investors--if it is unclear how such assets would be regulated? Policymakers are not sufficiently considering important factors, including transparency and uniformity, under this current approach.

Perhaps the problem is a lack of unity among federal agencies, who appear to be tripping over themselves to get in on the digital asset regulatory action. Federal policymakers may be concerned that they are not yet educated enough to make cohesive decisions about overarching regulatory frameworks, or they are waiting for Congress to step up. In any case, this confusion at the federal level is wreaking havoc on the blockchain industry in the United States. Innovative companies must risk inadvertently violating regulations (and having to pay the ensuing fines) just to push the industry forward. 142 Alternatively, companies are choosing to leave the U.S for other jurisdictions with better regulatory [\*208] clarity. 143 Piecemeal regulation among federal agencies is "not a substitute for transparent legislation or judicial rulings to guide market participants." 144

### 1AC---FTC ADV

#### Contention 2 is FTC.

#### FTC credibility is tanked by both unwillingness to launch bold antitrust AND a track record of losing in court, but Khan’s appointment is a window to revamp its policy.

Jessica Rich 21, Of Counsel at Kelley Drye & Warren LLP, Former Director of the Federal Trade Commission’s (FTC) Bureau of Consumer Protection (BCP), JD from the New York University School of Law, AB from Harvard College, Former Distinguished Fellow at Georgetown University’s Institute for Technology Law and Policy, “How Lina Khan’s FTC Does Business – What We’ve Learned So Far”, JD Supra, 11/9/2021, https://www.jdsupra.com/legalnews/how-lina-khan-s-ftc-does-business-what-3596839/

Since taking over at the FTC, Khan has quickly begun to remodel it. Some of these changes look like technical internal reforms, while others are major policy statements. Almost all have been fiercely opposed by Republicans and the business community.

In the past few weeks, Khan has begun holding commission meetings in public - something Democrats say makes the commission more open to scrutiny, but which the two Republican commissioners say makes it harder for them to negotiate compromises.

She has banned staff from making public appearances such as conference panel sessions, saying the commission has too much work to do. She has passed a rule which allows FTC staff greater leeway to pursue investigations in certain priority areas, giving them the power to issue their own subpoenas for documents and testimony.

Khan is also promising to help rewrite the US merger guidelines, a complex set of documents laying out what kinds of evidence regulators look for when deciding whether a merger is illegal.

And, in a pair of crucial decisions, she and her fellow Democratic commissioners voted to rescind two key FTC policy statements.

The first was written in 1995 during Bill Clinton's first term as president, and deemed that companies that had previously proposed unlawful mergers no longer had to notify the FTC before completing future transactions in the same market.

By undoing that policy, Khan said she hoped to stop companies simply trying again and again to complete a merger even after it had been rejected by regulators. The second statement was written in 2015 during the Obama administration and set down limits on when the FTC would prosecute a company for socalled "unfair methods of competition".

"These changes are going to make dealmakers think about things differently," says one senior Democrat working for the commission. "They are not filing an application, we are investigating as to whether there is a violation of the law. That is a fundamentally different way of thinking about things."

Meanwhile, the White House has given the FTC the even bigger task of helping rewrite the rules that underpin the American economy. Under the terms of a sweeping order signed by Biden last month, the commission has been asked to devise rules which would ban companies from stopping employees moving to rivals, and prevent pharmaceutical companies from paying generic rivals not to enter a certain market for a period of time.

The moves have delighted progressives, who say Khan's willingness to push through reform quickly shows she is serious about putting the commission back at the heart of Washington rulemaking and enforcement.

"The commission has been lazy," says Matt Stoller, director of research at the American Economic Liberties Project and a former colleague of Khan at the Open Markets Institute. "It has been a place where you send political cronies who don't have to do any work if they don't want to.

"This is such a different form of politics from the normal bullshit."

Republican concerns But if the reforms have pleased Khan's supporters, they have worried conservatives who say the commission lacks both the legal authority and the institutional capacity to do what is being asked of it.

For example, Khan says she wants to renew the commission's appetite for bringing cases against companies for "unfair methods of competition" - a vague category of corporate behaviour which allows the FTC to act even when there is no merger in question or when a company is not large enough to be a monopoly. She and fellow progressives argue that by not pursuing such cases the FTC has taken away one of its most powerful weapons.

Such behaviour is often very hard to prove, however. When the FTC charged Abbott Labs in 1994 with trying to rig a bid to supply the Puerto Rico government with infant formula, for example, it alleged the company's choice not to bid in one of the rounds provided evidence of collusion with rivals. Abbott Labs' lawyers, however, successfully used game theory to explain why a "no bid" could in fact have made rational economic sense.

More controversial is the idea that the commission is going to start writing wide-ranging new rules of its own, as envisioned in Biden's competition order. This would test the limits of the FTC's powers in both court and on Capitol Hill, critics say, and could end in Congress clipping its wings as it did in 1980 when the FTC was forced to subject its rules to Congressional review.

Sean Heather, senior vice-president for antitrust at the US Chamber of Commerce, says: "The FTC is writing its own rules and acting as prosecutor, judge and jury. This is deeply concerning for a regulatory agency with broad powers."

Christine Wilson says: "I believe competition rulemaking is institutional suicide."

If Khan wanted an indication of how courts might view her approach, she got one within weeks of taking over the commission. In June, a federal judge dismissed the commission's complaint against Facebook, its most high-profile in years.

The commission had argued the social media company had engaged in anti-competitive conduct for years, including by buying up potential rivals such as WhatsApp and Instagram. In June, however, a federal judge ruled the commission had failed to prove that Facebook had monopoly power.

Khan's critics worry that if the commission loses a series of high-profile court cases it will fatally undermine its authority. "If you lose enough cases your credibility evaporates," says William Kovacic, a former Republican chair of the commission. "You can lose it all - not right away, but you can lose it all."

For Khan's supporters, however, this criticism borders on the absurd. "Don't you think the FTC is already seen as weak?" says Rohit Chopra, a Democratic commissioner.

Progressives argue the FTC has for years only enforced competition rules against large companies in a fraction of the cases it should have. "Do you think there are only 10 anti-competitive mergers a year?" says Chopra. "I'm not sure it can get any worse."

"The FTC can put together legal teams that can match the best in the bar, punch for punch, in a major case," says Kovacic. "But the number of those teams is a couple, it is not 10."

For years the commission's budget and staffing levels have been chipped away. It now has roughly 50 per cent of the staff it had in 1980 and is currently trying to review a record number of mergers. In the first nine months of this fiscal year, the FTC received 2,573 notifications ahead of a large merger - already 50 per cent more than were received in the whole of last year.

Last week, the commission published a statement warning that it would not be able to review all mergers within 30 days of a notification being made, as required by law. Instead, the FTC said, if it had not had time to review a merger before it took place, it would reserve the right to take action even after it had been completed.

The commission is also facing an uphill battle to retain staff. Some people say they feel demoralised by the pace of change and irritated they have not yet met their new chair - something Khan's allies say is an unfortunate result of the pandemic. "There are only so many times you can hear that your institution has failed for years before you start to doubt your place in it," says one staff member.

#### Specifically---blockchain is a key priority.

Dr. David Morris 21, PhD in Media Studies from the University of Iowa, Former Academic Sociologist of Technology, CoinDesk’s Chief Insights Columnist, “Biden’s New FTC Chair Could Be a Big Web 3.0 Ally”, The Crypto Daily News, 6/16/2021, https://thecryptodailynews.com/2021/06/bidens-new-ftc-chair-could-be-a-big-web-3-0-ally/

Yesterday, the Biden administration named Lina Khan, a 32-year-old Columbia Law professor, as the brand new head of the Federal Trade Commission. Khan, who would be the youngest FTC head ever, is called a fierce critic of massive tech monopolies like Amazon. While there’s typically a knee-jerk resistance to regulation and regulators amongst blockchain advocates, Khan’s considerations make her a potential ally on huge points like privateness. Her antimonopoly work might additionally create substantial market alternatives for brand new sorts of tech companies – together with these constructing decentralized techniques and “Web 3.0.”

Enforcing U.S. antitrust regulation is a main a part of the FTC’s mandate, and Khan might be greatest identified for serving to redefine simply what a “monopoly” is. She has been essential, together with throughout seven years on the Open Markets Institute, in growing and selling the concept a firm could be a monopoly even when its practices drive prices down – even, the truth is, if its product is free to customers. That principle largely hinges on how the companies collect and use knowledge: Khan has been among the many loudest critics of the way in which Amazon makes use of knowledge gathered by its storefront, akin to by leveraging sales data to compete with third-party sellers who’re, a minimum of buyers, its prospects.

#### Failing to control blockchain violations will outstrip federal enforcement capacity, making traditional antitrust completely ineffective.

Drew Stanko 21, JD Candidate at St. John's University School of Law, BS in Economics from Villanova University, “Recent Developments and the Need for Nuance”, Journal of Civil Rights & Economic Development, 4/8/2021, https://www.jcred.org/shortreads/efforts-to-modernize-antitrust

I. IS NEW SCHOOL OFFICIALLY HERE?

In January 2007, the Economic Analysis Group at the Department of Justice Antitrust Division published a Discussion Paper entitled "Does Antitrust Need to be Modernized?" The paper reviewed whether "globalization and rapid technological change" necessitated changing federal antitrust laws. This Discussion Paper has proven prescient; it identified as a "key issue" the growing need for improving antitrust enforcement of alleged exclusionary conduct related to intellectual property.

Bipartisan support for antitrust reform has grown immensely since January 2007 due to heightened market concentration and Mergers & Acquisitions (M&A) rates in an increasingly complex digital economy. Senator Amy Klobuchar introduced antitrust reform legislation in February that would provide substantial funding increases to the FTC and the DOJ Antitrust Division, and the Biden Administration appears to be supporting efforts to modernize antitrust enforcement.

Recently, President Biden indicated intent to name two prominent "New School" antitrust attorneys and scholars, Lina Khan and Tim Wu, to positions in his administration. Kahn, who rose to prominence as a student at Yale Law School for "Amazon's Antitrust Paradox" and has since held positions at the Open Markets Institute and the FTC, will reportedly be nominated to serve as the Commissioner of the Federal Trade Commission. Wu is famous for coining the term "net neutrality" and authoring "The Curse of Bigness: Antitrust in the New Gilded Age," and he will serve on the National Economic Council as a special assistant to the president for technology and competition policy. Kahn and Wu have helped establish and develop the "New School" of antitrust jurisprudence, and both have taught related courses at Columbia Law School. Generally, the New School aims to prioritize "innovation, entrepreneurship, privacy, freedom of the press, and economic and civil liberties" rather than strictly focusing on "consumer welfare."

II. SENATOR KLOBUCHAR'S COMPETITION AND ANTITRUST LAW REFORM ACT:

Senator Amy Klobuchar, who spoke passionately about her concerns related to antitrust enforcement throughout her Presidential campaign, introduced antitrust reform legislation in February.

Sen. Klobuchar's proposal, the Competition and Antitrust Law Reform Act, aims to "give federal enforcers the resources they need [to] . . . strengthen prohibitions on anticompetitive conduct and mergers, and make additional reforms to improve enforcement." In order to accomplish these goals, the proposal would provide increased funding for the DOJ Antitrust Division and the FTC and would create a new FTC "Market Analysis" Bureau. While these structural and administrative reforms may receive bipartisan support, Sen. Klobuchar's proposal would also substantially alter the legal standards used to evaluate antitrust challenges under the Sherman and Clayton Acts, a change likely to be met with pushback by conservative economists and lawmakers. Sen. Klobuchar's proposal aims to accomplish important goals, but some argue the Sherman and Clayton Act amendments included in the legislation would "add friction to M&A Activity, stalling capital markets, reducing innovation and investment, and frustrating economic growth."

1. CLAYTON ACT REFORMS

Senator Klobuchar's proposal would modify the Clayton Act to "restore its original intent by amending it to include reference to 'exclusionary conduct.'" The legislation would define exclusionary conduct as "any conduct that would materially disadvantage . . . actual or potential competitors, or foreclose the ability of or incentive to compete." Currently, antitrust challenges require the plaintiff provide prima facie evidence that alleged anticompetitive effects of proposed mergers would result, and "proponents of the merger are then permitted to rebut by providing evidence that the merger will not have the feared anticompetitive effects."

The amendments would shift the presumption that "exclusionary conduct" presents a violative "appreciable risk" where such conduct is taken by a firm with a market share greater than 50% or otherwise wields significant market power. In turn, the burden would be on firms to prove the procompetitive market effects of the challenged conduct or merger rather than on the challenging entity to establish the anticompetitive impacts of the conduct that would result.

While it is important that antitrust reform efforts prioritize enforcement of anticompetitive exclusionary conduct, the legislation arguably defines the term overbroadly. Accordingly, the proposal may result in disincentivizing innovation that would ultimately benefit consumers and the overall economy. By presuming the illegality of any conduct taken by large firms that disincentivizes market entry or competition, the proposal risks unintentionally penalizing firms for achieving beneficial economies of scale or otherwise innovating to provide higher quality products more cheaply than competitors. Arguably, threatening firms with costly antitrust litigation whenever they undertake innovative conduct that negatively impacts competitors risks disrupting market incentives and stalling economic growth.

2. SHERMAN ACT REFORMS

Similarly, the Sherman Act would be modified to allow civil penalties of either 15% or 30% of a firm's US revenues for anticompetitive exclusionary conduct. Sen. Klobuchar has indicated that civil penalties are necessary because the existing remedies—injunctions, equitable monetary relief, and private damages—have not sufficiently deterred anticompetitive conduct. This may be true, but civil penalties of this size likewise risk stifling and disincentivizing innovation.

3. FUNDING ENFORCEMENT AGENCIES, FINANCING NEW "MARKET ANALYSIS BUREAU"

While the Sherman and Clayton Act reforms are unlikely to garner significant support from conservative lawmakers, the funding increases and creation of the FTC Market Analysis Bureau are more likely to win bipartisan support.

Increasing the funding available to the FTC and the DOJ would enable the agencies to hire more attorneys and would finance the creation of the Market Analysis Bureau. The MA Bureau would supplement the FTC's existing Competition, Consumer Protection, and Economics Bureaus. It would be tasked with conducting market, industry, and retrospective merger analyses aimed at helping the FTC develop a better understanding of the competitive conditions and underlying economic dynamics affecting complex markets. The creation of the MA Bureau is likely to gain support because it would demonstrate a commitment to ensuring continued reliance on empirical analyses rather than judicial or political discretion. Accordingly, these reforms would likely bolster enforcement efforts without necessarily adopting the "Big is Bad" approach that has historically divided lawyers and economists.

III. MODERNIZING ANTITRUST ECONOMICS

The Market Analysis Bureau would theoretically improve enforcement agencies' understanding of the economics underlying complex markets. This would provide enforcers with the tools needed to prosecute anticompetitive conduct that may have otherwise skirted enforcement due to the difficulty of establishing the negative economic effects of the conduct in question.

The complexity of the digital economy and increasing market concentration has made it more difficult for prosecutors to prove these anticompetitive results, but advances in machine learning and computational antitrust may assist in identifying and consistently enforcing antitrust violations.

While computational antitrust is certainly in its nascent stages of development, the early returns from Stanford's new Computational Antitrust Project are promising. The project's seminal article, authored by Project Director Thibault Schrepel, defines computational antitrust as a "new domain of legal informatics which seeks to develop computational methods for the automation of antitrust procedures and improvement of antitrust analysis." There are more than fifty global antitrust enforcement agencies participating in the project, including both the US FTC and the DOJ Antitrust Division.

Schrepel situates computational antitrust within "Antitrust 3.0," which he explains "is emerging but remains incomplete." At the core of Antitrust 3.0 is the goal of developing consistent enforcement frameworks designed to combat anticompetitive conduct in digital markets.

IV. OUTLOOK

In "The End of Antitrust History Revisted," Kahn "reviews" Wu's The Curse of Bigness and explains that the "task facing reformers is to translate their critiques into a positive vision, including legal rules and analytical frameworks." These analytical frameworks will be critical to ensuring that antitrust law promotes free market economics, rather than subjects firms to inconsistent judicial interpretation and prosecutorial discretion.

The majority of federal antitrust law applicable today was authored prior to 1915, and the unique challenges associated with prosecuting exclusionary conduct in digital markets have presented concerns for nearly twenty years. While bipartisan support for antitrust reform and emerging scholarship both provide legitimate reason to be optimistic about efforts to modernize federal antitrust law, it is important that reforms are nuanced enough to confront the complex problems they are enacted to address.

Accordingly, while Senator Klobuchar's proposal is certainly "well-intentioned," the budgetary reforms and creation of the Market Analysis Bureau should be separated from and passed without the proposed Sherman and Clayton Act amendments included in the legislation. The newly-appointed experts in the Biden Administration should be afforded the requisite resources to capitalize on the promise of New School antitrust jurisprudence and the development of Antitrust 3.0. By providing these resources, those leading antitrust modernization efforts will be equipped with the tools needed to create nuanced legal frameworks that reflect modern critiques and ensure consistent enforcement practices.

#### This will create a legitimacy crisis that threatens the foundational credibility of the FTC.

Dr. Thibault Schrepel 19, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, “Collusion by Blockchain and Smart Contracts”, Harvard Journal of Law and Technology, 33 Harv. J. Law & Tec 117, Fall 2019, Lexis

V. CONCLUSION

Blockchain is a new and yet little-explored territory. It is, amongst other things, the Amazon 228 of tomorrow's collusive agreements: full of different life forms and new possibilities, the technology will give rise to unidentified creatures and dangerous species that we do not really know how to approach.

I have first shown that blockchain will be used to enhance the functioning of collusive agreements as we know them and that new forms of collusion linked to the technology conditions of access and use will appear as well. Second, blockchain will increase the stability of collusive agreements, providing them with a good life. Depending on whether the blockchain is public or private, a double paradox could emerge. One paradox is related to the visibility of all practices to colluders while ensuring their opacity to non-colluders. The other is associated with the fact that collusive agreements will be more robust during their lifetime by eliminating a large proportion of deviant behaviors, but will die in more brutal ways.

For these reasons, one can expect an increase in the number of collusive agreements along with an increase in their profitability, but not necessarily in their duration. The number of leniency applications may also drop because blockchain will reinforce trust during the lifetime of collusive agreements. This is largely due to the potential use of smart contracts because once again, "[o]ne of the greatest checks on crime is not the cruelty of punishments, but their inevitability," 229 which is precisely what smart contracts provide by automating punishments.

[\*164] The time has now come to detect collusion by blockchain and smart contracts, however difficult that may be. I have shown that some blockchains are more likely to induce collusive agreements than others. Antitrust and competition authorities may start with focusing their efforts on these blockchains and creating safe harbors for the others, for instance, by ensuring that no sanction will be imposed under antitrust and competition law for a specified number of years. Antitrust and competition authorities may also, when sending questionnaires to undertakings, ask whether they use blockchain, and if so, what type of blockchain, using which consensus, and for what purpose.

But perhaps it is even more urgent to adapt existing legal toolboxes before they become entirely ineffective, which implies considering a "law is code" approach and, generally speaking, transforming part of antitrust and competition law to become allies to blockchain core developers rather than mere threats. 230 It is said that "it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail." 231 As true as this statement is, all we have in existing laws is one size of pliers. With the wrong tools, the most sophisticated technology requiring great precision will not be as adjusted as it could be. Antitrust and competition agencies are currently not equipped to fight collusive agreements by blockchain. This may cause a legitimacy crisis for antitrust and competition law that may become ineffective sooner than expected. Indeed, it is more than likely that the use of current regulatory tools will be prevented by the technical characteristics of blockchain. Agencies further need to start analyzing code and software programming. Without doing so, most illegal activities on blockchain will remain safe. The same is true for all practices outside of blockchain which use the Internet. To date, antitrust and competition agencies refuse to analyze the programming of platforms and software. This creates a legal loophole and encourages companies to commit anti-competitive strategies precisely here. 232

Without fundamental research on this subject, palliatives will continue to be present, risking the survival of blockchain 233-- or antitrust [\*165] and competition law. 234 Some propose the creation of an identity management system so that the real identities of blockchain users can be revealed. 235 Others have suggested "adding a regulatory node in the blockchain" to spy on it 236 or imposing fines to the core developers when blockchain is used for illegal activities. 237 Going even further, it has been said that public blockchains "governed by international institutions from the legal tradition" such as the United Nations should be created. 238 But in fact, these solutions are either ineffective or would jeopardize the utility of the technology as its applications rely on the key characteristics that I have exposed in our introduction and that would be challenged by these various initiatives. Let us recall first and foremost that blockchain is a fundamental technology that may create good for the world. 239 The creation of safe harbors 240 and regulatory sandboxes 241 will enable competition agencies to respond quickly to the challenges posed by blockchain, but in the end, only a re-conceptualization of the law will provide a satisfactory answer. 242 Without it, antitrust and competition law will face a second legitimacy crisis arising from the absence of decentralized regulatory mechanisms. After all, how can decentralized transactions be properly regulated by pyramidal rules and institutions?

#### Failure of FTC legitimacy crushes the effectiveness of the agency.

William E. Kovacic 15, Global Competition Professor of Law and Policy at the George Washington University Law School and Non-Executive Director of the United Kingdom Competition and Markets Authority, “Creating A Respected Brand: How Regulatory Agencies Signal Quality”, George Mason Law Review, 22 Geo. Mason L. Rev. 237, Lexis

Introduction

One determinant of a government agency's effectiveness is its reputation, or "brand." Much like a commercial enterprise, an agency develops a brand that signals quality to various observers. A good reputation can help the agency recruit skilled personnel, gain deference from courts, build credibility with business managers, and build popular support that can yield larger budgets and enhancements to its powers. An agency with a strong brand stands a greater chance of being effective than one with a weak brand.

This Essay considers how branding can affect the performance of the Federal Trade Commission ("FTC") and other agencies responsible for economic regulation. It analyzes how investments in building a good brand enable the regulatory agency to signal quality to various observers - insiders such as agency staff and outsiders such as businesses, consumer groups, courts, and legislators. Part I of this Essay defines the concept of a brand for public agencies. Part II then discusses why an agency's brand can be important to its effectiveness and identifies what types of agency activities either enhance or degrade an agency's brand.

The examination of agency branding has several purposes. One aim is to improve our understanding of how public agencies build a reputation, and to study the role of reputation in determining effectiveness. A closely related goal is to give public officials a better understanding of how they should approach the task of deciding what their agencies must do to prosper.

A further aim is to underscore the impact of institutional design and managerial incentives on agency performance and to illuminate how design choices and incentive schemes influence the development of a well-respected, coherent agency brand. Various design choices - for example, whether to give the competition agency a single function or a multi-purpose substantive mandate, whether to govern the agency by a single executive or [\*238] by a board, whether to integrate the tasks of prosecution and adjudication in a single body or to unbundle them among distinct entities - affect the capacity of the agency to enhance the quality of its brand. Incentives that give incumbent leaders reason to make investments in long-term agency capacity and quality have the same effects.

I. Brands and Public Institutions

Public institutions, such as competition or consumer protection agencies, build reputations or "brands" that the agency's own employees and external observers associate with the agency. 1 Brands perform two functions for the public agency. The first function is informational. 2 A good brand conveys a good sense of what an agency does. It communicates, at least in a general way, the scope of the agency's responsibilities and the aims that motivate the agency in the exercise of its powers.

A brand also signals institutional quality. For an agency such as the FTC, the foundations for a good brand are sound substantive programs (e.g., cases, regulations, reports), sound procedures (e.g., meaningful disclosure of information, rigorous testing of evidence, regular assessment of outcomes), strong capabilities (e.g., deep expertise in economics and law), and a healthy culture (e.g., thoughtfulness, integrity, courage, and a commitment to continuous improvement). 3 For several reasons, explained below, a strong brand is a valuable asset for a regulatory agency.

#### FTC credibility’s key to global cooperation to contain spyware

Ari Schwartz 12, Deputy Director of the Center for Democracy and Technology, “Federal Trade Commission Reauthorization”, Hearing Before the Subcommittee on Interstate Commerce, Trade, and Tourism of the Committee on Commerce, Science, and Transportation United States Senate One Hundred Tenth Congress First Session, Government Printing Office, https://www.govinfo.gov/content/pkg/CHRG-110shrg75970/html/CHRG-110shrg75970.htm

Mr. Schwartz. Thank you very much, Chairman Dorgan. Thank you for holding this public hearing today and inviting CDT to participate.

As more consumers' services move online, consumer protection agencies are facing new challenges. The Federal Trade Commission has played a leadership role to meet these challenges, including overcoming such difficulties as locating the perpetrators of online schemes, keeping up with the rapid pace of technological evolution, and following the increasing financial motivation of Internet fraudsters.

In particular, the FTC has been the lead law enforcement agency in the world in the fight against spyware. Spyware has become one of the most serious threats to the Internet's future. Consumer Reports magazine estimates that consumers will lose $1.7 billion this year to spyware attacks alone. The magazine estimates that almost 1 million consumers simply gave up fixing their spyware-riddled computers and had to throw them away.

The good news is that consumer losses are down dramatically from 2006, when they peaked at $2.6 billion. The main reasons for this decrease in the spyware threat are, first, the improvement in anti-spyware technology; second, the public pressure on companies advertising with nuisance or harmful adware; and, finally, the enforcement of consumer protection law, led by the work of the FTC and some State attorneys general.

The FTC recognized the profound threat posed by the rising tide of spyware early, and actively moved to limit its spread. The Commission has been the leading enforcer against spyware, pursuing 11 cases to fruition in the past two and a half years, including three based, at least in part, on the petitions brought my organization, the Center for Democracy and Technology. CDT has learned, through our own research, that, as consumer fraud increases, the FTC's ability to work internationally becomes more important. Congress passed the SAFE WEB Act late last year to provide the FTC powers to promote international cooperation. The FTC's ability to use this new law, and staff resources that it will need, will be very important to monitor.

#### Spyware norms are solidifying but require strong U.S. leadership---success stops human rights crackdowns that escalate to global war

Marietje Schaake 11-10, International Policy Director at Stanford University’s Cyber Policy Center, Senior Advisor for Tech & Geopolitics at Eurasia Group, President of the Cyberpeace Institute, “We Need a New Global Standard to Curb Intrusive Spyware”, Financial Times, 11/10/2021, Lexis

After more than a decade, democratic governments are finally waking up to the hazards of commercial spyware. Recent media coverage has exposed how authoritarian regimes are using NSO Group’s Pegasus software to spy on journalists and politicians. The EU has now tightened its rules on the export of surveillance technology, and the US Department of Commerce last week determined that Israel-based NSO Group and three other hacking companies were “engaging in activities that are contrary to the national security or foreign policy interests of the United States”. However, these modest steps do not go far enough: what’s needed is a global standard to reign in technologies that violate the rights to privacy, free assembly as well as free expression.

From ~~crippling~~ [devastating] ransomware to questionable neural algorithms which use AI to identify suspicious non-verbal activity, to face and emotion-detecting technologies, there is a proliferation of software applications which conflict with liberal democratic values.

Traditionally, export controls are imposed on products that threaten national security, such as those that could boost the manufacture of nuclear weapons. The EU has recently extended its export regime to include spyware technologies, and added human rights violations as a criterion for potential harm. But since the NSO Group is based outside the EU, it lies outside Brussels’ jurisdiction. Without a wider international agreement, options for curbing these companies are limited.

The absence of global restrictions brings further credibility risks: how can liberal democracies lobby against human rights abuses by authoritarian regimes, when they are in effect permitting the development and marketing of digital weapons?

While restricting exports may help prevent the flow of intrusive technologies from democracies to dictatorships, imports and domestic uses remain unaddressed. The Pegasus Project revealed how, in the heart of the EU, Hungarian prime minister Viktor Orban has deployed commercial surveillance systems to target the few remaining independent media outlets within his own country.

Even some democratic states, such as the Netherlands, are guilty of procuring hacking and surveillance systems, but do not disclose which ones. Undoubtedly, they will claim these are only ever used to track down the most serious criminal and terror suspects. Yet this lends credibility and capital to an exceedingly harmful industry. If democracies are serious about curbing surveillance, they should exercise greater transparency and lead by example.

More than ad hoc measures or restrictions applied to individual companies, the US should partner with the EU and other willing countries to set a new international standard for the use of, and trade in, spyware. This would be a tangible outcome for President Biden’s upcoming Summit for Democracy, a US-led virtual meeting in early December aimed at preventing authoritarianism, fighting corruption, and promoting human rights.

Beyond spyware, a variety of other technologies deserve greater scrutiny and regulation. Illegitimate mass surveillance systems, facial recognition software and tools used for illegal cyber operations are traded across borders to facilitate repression, conflict, and instability. Poor cyber security is now a source of systematic risk which threatens national resilience. Greater co-ordination is necessary to ensure that technologies which are currently legal do not provide the means for widespread rights violations.

Moreover, an international agreement between democratic states against malicious uses of technology will help set multilateral norms. UN human rights experts this week raised the alarm once more about how tech companies serve as modern-day “mercenaries”. “Private actors provide a wide range of military and security services in cyber space, including data collection, intelligence and surveillance,” they warned.

In the future, a licensing requirement should be the default for tech companies that contravene the human rights standard of democratic states. This would ensure better controls of end use and exports. Regulation would also allow for mapping of how software is being deployed, and enable greater transparency. Equally, companies should strengthen their own risk-management. The very credibility of democracies is at stake when tech companies can undermine global security unhindered.

#### Containing spyware prevents the complete erosion of Indian democracy

Mauktik Kulkarni 21, Trained in Engineering at the University of Pune, Biophysics at the University of Illinois at Urbana-Champaign, and Neuroscience at Johns Hopkins University, Author at The Fair Observer, Writer for National Public Radio, All India Radio, BBC Marathi, National Geographic, LiveMint, Times of India, and The Hindu, “Why Americans Should be Alarmed by the Pegasus Spyware Controversy in India”, Scroll, 8/2/2021, https://scroll.in/article/1001373/why-americans-should-be-alarmed-by-the-pegasus-spyware-controversy-in-india

Under a collaboration called the Pegasus Project, 17 media organisations from around the world have recently released startling information about the way several governments have allegedly used spyware made by Israeli firm NSO to snoop on perceived adversaries.

Pegasus spyware, classified as a weapon to be used against criminals and terrorists, was allegedly used in India to spy on opposition politicians, bureaucrats and journalists, among others. While the Indian government has denied the charges, all the evidence points to the executive branch running amok.

The unravelling of Indian democracy offers important lessons for the United States, especially with recent revelations regarding former President Donald Trump’s final days in office and the reluctance of his Republican Party in the legislature to hold him accountable.

The destruction of Indian democratic institutions under Narendra Modi since he came to power in 2014 is well documented. If these new allegations are left unaddressed, which is the most likely outcome, their chilling effect on society will ensure India’s swift decline into a sham democracy like Russia.

If true, the implications of such surveillance are not limited to political, bureaucratic, journalistic, or judicial opponents of the current government. They will affect the economic climate, open-minded academic inquiry, and spirited debates among students and civil society, which are all essential for a thriving democracy.

#### Indian backsliding obliterates transnational containment of disease, pollution, and nukes---extinction

Akshai Vikram 21, Doctoral Candidate in Security Studies at the University of Central Florida, Roger L. Hale Fellow at the Ploughshares Fund, M.A from Johns Hopkins University SAIS and B.A. from Johns Hopkins Baltimore, “Indian Democracy Is On The Ropes. The US Must Act”, Defense One, 6/12/2021, https://www.defenseone.com/ideas/2021/06/indian-democracy-ropes-us-must-act/174679/

Even as the U.K. hosted President Biden on a visit to “rally the world’s democracies,” Britain’s reopening is under threat from a new strain of the COVID-19 virus. This new variant, which originated in India, is directly related to Narendra Modi government’s disappointing and less-than-democratic handling of the pandemic. The new coronavirus strain is just one example of the threat that awaits U.S. interests if India, the world’s largest democracy, should complete its slide into authoritarianism. Thankfully, the U.S. still has a number of options to combat, if not prevent, democratic backsliding in India.

Democratic or not, India’s relevance is assured. Its size alone guarantees this. India’s largest state, Uttar Pradesh, boasts a population of over 200 million people, larger than any individual country in Africa, Europe, or Latin America. This hard fact has led Republicans and Democrats to agree on India’s importance, with both sides emphasizing its potential role as a regional counterweight to China. The Trump administration’s National Defense Strategy stressed the benefits of a “free and open Indo-Pacific region” and promised to “strengthen our alliances and partnerships in the Indo-Pacific…to preserve the free and open international system.” The Biden administration made similar pronouncements in its Interim National Security Guidance, saying it will “reinvigorate and modernize our alliances and partnerships,” partially to “hold countries like China to account.” The Biden administration specifically promised to “deepen our partnership with India” as part of this effort.

This strategic logic presumes the United States will be dealing with a democratic India that prefers a “free and open international system,” rather than an authoritarian India that domestically more closely resembles “countries like China” than it does a full-functioning democracy.

But the pace of Indian democratic backsliding has noticeably quickened. It was an ominous warning when Narendra Modi, who was banned from the United States for turning a blind eye to a virtual pogrom against Muslims while chief minister of Gujarat, was elected Prime Minister in 2014. After seven years in power, Modi and his Hindu nationalist Bharatiya Janata Party, or BJP, have further eroded Indian democracy, leading the nonprofit Freedom House to rank India as “partly free” for the first time in 30 years.

Modi’s authoritarian actions have ranged from the pseudo-scientific and laughable to the egomaniacal and lethal. Most notoriously, the BJP sought in 2019 to openly discriminate against Muslim immigrants. The law passed, and when it drew mass protests across the country, the BJP met them with authoritarian force. Later in the year, India stifled the Internet in Kashmir.

India’s democratic backsliding has also hurt its lackluster COVID-19 response. Modi’s BJP has propagated a number of inane myths about the disease, especially quack cures. Party leaders from Modi on down have set bad examples, appearing at large rallies, without masks, and turning the Hindu Kumbh-Mela festival into a superspreader event because “the faith in God will overcome the fear of Covid-19.”

The Modi government has also moved to stifle dissent, especially investigative journalism on its pandemic response. In April, the chief minister of Uttar Pradesh threatened to seize the property of people propagating “rumors” of oxygen shortages. And just last month, when information on the Indian variant was desperately needed, a top Indian virologist on a government panel to investigate the variant suspiciously resigned, after he had been quoted in the New York Times criticizing the government. All this suggests that continued democracy in India is no sure thing.

A fully authoritarian India could take a number of forms, with disparate effects on its relationship with the United States. Shared concerns about China could lead the U.S.-India relationship to mirror the path of American relations with Vietnam, where the two countries have managed to work constructively despite their tempestuous past and Vietnam’s one-party rule.

Perhaps more likely, India under Modi could present a challenge not dissimilar to that of the Philippines under Duterte, a country too strategically important for the U.S. to ignore in its efforts to counter Chinese influence in the region, but one whose authoritarian streak routinely impedes greater cooperation.

Most detrimentally for the United States, India could even one day seek to follow the path of Russia, prioritizing allegiance to right-wing authoritarian ethno-nationalism rather than its historical and geographic disputes with China. This worst case scenario is not as far-fetched as it once might have seemed: in the last few months alone, Russia and India have taken eerily similar steps to stifle Twitter in response to domestic critics.

No matter how authoritarian the government in New Delhi becomes, the United States will need to engage with it constructively on certain issues, especially transnational threats like climate change and nuclear weapons. Fortunately, the Biden administration has already demonstrated its capability to do just that by cooperating constructively with Russia on nuclear arms control and with both China and Russia on climate change, while at the same time confronting both countries on other issues as necessary.

However, there is no scenario where further democratic backsliding in India would make life easier for the United States. At the very least, an increasingly authoritarian Indian would jeopardize the push for cooperation among ‘like-minded’ democracies, especially when it comes to countering China.

International partnerships, like the recent project of coordinated vaccine production from the emerging ‘Quad’ countries—India, Australia, the U.S., and Japan—could conceivably continue even if India moves further from the democratic camp. Even so, they would surely be less resilient if based solely on common interests rather than common values. Efforts by the European Union to increase ties to India would also likely be undermined.

#### Spyware causes command-and-control failures---nuclear war

Eric Schlosser 16, Investigative Journalist and the Author of Command and Control, “World War III, By Mistake”, The New Yorker, 12/23/2016, https://www.newyorker.com/news/news-desk/world-war-three-by-mistake

The harsh rhetoric on both sides increases the danger of miscalculations and mistakes, as do other factors. Close encounters between the military aircraft of the United States and Russia have become routine, creating the potential for an unintended conflict. Many of the nuclear-weapon systems on both sides are aging and obsolete. The personnel who operate those systems often suffer from poor morale and poor training. None of their senior officers has firsthand experience making decisions during an actual nuclear crisis. And today’s command-and-control systems must contend with threats that barely existed during the Cold War: malware, spyware, worms, bugs, viruses, corrupted firmware, logic bombs, Trojan horses, and all the other modern tools of cyber warfare. The greatest danger is posed not by any technological innovation but by a dilemma that has haunted nuclear strategy since the first detonation of an atomic bomb: How do you prevent a nuclear attack while preserving the ability to launch one?

“The pattern of the use of atomic weapons was set at Hiroshima,” J. Robert Oppenheimer, the scientific director of the Manhattan Project, said in November, 1945, just a few months after the Japanese city’s destruction. “They are weapons of aggression, of surprise, and of terror.” Nuclear weapons made annihilation vastly more efficient. A single bomb could now destroy a target whose elimination had once required thousands of bombs. During an aerial attack, you could shoot down ninety-nine per cent of the enemy’s bombers—and the plane that you missed could obliterate an entire city. A war between two countries with nuclear weapons, like a Wild West shoot-out, might be won by whoever fired first. And a surprise attack might provide the only hope of national survival—especially for the country with an inferior nuclear arsenal.

#### Spyware collapses the free press

Samuel Woodhams 21, Digital Rights Lead at the Internet Research Firm and VPN Review Website, Top10VPN, Digital Rights Researcher and Freelance Journalist, “Spyware: An Unregulated and Escalating Threat to Independent Media”, Center for International Media Assistance, 8/25/2021, https://www.cima.ned.org/publication/spyware-an-unregulated-and-escalating-threat-to-independent-media/

Introduction

The digital surveillance industry is a broad and largely opaque network of companies that produce technology to monitor and track individuals. From tools that surveil citizens’ social media profiles to devices that indiscriminately monitor the activity of nearby mobile phones, the range and sophistication of technologies available has never been greater.

While their delivery methods and capabilities vary, all spyware products are designed to infect a user’s device and monitor their digital activity while remaining undetected. Typically, this means an infiltrator can covertly access a target’s phone calls, text messages, location, internet searches, and stored data. Even more troubling is the fact that most of the products are capable of evading antivirus tools that are specifically designed to detect malicious activity.

The rapid expansion of the digital surveillance industry has enabled governments around the world to acquire new technologies to monitor journalists, silence independent journalism, and control the flow of information. As of April 2021, the Committee to Protect Journalists (CPJ) had identified 38 cases of spyware targeting journalists, commentators, and their associates.1 The University of Toronto’s Citizen Lab suggests the true figure could be over 50.2 There are reports of spyware targeting journalists working with international media outlets, including Al Jazeera and the New York Times,3 as well as reporters and editors working for the US-based Ethiopian diaspora outlet Oromia Media Network, Colombia’s Semana magazine, and Mexico’s Proceso.4

In July 2021, French-based nonprofit Forbidden Stories, Amnesty International, and a consortium of 80 journalists from 17 outlets launched the Pegasus Project, a collaborative international investigative journalism initiative aimed at uncovering the extent to which Israeli spyware company NSO Group’s software is used by governments to target journalists, human rights activists, lawyers, and political dissidents.5 NSO Group’s signature product, Pegasus, named after the mythical winged horse, is one of the most powerful spyware tools ever deployed.6 Investigative journalists with the Pegasus Project revealed that at least 180 journalists were selected as potential targets of surveillance by government clients of NSO Group.7 The number of people who were attacked by the spyware infecting their phones remains unclear. NSO Group has repeatedly denied wrongdoing, claiming it sells software to carefully vetted clients to ensure its technology is used only for law enforcement and anti-terrorism purposes.8

This is not the first time that NSO Group has been accused of abetting human rights violations. In 2019, WhatsApp filed a lawsuit against NSO Group, accusing the company of exploiting a vulnerability in the app and hacking into 1,400 accounts in 20 countries.9 More than 100 of these accounts are thought by WhatsApp to have belonged to journalists and human rights defenders, although the lawsuit did not disclose the identities of the victims. As a result of these allegations, the US Department of Justice reportedly renewed its investigation into the company in March 2021.10

There is no question that spyware is being used by governments to identify, monitor, and ultimately silence journalists. Ronald Deibert, director of Citizen Lab, a research organization using digital forensics to verify the use of spyware against journalists, summarizes the danger this way:

“The reckless and abusive use of commercial spyware to target journalists, their associates, and their families adds to the numerous and growing risks that journalists worldwide now face. Media organizations and investigative journalists are valuable “soft” targets who control important information, including information on sources, that threaten powerful actors. Thanks to companies like NSO Group, unscrupulous dictators and autocrats now have a powerful tool to aid in their sinister aims to stifle dissent and quell controversial reporting.”11

When the devices and digital accounts of journalists and their sources are vulnerable to surveillance, the ability of journalists to carry out their newsgathering function is significantly diminished.12 Journalists who fear they are a target of surveillance may self-censor. Credible sources may be less likely to talk to the press, and media outlets may struggle financially to keep pace with the increasingly sophisticated threats facing their staff.

#### Extinction

Marie Davidsen Buhl 21, Fellow at Effective Altruism, “Towards a Longtermist Framework for Evaluating Democracy-Related Interventions”, Rethink Priorities, 7/28/2021, https://rethinkpriorities.org/publications/towards-a-longtermist-framework-for-evaluating-democracy-related-interventions

1.6 Liberalism

What is this feature?

Definition: There is rule of law and individual rights and freedoms for the decision-making group, which limit the power of the government.

Clarifications:

Liberalism both protects citizens against government despotism and protects minorities from tyranny of the majority. As such, for a society to high high levels of liberalism, it must be the case that liberal rights and freedoms are in place even if the majority of the population are in favour of violating them (for example, even if a majority ethnicity is in favour of removing legal protections for a minority group, the government would not be able to do so).

The liberalism presented here is a relatively thin notion of liberalism, close (though not identical to) the concept of political liberalism. As such, it does not include things such as a liberal market economy or anti-paternalism.

As was the case of competitive democracy, our definition of liberalism has the counterintuitive implication that a society can have a maximal level of liberalism even if it does not grant liberal rights to the majority of the population (e.g., a society with liberal rights for property-owning white men, but there is little legal protection for other groups and a slave economy). However, we do not mean to say that such a society should be classified as a liberal democracy (see Appendix C), or even liberal in the everyday sense of the word.

What low levels of liberalism might look like: Parliamentary sovereignty, tyranny of the majority, authoritarian democracy, totalitarianism.

Components

Rule of law: Transparent laws, equality under the law, de facto law enforcement and access to legal remedy.

Checks and balances: There are institutions in place to restrain the power of governments, e.g., separation of powers.

Constitutional limits on government power to preserve civil rights, including freedom of conscience, religion, speech and assembly, and right to privacy.

Minority rights.

Pluralism: Toleration of many different opinions and ways of life.

Liberal norms amongst the decision-making group (e.g., voters) and the representatives (e.g., support for liberalism).

Illustrative interventions related to this feature

(Note that we are not necessarily endorsing these interventions or organisations):

Preventing or prosecuting government corruption.

Prosecuting human rights violations, e.g., via funding Amnesty International.

Investigative journalism, e.g., the Global Investigative Journalism network (Hillebrandt, 2020).

Protecting freedom of press, e.g., The Reporters Committee for Freedom of the Press (Hillebrandt, 2020).

1.7 Inclusion

What is this feature?

Inclusion has two parts:

(1) Most or all beings who are capable of participating in group decision-making and are affected by policy decisions are allowed to participate in group-decision-making (i.e., most or all beings which are in both the decision-capable group and affected group are also in the decision-making group).

(2) The interests of most or all of the beings who are affected by policy decisions are taken into account during those decisions (i.e., the moral circle includes most or all of the affected group).

Clarifications:

Inclusion can be specified with respect to any of the features, e.g., inclusion with respect to competitive democracy might be high (if there is universal suffrage) in the same society/institution where inclusion with respect to responsiveness is low (if the opinions of one group are systematically ignored when making actual policy decisions)[6:1].

A maximally inclusive society would be one in which the following conditions are met:

The decision-making group (e.g., voters) contains all beings who are both in the moral circle and are capable of decision-making

The moral circle includes everyone in the affected group.

This has the implication that a maximally inclusive society would give voting rights and liberal rights to, for example, people in other countries, under-18s, felons and others who don’t currently have such rights in most liberal democracies.

What low levels of inclusion might look like: Aristocracy, limited franchise, no representation of non-voting beings.

Components

Proportion of the population that has voting rights, liberal rights, etc., and absence of barriers to those rights being upheld in practice.

Representation for the interests of non-voting beings (e.g., through lobbying/interest groups, councils, official positions such as ministers, or just individual voters taking those beings’ interests into account)

Illustrative interventions related to this feature

(Note that we are not necessarily endorsing these interventions or organisations):

Widening the franchise, e.g., to 16-year-olds, felons, or non-citizen residents.

Protecting minority voting rights, e.g., preventing gerrymandering through redistricting (Hillebrandt, 2020).

Institutional reforms to represent future generations (see e.g., John & MacAskill, 2020).

Interventions related to moral circle expansion.

2. Potential intermediate goals for longtermists

This section covers ways in which each of seven potential intermediate goals may:

affect the long-term future

be affected by changes in a society’s level of the features of liberal democracy as discussed above.

A potential intermediate goal for longtermists is a goal we could pursue to potentially increase the value of the far future. Fulfilling a goal is not obviously of positive expected value; indeed, some intermediate goals may be ambiguous or negative for the far future. We cache out the costs and benefits of pursuing each goal into four broad categories: existential risk reduction, trajectory change, speeding up development and meta-longtermism[1:1]..

The potential intermediate goals we identify are:

Reducing great power conflict

Intellectual progress

Moral circle expansion (MCE)

Economic growth

Preventing authoritarianism

Preventing infohazard proliferation

Building effective altruism

We chose these particular intermediate goals because they seemed (a) plausibly substantially affectable by some democracy-related interventions and (b) relatively clearly relevant to the long-term future. But the choice was somewhat arbitrary and partly for illustrative purposes; there are also other goals that meet those two criteria, and these seven are not necessarily the most important for evaluating a given democracy-related intervention. We elaborate on this in Section 4 (Directions for further research). Finally, we focus only on how features of democracy affect potential intermediate end goals. However, in reality there are likely bidirectional relationships and feedback loops, with some intermediate goals impacting particular features of democracy.

2.1 Reducing great power conflict

What is this potential intermediate goal?

Reducing the probability of conflict between major powers - e.g., China and the USA.

What are some ways great power conflict might affect the long-term future?

Existential risk reduction and trajectory change: Great power conflict is often seen as an existential risk factor. That is, it increases the probability of existential catastrophes indirectly rather than directly. This operates through multiple mechanisms - for instance, great power conflict might increase the probability of an AI arms race, make nuclear war more likely, or make global co-operation on various existential risks harder[9]. Thus, reducing the likelihood of great power conflict could reduce existential risk. Additionally, conflict between great powers could alter the global hegemony, changing humanity's long-run trajectory. Whether this is positive or negative depends on the particular trajectory change.

What are some ways democracy might affect great power conflict?

Democracies have historically engaged in war less often than non-democracies. This may be mere correlation (e.g., it may be confounded by GDP). But proponents of democratic peace theory argue that the correlation is in fact causal. Below, we briefly overview some possible, speculative ways in which various features of liberal democracy might indeed reduce the likelihood of war.

Competitive democracy, responsiveness, participation and accuracy: Leaders in countries high in these features must follow the demands of voters more closely, in order to be re-elected. That increases the influence of public opinion on policy decisions, such as in decisions on conflict. Therefore, if voters are more averse to war than leaders are, increasing competitive democracy, responsiveness, participation, and accuracy would, all else equal, make war (including great power conflict) less likely. Conversely, if voters are more inclined towards war than leaders are, increasing these features would, all else being equal, make war more likely. Whilst we tentatively believe that voters are more aversive to war than leaders are, there are likely also other causal mechanisms taking place[10]. Thus, we only weakly suggest that increasing these features is positive for reducing great power conflict.

Liberalism: Democratic peace theory and liberal peace theory are used somewhat interchangeably. Perhaps what really makes democracies less likely to go to war is their liberal nature, rather than anything about voting in particular. Specifically, norms around resolving differences through deliberation, pluralism, and a respect for alternative viewpoints may prevent disagreement escalating to violence. Such norms could ultimately make war and great power conflict less likely.

Inclusion: Countries low in inclusion will likely focus primarily on their own country's citizens (the decision-making group) before others (the wider affected group). This would increase nationalistic sentiment. In contrast, highly inclusive societies are likely to be more conducive to a cosmopolitan mindset. Nationalistic countries would also be more likely to go to war with other countries, compared to cosmopolitan societies. Thus, increasing inclusion will probably decrease the chance of great power conflict.

#### The plan solves:

#### 1. UPDATING.

#### Prohibiting violations in the infrastructure level establishes a collaborative relationship between blockchain and antitrust that infuses technological principles into legal enforcement.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 247-249

1.2 Enforcement

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.14 Nevertheless, because this essential feature makes markets more fluid and mitigates information asymmetry,15 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 11, 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 ecosystems 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.

#### 2. LEADERSHIP.

#### Going bold builds FTC’s brand and secures a foothold for future experimentation.

Philip J. Weiser 17, Hatfield Professor of Law and Dean Emeritus at the University of Colorado Law School, Former Senior Advisor for Technology and Innovation to the National Economic Council Director in the White House, “Entrepreneurial Administration”, Boston University Law Review, 97 B.U.L. Rev. 2011, December 2017, Lexis

Introduction

A core failing of today's administrative state and modern administrative law scholarship is the lack of imagination as to how agencies should operate. On the conventional telling, public agencies follow specific grants of regulatory authority, use the traditional tools of notice-and-comment rulemaking and adjudication, and are checked by judicial review. In reality, however, effective administration depends on entrepreneurial leadership that can spearhead policy experimentation and trial-and-error problem-solving, including the development of regulatory programs that use non-traditional tools.

Entrepreneurial administration takes place both at public agencies and private entities, each of which can address regulatory challenges and earn regulatory authority as a result. Consider, for example, that Energy Star, a successful program that has encouraged the manufacture and sale of energy efficient appliances, is developed and overseen by the Environmental Protection Agency ("EPA"). 1 After the EPA established the program, Congress codified it and, eventually, other countries followed suit. 2 By contrast, the successful and complementary program encouraging the construction of energy efficient buildings, the well-respected Leadership in Energy and Environmental Design ("LEED") standard, was developed and is overseen by a private organization. 3 After it was developed, a number of governmental authorities endorsed it and [\*2013] have encouraged LEED-certified construction projects with both carrots 4 and sticks. 5 Significantly, although neither the Energy Star program nor the LEED standard were originally anticipated by any regulatory statute, both have had tremendous impacts.

The Energy Star and LEED case studies exemplify the sort of innovative regulatory strategies taking root in the modern administrative state. 6 Despite the importance of entrepreneurial administration in practice, scholars have failed to examine the role of entrepreneurial leadership in spurring policy innovation and earning regulatory authority for an agency (or private entity). 7 This oversight is most unfortunate in the case of technologically developing fields where experimental regulatory strategies - as opposed to traditional notice-and-comment rulemaking or adjudication - are often essential. 8 In short, administrative law needs an account of agency action that explains why entrepreneurial leadership matters in government and how agencies should operate. 9

[\*2014] This Article: explains that the conventional view of agency behavior - following the specific direction of Congress or the President and using notice-and-comment rulemaking or adjudication processes - does not capture how public agencies and private entities develop innovative regulatory strategies and earn regulatory authority as a result. In particular, this Article: explains how governmental agencies like the EPA and private entities like the United States Green Building Council ("USGBC") (which oversees the LEED standard) depend on entrepreneurial leadership to develop experimental regulatory strategies. It also explains how, in the wake of such experiments, legislative bodies have the opportunity to evaluate regulatory innovations in practice before deciding whether to embrace, revise, reject, or merely tolerate them. To be sure, such experimental strategies are not always preferable to traditional administrative rulemaking and adjudication, but considering experimental strategies and evaluating whether they would be more effective than traditional regulatory approaches is.

Legal scholarship on experimental regulation is well-developed in the context of states serving as laboratories of democracy. 10 Scholars have not, however, discussed the significant role that federal agencies and private bodies can play in experimenting with regulatory strategies in advance of congressional action. 11 Scholars have also failed to examine the role of entrepreneurial leadership in developing successful experiments. This Article: does just that, highlighting the importance of entrepreneurial leadership in government, discussing a number of [\*2015] emerging regulatory experiments, and suggesting how Congress should evaluate such experiments.

This Article: proceeds in four parts. Part I examines the traditional model of regulation and the emerging alternative models of agency action through co-regulation, developing best practices through convening, and encouraging private regulation. In so doing, it underscores that entrepreneurial leadership and a culture of experimentation and trial-and-error learning is essential to developing the best solution. Part II discusses the relevant criteria for evaluating such experiments and examines potential objections to the earned regulatory authority model. Part III discusses four case studies of experimental regulatory strategies: (1) the USGBC's development of the LEED standard; (2) the Federal Trade Commission's ("FTC") oversight of information privacy and data security practices; (3) the National Institute of Standards and Technology's ("NIST") development of a strategy for cybersecurity readiness; and (4) the Department of Health and Human Services' ("HHS") oversight of electronic health records. In all of these cases, the private body or federal agency acted to oversee an emerging technology or issue (often in advance of explicit congressional direction and guidance), allowing Congress to observe the strategy in action and evaluate it after the fact. Part IV examines the concept of policy entrepreneurship, explaining both the barriers and opportunities it faces in the modern administrative state.

I. The Traditional Model and Emerging Realities

The traditional model of regulation relies on notice-and-comment rulemaking and agency adjudication. 12 Under this model, the output - the starting point for traditional administrative law analysis - is generally a form of positive law developed and enforced by a government agency through traditional tools (rulemaking or adjudication). 13 As Professors Charles Sabel and William Simon have observed, this model, "pejoratively called command and control, is identified with rule-bound bureaucracy and deference to ineffable expertise." 14

The traditional model can be depicted neatly as a hierarchy. 15 Congress sets a specific policy direction and empowers an administrative agency to implement that policy. The agency, in turn, uses either its rulemaking or adjudication authority to implement that direction. Finally, owing to the agency's expertise and congressional authorization, courts review the agency's action with deference.

[\*2016] Driven by technological changes and globalization, regulatory agencies increasingly are looking to alternative regulatory strategies, many of which fit under the "New Governance" label. 16 In some cases, innovative regulators experiment with new approaches to address emerging issues and fill gaps in the existing regulatory regime. In other cases, an agency might experiment with a co-regulatory strategy (where the agency integrates its authority with private sector efforts); exercise its authority in creative ways, such as developing best practices through convenings; or rely on private regulation. In that last category, as is the case with Energy Star, the government agency (or private entity, for that matter) can certify compliance with best practices, thereby sharing valuable information with the public and shaping norms of behavior. 17 In each of the above examples, the regulatory agency acts not within a hierarchy, but within a network. 18

[\*2017] The traditional, hierarchical model follows a familiar, step-wise approach to regulation. 19 The first step is establishing a standard of conduct. 20 The second step is implementing that standard of conduct, generally through a monitoring regime. 21 The final step is enforcement, in which parties are sanctioned for any failures to comply with the rules. 22 This model of regulatory action still holds strong in some areas, but it is no longer - and should not be - the exclusive strategy for addressing emerging policy issues.

In the emerging, networked environment, regulatory agencies find themselves with a range of options and tools for developing standards of conduct, monitoring behavior in the marketplace, and enforcing or encouraging compliance. The conversation around such emerging solutions has taken a number of forms, sometimes under the headings of "responsive regulation," "experimentalism," or "New Governance." However framed, there is a pressing need for more adaptable approaches that can operate effectively in technologically changing environments or in fields where the circumstances differ across geographic (or other) contexts. 23 To address emerging challenges, regulatory agencies will increasingly be called upon to experiment with non-traditional regulatory strategies, requiring legislatures to monitor and evaluate the effectiveness of innovative regulatory initiatives after the fact.

A. The Limits of the Traditional Regulatory Approach

The traditional model of regulation is coming under strain in the face of increasing globalization and technological change. 24 Consider, for example, the traditional model of drug and medical device approval used by the Food and Drug Administration ("FDA"). The legacy model of regulation envisioned the FDA reviewing a drug and making an up-or-down decision on whether to approve the marketing of the drug. 25 By putting all of the pressure on the front [\*2018] end (ex ante), the legacy model creates two sets of challenges: (1) the pre-approval process takes a long time, costs a lot of money, and, in some cases, unnecessarily delays access to potentially beneficial drugs; and (2) the lack of a post-approval review process allows drugs to "be marketed despite evidence that they were doing unanticipated harm." 26 Unfortunately, the second type of error - a lack of responsiveness to on-the-ground realities - reinforces the first type of error, creating more pressure on the FDA to withhold approval until it satisfies itself that the relevant drug or device will not cause harm. 27

Congress is well aware of the limits of traditional ex ante regulation. In the food and drug arena, it has worked to update the FDA's model of regulation. In the Food and Drug Administration Amendments of 2007, for example, Congress gave the FDA increased flexibility to approve drugs and require ongoing research as to how the drugs work, called for an improved Adverse Event Report System at the agency, and mandated a framework for monitoring drug efficacy in practice. 28 More recently, the FDA established fast-tracks for approving drugs and medical devices that promise life-saving breakthroughs. 29 As the FDA explained with respect to the medical device review process, "reducing premarket data requirements while increasing postmarket requirements for devices subject to a [Pre-Market Approval], when appropriate, can assist the FDA in making medical devices available to patients sooner than if following the traditional premarket review pathway." 30

[\*2019] This Article: , while sympathetic to the need to reform existing regulatory structures, does not focus on this issue. 31 Rather, it explains how considerable flexibility for a range of alternative options exists within current structures and is already being used by agencies and private entities to great effect. As such, this Article: describes the underappreciated model of earned regulatory authority, calls for a more self-conscious use of this model, and explains how agencies can spearhead and implement this model successfully through entrepreneurial leadership and a culture of trial-and-error problem solving. 32

The role of a more imaginative approach to regulation relates back to the "responsive regulation" movement led by Ayres and Braithwaite. On their account, regulatory strategies can be conceptualized as an "enforcement pyramid," with "persuasion" on the bottom and "license revocation" at the top (as the regulatory equivalent of the death penalty for a regulated firm). 33 In all cases, a responsive regulation approach emphasizes dialogue and engagement around the impact of regulatory efforts in practice. 34 In so doing, it underscores that regulators need not always use their traditional tools (notice-and-comment rulemaking and adjudication). Rather than reflexively adopting traditional approaches, regulatory agencies can (1) embrace and oversee self-regulation (enforced self-regulation or co-regulation), (2) convene stakeholders to develop best practices, or (3) persuade parties to develop private regulatory initiatives. The next three Sections discuss each strategy in turn.

[\*2020]

B. The Promise of Co-Regulation

Even when using its traditional authority, an agency can operate more nimbly and effectively by integrating its efforts with private bodies who have expertise in the field. Where that integration involves the explicit embrace, oversight, and enforcement of actions by private bodies, the model of regulation is aptly described as "co-regulation." 35 For a successful use of co-regulation, consider the FCC's use of frequency coordinators to assign rights to use the wireless spectrum. As I have explained previously:

One notable self-regulatory program that the FCC has overseen is the use of frequency coordinators, which manage voluntary cooperation in the use of point-to-point microwave links and private land mobile radio systems. In that context, the coordinator evaluates requests for new licenses and certifies that such new licenses will not cause undue interference to established users. Consequently, while the FCC is the authority that grants or denies licenses as a formal matter, it routinely relies on and defers to the judgment of the frequency coordinator. This deference to the frequency coordinator facilitates cooperation around the use of the relevant licenses. 36

The importance of this co-regulation model is that the FCC's delegation of authority enables practical problem-solving on the ground by the frequency coordinator. As Dale Hatfield, a former Chief Engineer at the FCC, explained, this system works because it encourages the local engineers to "sit down together, solve these problems, and say let's figure out how to do it," limiting the need for the FCC to use its backstop authority. 37

The FTC's partnership with the Better Business Bureau's National Advertising Division ("NAD") operates in a functionally similar fashion to the FCC's use of frequency coordinators. 38 Notably, the NAD has developed an [\*2021] effective model of dispute resolution around misleading advertising issues, deciding an array of issues and referring cases, where necessary and appropriate, to the FTC. 39 Because the NAD has developed such a trusted program, FTC leaders have praised its work and relied on it to carry the laboring oar in this area, 40 leaving the FTC's residual authority as a backstop. In particular, the NAD refers cases to the FTC where a party refuses to participate in its process or comply with a decision. 41

Learning from the NAD model, the European Union is working with the European Advertising Standards Alliance to develop a similar approach to overseeing false advertising claims. 42 In this case, however, the governmental authority is actively involved in developing and supporting this body rather than integrating its work after the body developed on its own. 43 In short, government can either embrace existing bodies as part of a co-regulation strategy or stimulate and steer the development of new ones.

C. The Role of Best Practices and Agency Convened Efforts

For many regulatory agencies, the opportunity to act as a "convenor," to develop best practices, and to create "soft law" or norms is an important part of their mission. As former FTC Chair Bill Kovacic explained with regard to the FTC, "Congress gave the FTC capacity to serve as a convenor - to engage in a diverse array of activities that facilitate norms development," including "what we now call "soft law' measures (e.g., self-regulatory standards, proposed guidelines)." 44 In particular, Congress specifically authorized the FTC to collect information and develop reports on topics not immediately related to cases or regulatory matters before the Commission. 45 In Kovacic's view, the FTC has used its convening authority effectively, "improving understanding, building consensus, and supplying focal points for norms development" through thoughtful reports that distill key issues. 46

[\*2022] For a range of agencies, the role of developing and championing best practices is on the rise, 47 reflecting a number of trends. First, many agencies find themselves without sufficient authority to promulgate binding rules as new technologies emerge. Second, even where an agency may have formal authority, it might be reluctant to use it in the face of an emerging technology where it needs to act more quickly than formal notice-and-comment rulemaking allows. Third, the agency may lack sufficient confidence that a prescriptive rule is warranted and thus leaves open a range of options, merely narrowing the field of possibilities and pointing entities in the right direction. 48

To develop best practices effectively, an agency must invest significant resources in the enterprise. Stated generally, this effort involves "horizontal modeling rather than hierarchical direction" and is "a method of regulation in which central administrators provide advice and disseminate information, instead of mandating a one-size-fits-all regulatory scheme." 49 In an increasing number of cases, best practices focus not only on U.S. firms, but also those across the world, requiring that the regulatory agency coordinate its international counterparts. 50 Moreover, to develop emerging best practices, it is important that agency staff take the time to learn the details of "the regulated entities first-hand, develop a strong sense of emerging processes, and … [share] knowledge of these processes with staff at other locations." 51

Where an agency (or a private entity) identifies and disseminates a best practice, it acts as a "norm entrepreneur." 52 As discussed in Part III, the FTC has performed this role in the online privacy and data security contexts, articulating and recommending a set of best practices. 53 One virtue of this role - like soft law more generally - is that it may well make the adoption of more formal regulation less necessary. 54 To the extent that the articulation of the relevant [\*2023] norm itself does not overcome the collective action problem and catalyze compliance with a norm, a certification regime (like Energy Star) for those who are compliant (along with naming and shaming) might do so.

One path for catalyzing compliance, which can be labeled as "jawboning" or "threats," involves the use of apparent legal authority - say, opening up an investigation - to achieve a desired result. In a provocative article, Professor Tim Wu defends the use of "threats," calling for norm entrepreneurship by agency leaders and the development of limiting principles for the practice. 55 In criticizing Wu's argument, some commentators have characterized it as condoning lawless conduct. 56 In that spirit, I previously criticized the FCC's use of its merger review authority to secure outcomes in other contexts that were not specifically related to the merger. 57 I also called the FCC's use of "arm twisting" controversial when done without full transparency and a willingness to take formal action. 58 Finally, I noted that the tactic is "dangerous" if the agency is not willing and able to follow through with formal regulation if the called-for behavior does not take place, as the meaningless nature of the threat will become plain and the agency will lose credibility. 59

Any agency that develops best practices should be aware of the potential risks of such an effort. For starters, if an agency's identified best practices are allowed to become stale, some private actors might stick with them and fail to improve their practice. Second, given that there is no judicial oversight of best practices development, 60 it is important that agencies pre-commit to a level of procedural regularity and fairness in how they develop them. Third, without either carrots or sticks related to best practices, an agency may find it difficult to generate attention or catalyze compliance. 61

[\*2024]

D. Private Regulation

As exemplified by the LEED building standard, a private regulatory initiative can drive behavior toward a social goal. Given the need to respond to emerging issues more adaptably than traditional regulatory processes allow, public agencies may be tempted to rely on private bodies. 62 In the internet environment, for example, a range of issues are managed by multi-stakeholder organizations, which use "dialogue to develop voluntary norms and best practices." 63 Similarly, in the environmental field, a range of "private activity generates pressure on environmental behavior without resulting in a statute, regulation, agency enforcement action, or court decision for review by scholars and policymakers." 64

The role of private, multi-stakeholder efforts in internet governance is the U.S. government's official policy. 65 Since the development of the internet's basic technical standards in the 1980s and 1990s by groups like the Internet Engineering Task Force ("IETF") and the World Wide Web Consortium ("W3C"), "these entities have largely established the norms and standards for the global internet, but they are little known to the general public." 66 The U.S. government recently fully embraced this model, recognizing the need for internet policy and governance issues to be developed in an adaptable and global fashion. 67 This embrace includes supporting the Internet Corporation for Assigned Names and Numbers ("ICANN") as an independent, international body to oversee the internet's numbering system. 68

In the internet context, two private regulatory efforts bear notice, as both exist in tandem with legal and regulatory oversight. First, the Copyright Alert System (overseen by the Center for Copyright Information) was a cooperative effort between broadband providers and content providers focused on addressing [\*2025] piracy in peer-to-peer networks. 69 This initiative, which existed for four years, 70 provided some measure of guidance to the broadband industry on what sort of "repeat infringer" policy was reasonable. 71 In light of recent court decisions holding a broadband provider liable for failing to develop an appropriate repeat infringer policy, the guidance from this organization could be considered best practice and protect a provider from liability, 72 although its cessation of operations may limit its impact. Second, the Broadband Internet Technical Advisory Group ("BITAG") is a multi-stakeholder organization that seeks to define best practices and broadband network management ahead of any FCC action under its network neutrality regime. 73 In its most recent regulatory decision on network neutrality, the FCC highlighted its openness to "obtaining objective advice from industry standard-setting bodies or similar organizations," specifically citing BITAG as an example. 74

Both the Center for Copyright Information and BITAG relied on a mix of industry representatives and public interest advocates and operated in an open, transparent, and consensus-based manner. 75 Like frequency coordinators and the [\*2026] NAD, the bodies confronted the challenge of earning their legitimacy and claim to regulatory authority. If such efforts succeeded, the FCC and copyright courts would regard their guidance as meaningful, just as the FTC and courts do with respect to the actions of the NAD. 76

In the environmental realm, the Marine Stewardship Council ("MSC") is an instructive case study on how a multi-stakeholder private regulatory initiative can have a major impact. The MSC, founded by the World Wildlife Fund and Unilever, was launched to address the concern about fisheries operating in a sustainable fashion. 77 As one commentator explained, "the MSC administers standards for sustainable fisheries, updates the standards periodically with input from a stakeholder advisory group, evaluates fisheries, and allows those fisheries that meet certain criteria to label their fish as MSC-certified." 78 The MSC standard focuses on three core concerns: (1) maintaining sustainable fish stocks; (2) minimizing any adverse environmental impact; and (3) managing the fishery effectively, including compliance with relevant legal requirements. 79 Under the MSC-administered regime, independent private auditors must assess compliance with the relevant standards and compliant products can be labeled as such. 80 Indeed, the MSC regime allows any organization with concerns related to certification to make a formal objection during the certification process. 81

[\*2027] The MSC provides a powerful example of how private regulation can work even when not reinforced by public regulation. 82 By 2012, sixty percent of the fish caught in U.S. fisheries for human consumption were MSC-certified and major corporations, such as Wal-Mart and McDonald's, had committed to selling only MSC-certified, wild-caught fish. 83 Moreover, the MSC's private regime drove compliance with the nonbinding Code of Conduct, developed by the United Nations Food and Agriculture Organization, by making it part of its requirements. 84 After surveying this regime and formal regulatory efforts to address the issue, one commentator concluded that the MSC model was more successful than traditional regulatory efforts in this area and that "private regulation is best situated to address the complex problem of fisheries depletion." 85

In short, private regulatory efforts, such as those led by multi-stakeholder organizations, can influence private behavior whether they operate in tandem with public regulatory oversight or in a vacuum created by a lack of regulatory oversight. Whether they operate in the backdrop of public oversight or as a standalone effort, private bodies need to establish their legitimacy to influence behavior on the ground. To do so, they must have sufficient independence from those they oversee, enabling both regulators and consumers to trust their judgments (including determinations of compliance). 86

[\*2028]

E. Hacking the Bureaucracy

In most situations, Congress and agencies think along traditional lines and agency leaders continue on the established path of agency regulation, under-utilizing the alternative models discussed above. 87 There are a number of reasons for this dynamic, including the power of "path dependency and bureaucratic entrenchment." 88 Even more powerfully, the incentives for policymakers are often to avoid Type 1 errors - those visible errors of commission - that arise when trying a new strategy that might fail. By contrast, the hidden Type 2 errors - ones of omission - are permissible and a regular feature of bureaucratic inertia. 89

On one account, the challenge of leading a bureaucracy is captured by the reality that governmental employees, who enjoy civil service protection, can tell their politically-selected leaders, "I was here long before you arrived and will be here long after you are gone." In practice, such explicit defiance is the exception. Regardless of whether bureaucratic inertia is willful or based on an entrenched tradition governmental agencies are built to continue the same course. Consequently, any course corrections require energetic leadership. 90 And governmental employees are generally conditioned "to be quiet, take orders, and do their jobs in a repetitive way." 91 On the positive side, governmental employees tend to have a service orientation and are mission driven, meaning [\*2029] that effective engagement around the mission and purpose of the agenda can catalyze innovation and collaboration. 92

Bureaucratic inertia and autopilot administration not only prevent innovative programs from being developed, but also can lead existing programs to be administered badly. Take, for example, the development of the healthcare.gov website. After Congress passed the Affordable Care Act, a health care economist, David Cutler, encouraged the White House to treat the administration of the law more like "launching a start-up than passing a law." 93 In particular, Cutler made clear that the default strategy - using the existing personnel at the Center for Medicare and Medicaid Services ("CMS") - for administering the law was a recipe for failure. 94 In an assessment ignored by the White House, he explained that CMS "is demoralized, the best people have left, IT services are antiquated, and there are fewer employees than in 1981, despite a much larger burden." 95

Cutler's call for an entrepreneurial approach to implementing the Affordable Care Act was rejected by President Obama. 96 Perhaps fearing the need to manage political warfare with House Republicans or responding to the HHS' interest in protecting its turf, President Obama agreed to, in Cutler's words, pile "new responsibilities onto a broken system." 97 As this episode underscores, even when the current system is flawed, the pressure to use it is powerful. As a result, the healthcare.gov website cost $ 800 million to develop, whereas Twitter, which serves a similar number of users and is of comparable complexity, cost only $ 60 million. 98

The redeeming part of the healthcare.gov story is that it demonstrates that treating a government project like a startup can work. After the failed rollout of healthcare.gov (which only enabled six people to sign up for insurance on its first day), President Obama essentially embraced Cutler's recommendation, [\*2030] authorizing Todd Park, Mikey Dickerson, and a team of entrepreneurs to operate in a new structure that was called "tech surge." 99 This project, like a good startup, approached the challenge of building an effective website from first principles. Rather than ask how the government had done IT projects before, the team innovated (for government) in a number of important ways, including using Amazon Web Services to support the site. 100 In developing the new website, it broke from the traditional bureaucratic process of "waterfall" development (where every step is prescribed and locked-in) and used "agile" development (where the process is iterative and evolves along the way). 101 Finally, the team built a login system for $ 4 million (with annual maintenance costs of $ 1 million) to replace the initial version that did not work well and cost $ 250 million to build (with $ 70 million annual maintenance costs). 102

In an important legacy of this effort, Park and Dickerson continued to work in government after fixing healthcare.gov, developing the new U.S. Digital Service ("USDS"). 103 The goal of the USDS is to lure a range of talented technology professionals to the federal government, including data scientists, product managers, and product designers. 104 The USDS, in turn, provides guidance to government agencies on questions like how they can use Amazon Web Services. 105 In short, the USDS supports entrepreneurial leadership in government; and as Park said, it develops "people who can hack the technology, as well as people who can hack the bureaucracy." 106

The healthcare.gov story now has two parts. The first is the cautionary tale about government's traditional inertial default setting - that is, to do things as they were done before. The second underscores that entrepreneurial leadership [\*2031] in government is both possible and important, and can lead to transformative results. 107

The positive legacy of the healthcare.gov story is that entrepreneurial leaders in government can free their agencies from "the mental grip of conventional structures on the capacity to consider alternatives." 108 In so doing, such leaders can facilitate the development of alternative regulatory strategies. Similarly, governmental agencies face the challenge of overcoming the institutional bias that "experts may myopically focus on issues within their area of expertise and thereby fail to recognize that a decision would benefit from accessing other bodies of knowledge or ways of thinking." 109 In short, an important role of entrepreneurial leadership in government is to examine issues through the lens of first principles. 110

The concept of policy entrepreneurship recognizes that an entrepreneurial mindset and skillset can be applied to governance to foster innovative results. Professor Adam Sheingate, for example, defines the concept as the "skillful manipulation of politics [that] somehow results in the creation of a new policy or a new bureaucratic agency, creates a new institution, or transforms an existing one." 111 This type of leadership can also be seen in the development of, for example, the MSC program, the FTC's oversight of online privacy, and the Energy Star program. In a world where the best solutions may well require new models of regulation, it is critical that agency leaders experiment with new solutions. 112

[\*2032] A significant hurdle for entrepreneurial leadership in government - and a foundation of the inertial default setting - is the lack of acceptance of failure as an outcome. In practice, this means that governmental agencies often reflexively turn to traditional regulatory models and do not consider untested alternatives (often out of fear of failure). 113 This instinct mirrors the old private sector saw that "nobody got fired for buying IBM." 114 Citing the fear of failure and risk aversion, former Massachusetts Governor Deval Patrick explained, "there may be no industry less susceptible to innovation than government." 115 There are, however, exceptions, including the Defense Advanced Research Projects Agency ("DARPA"), which makes a conscious effort to promote a "risk-taking and failure-tolerant culture." 116

In the entrepreneurship environment, failure is a normal state, providing data, an opportunity to iterate, and a spur to refine a product offering. 117 Consequently, entrepreneurs celebrate the need to "fail fast" on new experiments by trying them on a small scale and determining as quickly as possible whether they can work. 118 As two advocates of innovation in government put it, "[a] [\*2033] culture of innovation means continuously exploring and adopting new processes in an ecosystem where risk is incentivized, not precluded." 119 Similarly, entrepreneurial leadership in government authorizes calculated risk-taking and, more importantly, provides cover for trial-and-error learning when the trials do not produce the envisioned results. 120 Unfortunately, leaders who support experimentation and are willing to accept the inevitable failures, are the exception, not the rule. 121

The basic entrepreneurial methodology of experiment-measure-iterate is captured in Eric Ries's classic book, The Lean Startup. 122 A core thesis of the book, widely accepted in the entrepreneurial community (and ignored by most legal scholars), 123 is that companies should develop and market a "minimum viable product," solicit feedback from actual customers, and improve it based on that data. 124 At Facebook, this philosophy was adopted and embodied in its mantra, "done is better than perfect." Citing that mantra, one commentator explained that "had Facebook waited so much as a year to perfect its model, the company might very well be where MySpace is today." 125

The Ries philosophy is famously captured in a feedback loop representing the cycle of innovation. 126 The core idea is to embrace experimentation, gather data [\*2034] (whether it signals success or failure), and iterate. 127 The lean startup model, represented by the following diagram, focuses on taking ideas from prototype to feedback to improvement: 128

This lean startup model echoes the style of software development championed by open source software, which calls for releasing code that can be viewed and improved by a community of users and developers. In what Eric Raymond dubbed "Linus's Law," in honor of the founder and coordinator of Linux, the open source maxim is "given enough eyeballs, all bugs are shallow." 129 This approach has spread far beyond open source, enabling "business webs where focused companies partner others to innovate and create value." 130 Although this [\*2035] approach and a commitment to prototyping and testing solutions is novel in government, it is starting to take root, with promising results. 131

With respect to the fear of failure, government operates quite differently than the entrepreneurial world. In government, the perceived costs of failure are sufficiently high that many governmental leaders decline to introduce a new initiative for fear it will fail or refuse to admit that an existing program is failing, even though that admission is a necessary predicate for improvement. To be sure, there are cases like the initial healthcare.gov rollout where the failure is readily apparent and must be fixed. In other cases, however, governmental leaders stand by programs where the data backing up its effectiveness is either uncertain or doubtful.

For an instructive case of governmental leaders refusing to acknowledge the limitations of a program, consider the case of the EPA's Performance Track program. When created, the program was supposed to highlight those companies with stellar environmental records. 132 In practice, however, it ultimately became, as EPA Administrator Lisa Jackson put it, "just one of those window-dressing programs that has little value." 133 Similarly, the EPA Inspector General criticized the program as ineffective, noting that it did not provide "a new model for achieving" its stated goals and very few companies met their stated goals. 134 Nonetheless, the Bush Administration did not make any real changes to the program before the Obama Administration cancelled it. 135

The Performance Track program story, like the failure to acknowledge the failings of the healthcare.gov website earlier, underscores that the hesitancy to acknowledge failure is a major challenge in governmental administration. If governmental leaders refuse to acknowledge failures, they undermine the ability to learn - and iterate - from mistakes and instead allow failed programs to [\*2036] continue during a period of denial. 136 Or, as Lawrence Summers put it while reflecting on the healthcare.gov debacle, it is crucial to resist the "overwhelming temptation for everyone involved [in a project] to circle the wagons and promise rapid repair so as to hold critics at bay." 137

Another challenging dynamic for governmental leaders to address is the impact of unconscious bias. It is normal for those involved in a project to believe that it is working, following what Nobel Laureate Daniel Kahneman calls "confirmation bias." 138 As one commentator put it, a challenge for those evaluating regulatory experiments is that those "deeply involved in the implementation of a particular regulation are likely to see the benefits of such a project far more clearly than the costs." 139 As commentators have explained, there are a number of strategies for overcoming this bias, including using red team-blue team exercises, appointing a Devil's Advocate, and creating a process for deliberate decisionmaking. 140 Of course, as happened in the Performance Track situation, new leadership is able to bring a fresh perspective. Ideally, however, existing leaders can step back and ask, "if a new leader came in and took a fresh look, what would she do?" 141

[\*2037] The role of entrepreneurial leadership in encouraging candid reflection and criticism is essential. As former FTC Chair Bill Kovacic and David Hyman explain, agencies develop an institutional culture and a reputation (or a brand, as they put it). 142 In some cases, that brand can be one of reliability and commitment to data-driven decisionmaking. An important role of an entrepreneurial leader is to develop and maintain that commitment. In the case of Underwriters Laboratory ("UL"), for example, its early leadership did just that, building up "UL's reputation for reliability by creating organizational structures, administrative routines, and oversight systems designed to prevent mistakes and misconduct." 143 To get past the natural status quo bias, an entrepreneurial leader should welcome diverse ideas, criticism, different options, and experimentation. 144 In Part II, to explain how policy entrepreneurship can earn regulatory authority, I discuss how experimental initiatives need to establish their effectiveness, legitimacy, and accountability to be embraced as lasting regulatory regimes.

#### 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.

### 1AC---Plan

#### Plan: The United States federal government should substantially increase its prohibitions on anticompetitive practices by participants in the blockchain nucleus.

### 1AC---Solvency

#### Contention 3 is SOLVENCY.

#### Prohibiting anticompetitive practices by the blockchain nucleus creates a principled basis to apply antitrust to distributed ledgers without overbroadening liability for all users.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 110

2 BLOCKCHAIN’S LEGAL FICTION

In this section, I introduce the theory of granularity and outline how it enables the application of antitrust law to blockchains. Transactional by nature, that theory aims to explain public permissionless blockchains beyond the simple cost reduction framework. It seeks to translate accurately the governing reality of such blockchains, creating for the purpose a new legal fiction that encapsulates blockchain without forcing it into inadequate boxes.

2.1 Dynamics of Blockchain Governance

The theory of granularity, to which one may want to provide a semantic explanation, frames blockchain governance as a new transactional institution. By doing so, it fills the gap created by the impossibility of applying the theory of the firm to public permissionless blockchains.

2.1.1 Semantic explanation

In “The Nature of the Firm”, Ronald Coase distinguished between organizations and organisms.3 While firms are organizations, blockchains are clusters of organisms that, by nature, are spontaneous. Their functioning must be analyzed and understood this way so that antitrust and competition law can be properly applied when necessary.

The present chapter introduces the theory of granularity for the purpose. Generally, the notion of granularity defines the size of the smallest element in a system - that is, an organism. Thus, this theory aims to analyze the role played by each component of a blockchain. Unlike the firm, where vertical control is exercised over its components, blockchains are made up of horizontal governance mechanisms. This reinforces the importance of each organism, as one cannot merely assume that they will follow one coordinated direction.4 One must then study blockchain’s smallest organisms, the role they play and their dynamism.5 It is only by analyzing the granularity level that blockchain governance can be properly understood.6

2.1.2 Understanding blockchain governance

Blockchain is a space in which different forms of power are being exercised. However, unlike the firm, in which one exercises a power of command and control, I have explained that no single actor can entirely control a public permissionless blockchain.7 As a result, multiple interests can compete within the same blockchain; they may even be opposed. Blockchain “contribute[s] to the realization of a number of individual objectives which no one knows in their totality”8 For that reason, one must study the different types of power that are generally found within public permissionless blockchains to understand which interests may eventually prevail over others. In doing so, we should keep in mind that “people who think the purpose of blockchains is to completely expunge soft mushy human intuitions and feelings in favor of completely algorithmic governance (emphasis on ‘completely’) are absolutely crazy.”9

I study blockchain power games by analyzing what I have described as the fifth blockchain level in Chapter 4: the governance layer. That level sits on top of more technical ones, and it appears to be central in defining the activities at the levels above. Furthermore, different constraints come into play in blockchain governance - namely, economic, political, logical, sociological, architectural and legal ones. Understanding how these constraints interact is a challenge; but it is essential in order to get a grip on who holds control over blockchain layer 1 and how that power is exercised over other participants.

A distinction between all three categories of public permissionless blockchain participants is helpful in this regard - namely, between founders or core developers (I will often present them together for the sake of simplicity), users and miners. I show that although each blockchain has its specificities, the above-mentioned groups will use the same mechanisms to express their preferences,10 and will encounter the same limits if they act on their own. Eventually, their powers may suffer from four constraints that Lawrence Lessig described with his “pathetic dot theory”: law, markets, social norms and architecture.11

As for private blockchains, I have explained that they mimic that structure to different degrees, depending on their original design. The closer they are to public permissionless blockchains, the less the theory of the firm will be transposable to them. The following developments then become relevant for public permissionless as well as private blockchains.

2.1.2.1 The power of founders and core developers'2

Blockchain founders and core developers are those who implement the original rules of a blockchain.13 They design the code software and determine which consensus protocol will be used.14

Although core developers work on the fourth level of blockchain - its infra- structure - they interact with other blockchain participants at the fifth level. Indeed, one may stress that the blockchain architecture limits their power, as they lose any form of direct control over other participants once they put the blockchain online.15 For most blockchains (but not all!),16 founders and core developers cannot unilaterally impose any changes17 or control who may propose protocol updates.18 For instance, any Bitcoin Improvement Proposals must be voted upon, according to miners’ computing power, before they get implemented.19 Indeed,“[t]he nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime,”20 unless the majority agrees to change it.

The more participants are included in those voting procedures, the more decentralized that blockchain layer is.21 The opposite is also true. For instance, Decred22 and Tezos23 are cryptocurrencies with more centralized governance systems. One of Tezos’ principal characteristics is the ability to amend its consensus when necessary.24 The presence of off-chain and side-chain governance mechanisms, usually controlled by developers, should also be closely studied.25

It remains that core developers do not control who can use the blockchain at the platform layer26 or who can build applications on top of it.27 That is because blockchain founders and core developers cannot impose changes on the blockchain code, interface, application, data or benefice.28 Their main role is thus close to that of “advisors,”29 but their influence is limited by blockchain participants’ desire to maximize their own benefit, which may lead them, should they disagree with core developers, to refuse the implementation of new rules, to move to a rival ecosystem or to fork the blockchain.30 Social norms further limit them because they may fear not being influential enough to prevent hard forks.

Hard forks result in backward-incompatible software updates. When they do not obtain a sufficiently broad consensus among miners,31 hard forks cause the chain to split in two, permanently. Indeed, miners who do not follow the new block validation requirements will be unable to add their blocks to the latest version of the blockchain, as the core client will automatically reject them as non-compliant. Instead, a new chain of blocks will form, creating a split: two chains following different rules. These forks limit the core developers’ willingness to act against the interests of other participants.32 And core developers may also fear soft forks, although to a lesser degree. Soft forks happen when new rules are implemented, but when the blocks following the original rules are not rejected from the chain. These modifications are backward-compatible, accommodating miners who implement the change and those who do not. Nevertheless, one should underline that these limits on core developers’ power are linked to the decentralized nature of blockchain governance, which is not a necessary feature, but needs to be enacted.33 New blockchains may appear in which greater power is given to the founders and core developers.34

However, such blockchains will suffer from two inherent limits. First, the extent to which a (re)centralized blockchain could thrive remains to be seen.35 Such blockchains could deplete trust by confining power in the hands of a few, thus disincentivizing users from joining them. Second, a (re)centralized block- chain could function less efficiently than a truly decentralized one, because all its participants would no longer be in a position to improve it. This lack of efficiency, even if it only concerned certain types of transactions, could hinder these blockchains - which probably explains why, to this day, they have not prospered.

2.1.2.2 The power of users36

On permissionless public blockchains, users propose new transactions. Anyone can become a user.37 Users exercise substantial power over the blockchain, since their decision to use it (or not) is central to the blockchain’s economic and social value.38 Their influence extends from influencing transaction fees39 to providing additional value by developing and using applications running on top of the platform layer.40 They can also force hard forks on the blockchain.41 However, their power is limited by the fact they cannot (easily) exercise coordinated control, as their actions are highly decentralized and spontaneous.42 This creates an architectural limit and makes their behavior primarily dependent on prices.43

2.1.2.3 The power of miners44

On permissionless public blockchains, miners validate transactions assembled into blocks. Any participant can become a miner.45 Miners follow the rules encoded in the fourth blockchain level (e.g., the Bitcoin Core client).46 They can comply with a different set of rules, but they will then waste computing power by producing an orphaned block, thus losing potential rewards. Following the main client’s rules is miners’ dominant strategy.47 If they coordinate their behavior, miners can influence a blockchain by realizing a 51 percent attack,48 thus forcing a soft fork.49 The risk is higher when miners are grouped into mining pools.50 In such a scenario, the blockchain protocol is changed to loosen the rule-set enforced by full nodes.51 Such a change occurs when enough hashing power, or energy expended to mine a cryptocurrency, is devoted to it.52 The power of miners to start soft forks is nonetheless limited by both the blockchain’s architecture53 and social norms - they must convince blockchain participants operating as nodes to run the new version of the software.54 Miners also suffer from market constraints, as initiating a soft fork may decrease the value of the tokens they own.55 The price mechanism also guides their actions, creating a strong market-related constraint. Finally, even if a fork were created, the new community would have the strenuous task of convincing other users to join it.56 For example, Bitcoin had been forked over 100 times at the time of writing. Over 30 of them are considered failures, while another 29 projects are no longer capable of transacting. Among the remaining forks Just a few are considered valuable.57

2.1.3 The blockchain power game

This overall balance of power, common to all public permissionless block- chains, is the general analytical framework (as illustrated in Figure 7.1) within which to analyze whether one of these groups, on a case-by-case basis, has sufficient influence to qualify as control under antitrust or competition law.

On top of all that, core developers, users and miners may also store a copy of the blockchain ledger. When doing so, their computers are labeled as light nodes if they store only a subset of the blockchain ledger and full nodes if they store a copy of the entire blockchain.58

Although these nodes are passive and cannot be designated as actors in the blockchain, they ensure its integrity. This role carries power. First, blockchain participants who are nodes may alter their copy of the blockchain.59 Second, they may also (threaten to) validate blocks in which there is double spending.60 Their job is indeed to prevent users from spending the same token twice by allowing miners to verify the proposed transaction against a list of previous unspent transaction outputs. They protect blockchains value. However, their power is mainly limited by the fact that they cannot either control or influence transactions.61

This is the blockchain power game. It is well balanced, and technical solutions (called “layer 2” solutions) are constantly provided to maintain that balance. But these solutions are insufficient to maintain balance when different groups of blockchain participants come together to escape these constraints to the detriment of the broader ecosystem. When this occurs, they are exercising control over the blockchain.

2.2 The Blockchain Nucleus

Thus far, the theory of granularity has allowed me to determine the different forms of power enjoyed by blockchain participants. I must now detail how to identify a legal fiction controlling the blockchain.62 To this end, I explain what a blockchain nucleus is and then analyze its influence over other blockchain participants. 1 then describe how to define such a nucleus.

2.2.1 Usefulness and challenges

2.2.1.1 The nucleus

None of the three types of blockchain participants - core developers, users and miners - can impose their power on other groups to the point of taking complete control over the blockchain. Blockchains are indeed decentralized. They prevent the exercise of vertical power, and this differentiates them from firms in which a group, or sometimes even an individual, can control the other participants and “force them to collaborate,” so to speak.

That being said, even with horizontal and decentralized governance, a group of participants may achieve a form of control over the blockchain by collaborating, by circumventing (some of) the constraints imposed on them,63 and by changing them in the long run.64

I contend that such a coalition exists for each blockchain (at least, for the surviving ones),65 and I call it the nucleus. The nucleus includes all the participants who have a personal interest (albeit transiently) to collaborate toward the same long-term goal: ensuring the blockchain’s survival.66 Its members do not compete as they are, together, trying to maintain and expand their blockchain. Their short-term interests may diverge from time to time67 - for example, when two miners are racing to mine new blocks.68 Still, they seek to ensure blockchain integrity and systematically promote the same blockchain instead of other ones.

2.2.1.2 Usefulness

Assessing which participants have joined forces and are thus part of the nucleus is essential to determine who ultimately controls the blockchain. Put differently, it leads to identifying the participants that can be held liable for a breach of antitrust law when it is shown that they have anticompetitively exerted their influence.69 Identifying the nucleus amounts to creating a legal fiction to which the law can be applied, but also to which rights can be granted (see Figure 7.2).

The nucleus should indeed become a legal fiction that can be liable for anticompetitive practices, but also able to claim damages. In that regard, determining the nucleus size will prove central. It will prove useful in cases of anticompetitive practices directed at a blockchain nucleus. When a legal entity - whether a blockchain nucleus or a firm - infringes antitrust law and causes damages to another nucleus, the latter must have the means to introduce a legal action, stand by its rights and claim damages. Assigning liability and granting rights to blockchain ecosystems are thus two sides of the same coin.

3 DEFINING THE NUCLEUS SIZE

Courts and antitrust agencies will face the task of determining the nucleus size. The further away a participant will be from the nucleus’s center, the more difficult it will become to genuinely include her or him in the nucleus. With distance, it will prove harder to show that she or he could have influenced other participants’ behavior. Only a case-by-case analysis can elucidate this question. This analysis should nevertheless be based on concrete and quantifiable frameworks to ensure legal certainty, limit legal errors and reduce regulatory costs. To this end, agencies should focus their investigation on economic agents’ ability to exert a horizontal power of command and control. They should also consider their capacity to interfere with the blockchain’s economic value and influence norms.70

Let me be more specific. The first element that should be factored in to determine which participants are part of the nucleus is the technical ability to exert a horizontal quasi-power of command and control. One must assess each blockchain’s architectural characteristics to determine whether a few users may impose such decisions on others. The more a group of users can control others, the more they can single-handedly contribute to the block- chain’s survival, and therefore be considered part of the nucleus. In fact, the original design of a blockchain can give one of the three groups of users more or less power. It can put them in charge of implementing the execution of transactions, designate them as miners or even enable them to change the design a blockchain’s design unilaterally. Some blockchains might also use several mechanisms based on the platform layer to create governance (whether off-chain or side-chain).71

The second element is the ability of each participant to interfere with the blockchain’s economic value.72 When some users govern the pricing structures, the blockchain’s attractiveness or economic incentives, they have indirect control over the blockchain. This ability can be assessed by looking at technical elements. For instance, the capacity to change the size of each block, which may alter the number and types of transactions, is a sign of control. The same goes for the power to propose modifications to the core code to attract new participants. Finally, the more a participant has invested in the blockchain, the more he has an incentive to control its economic value.73 For that reason, previous investments in a blockchain can show agencies where to look for the nucleus.

The third element is the ability to influence a blockchain’s norms.74 Here, “norms” are defined as the “constraints imposed not through the organized or centralized actions of a state, but through the many slight and sometimes forceful sanctions that members of a community impose on each other”75 - that is, the unwritten rules that one often feels compelled to follow.76 The more a participant can incentivize others to behave in a certain way - on pain of rejection from the community - the more they exercise control over the blockchain’s general direction.77 For example, when core developers can influence other participants into accepting all of the modifications they would like to apply to the core (e.g., by arguing about the necessity for technical upgrades, security failures, bugs...), they effectively pilot part of the blockchain.

4 THE THEORY OF GRANULARITY IN ACTION

The theory of granularity would enable agencies to identify a blockchain’s nucleus. It would thus permit the creation of a legal fiction to which antitrust can be applied. In turn, this would impose new obligations upon blockchain participants while simultaneously giving them new means to challenge anti- competitive behavior. This theory would make it possible to analyze relevant markets and market power in antitrust proceedings. The theory of granularity would also make it possible to impute anticompetitive practices to a given set of blockchain participants.

#### Antitrust is limited by application only to the ‘firm’, defined by vertical control---modifying this with targeted prohibitions prevents blockchain centralization.

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 79-94

The second part of this book is dedicated to artificial centralization - namely, anticompetitive behaviors that take place on blockchains or are facilitated by them. 1 contend that studying these practices is essential to make blockchain and antitrust law function as allies; indeed, no sustainable cooperation is possible without addressing (and preparing for) the situations in which mutual aggressions will occur.

To this end, I first analyze the extent to which antitrust laws are currently applicable to blockchains. I show that the theory of the firm is central to modern antitrust (Chapter 6) and that it cannot be transposed to all blockchains. For that reason, I propose a new approach - dubbed “the theory of granularity”- which allows for the creation of a legal fiction, placing blockchain’s activities (back) under the rule of law (Chapter 7). I explain that implementing that approach would benefit all the players in the blockchain ecosystem. This would clear the way for law enforcers to apply the rule of law and, in turn, would help eliminate the most harmful practices and encourage investments. Once the question of applicability has been cleared up, I turn to how antitrust law could be applied to anticompetitive practices. To this end, I begin by looking at collusive practices, whether they concern the blockchain itself (Chapter 8) or make use of the blockchain to affect the “real space” (Chapter 9). 1 explain that these practices tend to centralize decision making power and thus contribute to the “artificial” centralization of different levels of block- chain ecosystems and the economy.

Part 2 closes by examining abuses of market power. I first show that the analysis of market power on blockchain raises several difficulties, and I offer suggestions to overcome them (Chapter 10). I then analyze the practices that may result from such power and show that they are heterogeneous (Chapter 11). I draw a risk map. Finally, I conclude by studying different forms of blockchain concentration (Chapter 12). I draw a distinction between hostile and mutually agreed concentrations and explain how these may recentralize blockchain.

6. The theory of the firm

1 LEGAL FICTIONS

The concept of “legal fiction” is central to all legal systems, although regulation and court decisions refer to it only infrequently. I first explain its meaning by taking a brief detour through... trees and forests. I then show why it is useful for the present study.

1.1 Trees as a Legal Fiction

Christopher D. Stone is a law professor in the United States. In 1965, after a stint at the University of Chicago,1 he joined the University of Southern California Law School, where he taught several subjects, including public international law and property law. One day in the fall of 1971, as he was nearing the end of a class, he asked his students the following question: “What would a radically different law-driven consciousness look like?” As he walked out of the classroom, down the corridor to his office, he wondered why he had asked such a strange thing. “How could a tree have rights,” after all? Days went by, and still he continued to wonder. He soon became convinced that the answer to his question should be positive and decided to make it known.

In October that same year, he got in touch with the Southern California Law Review's editor in chief. The Supreme Court had taken up a case, Sierra Club v. Morton, that touched upon his question. Although Stone did not think he would be able to publish his article before the case went to trial, he hoped that Justice William O. Douglas - who had agreed to write the preface to a symposium issue of the Review - would at least see the draft of his article. His strategy paid off. Although the Supreme Court decision did not follow his thesis, Justice Douglas wrote a dissent in which he held that: “Contemporary public concern for protecting nature’s ecological equilibrium should lead to the conferral of standing upon environmental objects to sue for their own preservation. See Should Trees Have Standing?”2 In 1974, Stone published a book in which he developed his theory further.

1.2 The Concept of Legal Fiction

Christopher Stone’s book is a pillar of modern thinking on the subject. Of course, the argument concerning what is a legal person - or a legal object to which rights are attributed - did not originate in the 1970s. Since medieval times, scholars have considered what rights should be attributed to corpo- rations3 - a debate they centered on the question of legal fictions. A “legal fiction” is presumably defined as a fact created by courts or legislation to help legal ruling.4 Stone poses three conditions for the creation of a new one:

They are, first, that the thing can institute legal actions at its behest, second, that in determining the granting of legal relief, the court must take injury to it into account; and, third, that relief must run to the benefit of it.5

A company meets these criteria. Legal systems have recognized them as a legal fiction for hundreds of years.6 Corporations are, in the words of John Sherman, “artificial person[s] without fear of death, without a soul to save or body to punish;”7 and yet they are at the center of our modern economies. Not only has the law “been able to exploit to its advantage and to maximize for its needs” the fact that corporations are persons; but also, they can file legal actions, suffer from damages and benefit from relief. One can find traces of that recognition in the Rolls of British Parliament in 1444: “they [the Master and Brethren of the Hospital] by that same name mowe be persones able to purchase Londez and Tenementz of all manere persones.” Here, the Hospital was recognized as a legal fiction.

As for the process of establishing legal fictions - once the criteria are known to be met - three methods have been used,8 whether by the courts (in common law) or by the legislature (in civil law). The first is by assertion, where one thing is declared to be true. For instance, one may say that corporations are persons. The second is by assumption - more specifically, by an irrefutable presumption that may morph into a legal fiction. For instance, one may say that corporations are presumed to be persons. The third is by deeming. Here, X is deemed to be Y, which creates a disconnect between the reality before deeming the fact, and after.

1.3 Legal Fiction and Blockchain

If legal fictions are so convenient, why not create a multitude of them? The first objection is the necessity to agree on the desirability of the objective they ought to achieve. When courts use legal fictions to deny minorities their fundamental rights, the objective is achieved, but society does not come out better.9 The second objection relates to the balance of power. Bentham called legal fictions “the stealing of legislative power” when courts create them. The third objection relates to the difficulty of creating a coherent legal system. Companies are legal persons, and although they can be charged with criminal activity, these crimes are committed by physical entities (persons). One must therefore put in place adequate measures to ensure that any illegal activity by a firm can be put to an end (that its perpetrators cease to act). The fourth and final objection concerns the systematization of the law. The creation of legal fictions leads to the elimination of case-by-case analysis, at least partially. For instance, a firm will always be a legal person. That may create difficulties because it entails giving the firm all the fundamental rights given to us, humans.

On the other hand, creating legal fictions significantly improves legal certainty. First, this applies to the entities directly concerned, which as legal fictions may bring actions under their own name and can thus be compensated for any damage they might unjustly suffer. It also creates legal certainty for all those who interact with these legal fictions, as trading partners can indeed bring legal actions against them. It helps when legal fictions rather than individuals benefit from illegal practices and cases where several individuals are responsible for a behavior. In short, although the creation of legal fictions is an exercise that requires precision, it unlocks a range of potential interactions that can greatly benefit society.

I intend to explain that creating a new legal fiction for blockchains is essential to their decentralization. I have argued that decentralization is the capacity of subjects to determine their competence. That requires recognizing their legal existence before transferring such capacity. Doing so will also allow them to introduce proper legal actions and prevent illegal behaviors being turned against them.

2 THE FIRM IN ANTITRUST

Antitrust’s most common legal fiction is the firm. That legal fiction has developed little since the 1930s and Ronald Coase’s work. For that reason, one may wish to understand its premises to get a grasp of modem antitrust law.

2.1 The Theory of the Firm

The economic literature regarding the emergence of firms emphasizes the importance of transaction costs and the ability to reduce them thanks to top-down control. To this day, that theory has provided the bedrock for modem microeconomic analysis.

2.1.1 Highlights of Ronald Coase’s article

In 1937, when he was 21 years old, Ronald Coase published “The Nature of the Firm.”10 It contains no mathematics and is just 20 pages long, but it remains one of the most-cited publications in economic theory today." One can hardly overstate its impact.12

In it, Coase sought to answer the following question: if markets are efficient, why do firms emerge? Coase responded simply and elegantly, stressing that firms make it easier to organize certain exchanges. Coase introduced the concept of transaction costs without naming it - referring to all the expenses the parties must incur to complete a transaction - and explained that firms exist to minimize these costs.13 Indeed, a transaction involves different costs - the costs of finding economic agents on the market, negotiating, drafting a contract and so on. By internalizing these various externalities, firms reduce the cost of economic transactions. Firms were thus seen as an institutional device for the first time.14 Coase opened the firm “black box.”15

He then explained why firms reduce these costs. His explanations came down to the power of command and control.16 Firms are hierarchically organized: orders and directions are given from the top and trickle down the hierarchy. This reduces the scope for costly opportunistic behavior that might otherwise make transaction unprofitable. Put differently, the reduction of these costs is often achieved by collaboration between employees, while market participants outside the firm are compelled to compete.

In Coase’s words, “in place of the complicated market structure with exchange transactions is substituted the entrepreneur-coordinator, who directs production.”17 Reductions of costs follow, as “by forming an organisation and allowing some authority (an ‘entrepreneur’) to direct the resources, certain marketing costs are saved.”18 Coase thus defines the “firm” as “the system of relationships which comes into existence when the direction of resources is dependent on an entrepreneur.”19 On the contrary, this kind of efficiency is not found in the market, where free economic agents compete under emergent orders. One can thus define the boundary between the firm and the market: where control stops, the firm’s perimeter stops.

Coase particularly emphasized the firm’s ability to deal with contingencies during the performance of a contract. While firms manage long-term relationships, the market mainly permits short-term contracts based on the price mechanism.20 Thus, Coase argued, “it seems improbable that a firm would emerge without the existence of uncertainty”21 in the market. This assumption is based on the theory of incomplete contracts, according to which the contracting parties cannot anticipate all the situations that may arise during their contract’s performance.22 The firm helps in creating a way to settle disputes, which as a result reduces all the upfront costs related to the management of potential conflicts. Here again, Coase put the firm’s ability to exercise control at the center of his demonstration. He was awarded the 1991 Nobel Prize in Economics for “his discovery and clarification of the significance of trans- action costs and property rights for the economy’s institutional structure and functioning.”23

2.1.2 Coase’s impact

Coase’s article put transaction costs at the center of modem economics, making them “the ultimate unit of microeconomic analysis.”24 Although Coase complained in 1988 that the concept was “largely absent from current economic theory,”25 it has transformed the perception of the firm from a pro- duction function into a governance structure.26

This transformation of economic thinking heavily influenced Oliver Williamson, among many others.27 He researched the optimal design of firms28 and helped to open the firm “black box” even further, putting the firm’s “control instruments”29 and the “means by which to infuse order”30 at the center of his analysis. Williamson was awarded the Nobel Prize in Economics in 2009.

Alternative theories to those of Coase have also developed. For instance, incentive theory portrays the firm as an incentive system that uses various instruments combining authority, ownership and compensation to ensure that all employees contribute their best to the firm’s interests.31 The theory holds that firms must adopt institutional arrangements that ensure survival by aligning these incentives. They are thus a nexus of written and unwritten contracts between different economic actors in which each contractual relationship is an agency relationship, whose optimal configuration must be discovered. According to the proponents of this theory, there is no difference in nature between firms and the market. Both are said to depend on contractual relationships that do not imply any exercise of authority or control. As I will explain, none of these alternative theories is currently being used in antitrust and competition law.32

2.2 A Pillar of Modern Antitrust

Although Coase’s theory was developed in the 1930s, modem antitrust is still constructed on the basis of this theory and has not adapted to changes in the nature of firms. Why is that? One may find a satisfying explanation in the fact that the nature of economic hierarchies has changed little to this day. Even the apparition of online platforms and aggregators has not changed the structure consisting of minimizing transaction costs thanks to vertical power. In a nutshell, Coase’s theory is here to stay. As a matter of fact, and as we are about to see, all modem antitrust case laws and regulations are based on the above-mentioned article, whether in the United States or Europe. More specifically, Coase’s theory helps point out where control is being exercised and, therefore, where the firm’s boundaries are. Antitrust and competition law applies to all entities defined accordingly.

2.2.1 The firm’s boundaries in antitrust and competition law

The Sherman Act in the United States and the TFEU in Europe are both the subject of extensive case law. The vast majority of the jurisprudence is not concerned with the question of the firm - that is, the person that is the subject of antitrust and competition law. The firm’s structure has transformed very little since the introduction of these two texts; it has become more complex, but has not changed in nature.33 For that reason, litigation generally involves other issues subject to further disagreement. Nevertheless, blockchain’s emergence forces us to reassess the definition of a “firm,” to analyze whether decentralized groups can be captured by antitrust law as currently conceived or if blockchains should be captured through another theory. In the United States, antitrust provisions apply to all “persons”34 affecting trade and commerce by unlawful restraints and monopolies.35 According to Section 7 of the Sherman Act:

the word ‘person,’ or ‘persons,’ wherever used in sections 1 to 7 of this title shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.36

The text does not further define the term “person”; it simply establishes exemption regimes for which antitrust is not applicable - mainly concerning federal government agencies and instrumentalities.37

The case law is more informative. In *Copperweld*,38 the Supreme Court stressed that although “[n]othing in the literal meaning of [the Sherman Act] excludes coordinated conduct among officers or employees of the same company,”39 there is “general agreement that § 1 is not violated by the internally coordinated conduct of a corporation and one of its unincorporated divisions.” On that basis, the Court held that “there can be little doubt that the operations of a corporate enterprise organized into divisions must be judged as the conduct of a single actor,” therefore exempting these operations from Section 1 of the Sherman Act.

The Supreme Court was dealing with possible intra-group collusion for the first time with this decision.40 One can only guess what would have been its reasoning before Coase’s article (1937). The fact remains that *Copperweld* follows a Coasian logic:41 the firm uses vertical control to save transaction costs; antitrust law must recognize the fact and exempt from Section 1 of the Sherman Act all agreements between two legal entities bound by such a control relationship42 In the words of the Supreme Court:

The intra-enterprise conspiracy doctrine looks to the form of an enterprise’s structure and ignores the reality. Antitrust liability should not depend on whether a corporate subunit is organized as an unincorporated division or a wholly-owned subsidiary. A corporation has complete power to maintain a wholly-owned subsidiary in either form. The economic, legal, or other considerations that lead corporate management to choose one structure over the other are not relevant to whether the enterprise’s conduct seriously threatens competition.

In the end, “courts must examine whether the conduct in question deprives the marketplace of the independent sources of economic control that competition assumes” “when making a single-entity determination.”43 Only when “general corporate actions are guided or determined” by “separate corporate consciousnesses” can two entities be seen as two separate firms in antitrust law.44 One must make no mistake about it: only control makes the firm and defines its scope.45

In Europe, the theory of the firm as defined by Coase is also the basis of modern competition law.46 Article 1 of Protocol 22 to the European Economic Area Agreement defines the “firm” as “any entity carrying out activities of a commercial or economic nature,” but the concept is not properly delimited in the black letter of EU law. However, the case law defines “undertakings” as “every entity engaged in an economic activity, regardless of the legal status of the entity and the way in which it is financed.”47 The legal form of the entity offering the economic activity does not matter.48 In fact, as the CJEU made clear in Shell, “undertakings” are economic units rather than legal units.49 Here again, the concept of undertaking takes Coase’s path-breaking article as a starting point.50

That definition of the “firm” is still incomplete, as it does not define its boundaries. For instance, in Imperial Chemical Industries, the CJEU ruled that the degree to which it carried out “the instructions given” by a company was essential in analyzing the independence of a subsidiary; and that “where a subsidiary does not enjoy real autonomy in determining its course of action in the market,” the prohibitions set out in Article 101 of the TFEU were inapplicable.51 The CJEU further held in Akzo Nobel that “the actual exercise of decisive influence”52 defines firm limits in competition law; and that “it is sufficient for the Commission to prove that the subsidiary is wholly owned by the parent company to presume that the parent exercises a decisive influence over the commercial policy of the subsidiary.”53 In the end, a firm encompasses all the elements over which control is exercised, as in the United States.54 For instance, in Hydrotherm, the CJEU found that a natural person, a limited partnership and another undertaking made up a single economic unit when they were all controlled by the same natural person.55 That logic derives from Coase’s “The Nature of the Firm.”56

2.2.2 The firm as a pillar of antitrust and competition law

The definition of the firm’s boundaries helps in three fundamental steps of antitrust and competition law: (1) determining whether the law should apply; (2) assessing practices; and (3) and assigning liability. First, establishing the firm’s boundaries helps determine the extent to which antitrust and competition law applies. U.S. antitrust law provides several exemptions to different types of entities, which require both the identification of the firm and an understanding of its activities. European competition law applies only to undertakings that carry out an economic activity. Once again, it is then necessary to identify the firm’s boundaries to determine the activities carried out.

Second, establishing the firm’s boundaries is essential when agencies assess the legality of business practices.57 In terms of collusion, U.S. and European courts have recognized that two legal entities that are part of the same eco- nomic unit - that is, the same firm - cannot be held guilty of collusion, as one cannot agree with oneself.58 Antitrust prohibits several forms of cooperation outside the firm, while it always permits cooperation within the firm. The logic is similar in terms of monopolization and abuse of a dominant position. As a company cannot abuse its market power against itself, abuses of power are illegal only when they affect other firms. Above all, defining the boundaries of firms is essential to analyze market power (and thus whether Section 2 of the Sherman Act or Article 102 of the TFEU is applicable to a given case) and the ability to engage in anticompetitive practices. Control indeed confers the firm with the power to implement practices - including the ability to raise prices, which is often central in antitrust cases.

Finally, identifying the boundaries of firms is essential to assign liability.59 Liability for anticompetitive practices rests with the parent company that ultimately controls other entities if such control has been exercised.60 This logic stems from the classic distinction between ownership and control.61

It is safe to assume that antitrust law will capture the activities of blockchain participants at their individual level.62 For example, one could imagine that a miner is considered a company on his own; after all, miners are operating an economic activity. Nevertheless, analyzing whether the entire blockchain layer 1 could be deemed a firm for the purpose of antitrust law is essential if agencies are to understand and apprehend anticompetitive practices that are carried out beyond the simple framework of the individual. For example, suppose a blockchain is implementing practices to exclude another blockchain from the market. In that case, one will want to punish these practices rather than each individual action leading to the entire scheme. I will return to these practices in the coming chapters.

In other words, defining the firm’s boundaries is a necessary step in understanding competitive dynamics, in analyzing practices and eventually, in assigning antitrust liability to the blockchain when, as an entity, it seeks to achieve survival through anticompetitive ways. It is thus essential to carefully consider the elements that are taken into account when defining “firms” under antitrust law. I showed that in the United States, as in Europe, only one element matters: control. This reasoning is problematic when it comes to blockchain.

# 2AC

## Blockchain ADV

### AT: Anonymity

#### Violators can be identified and prosecuted

Samuel N. Weinstein 21, Associate Professor of Law at the Benjamin N. Cardozo School of Law, “Blockchain Neutrality”, Georgia Law Review, 55 Ga. L. Rev. 499, Winter 21, Lexis

Blockchain technology does present certain non-antitrust-specific challenges to the legal system that antitrust enforcers and plaintiffs may have to contend with. Blockchain users sometimes protect their identities using pseudonyms, which may make identifying them for purposes of legal sanctions difficult. So far, this issue is more theoretical than practical, as researchers have demonstrated that most blockchain users' identities can be uncovered, 174 and prosecutors have successfully linked individual defendants to blockchain transactions. A high-profile example of law enforcement's ability to pierce blockchain pseudonymity took place in the trial of Ross Ulbricht, who was accused of controlling Silk Road, an online bazaar offering drugs and various illegal services. 175 Prosecutors produced evidence of transactions between bitcoin addresses in Silk Road's digital wallet and Ross Ulbricht's digital wallet, which the FBI found on his seized laptop. 176 Ulbricht was convicted and sentenced to life in prison for operating Silk Road. 177 Further, in what appears to be among the earliest antitrust cases filed in the blockchain space, a plaintiff was able to identify the defendants, who are individuals and business entities. 178 Undoubtedly, blockchain designers will continue to strive toward [\*542] true anonymity for users, but to date this threat appears overblown. 179

## FTC ADV

## OFF

### T Core---2AC

#### ‘Core’ antitrust are the big 3

Michael A. Rataj 21, PC, Law Degree from the Detroit College of Law, “Consequences for Breaking Antitrust Laws”, 5/12/2021, https://www.michaelrataj.com/blog/2021/05/consequences-for-breaking-antitrust-laws/

The core antitrust laws are…

The three core antitrust laws are the Sherman Act, the Federal Trade Commission Act and the Clayton Act. The Sherman Act primarily prohibits unreasonable restraint of trade and monopolization. Those who are in violation of the Sherman Act may face hefty fines, up to $100 million, and up to 10 years behind bars.

The FTC Act prohibits unfair practices or acts and unfair approaches to harming competition. Only the FTC can file cases under this act. The Clayton Act is a catch-all that covers every practice not covered by the Sherman and FTC Acts. Then consequences for violations of both of these acts are usually civil in nature.

### T Per Se---2AC

#### ‘Prohibition’ is injunction. That can happen after review.

Sarah E. Light 19, Assistant Professor of Legal Studies and Business Ethics at the The Wharton School at the University of Pennsylvania, “The Law of the Corporation as Environmental Law”, Stanford Law Review, 71 Stan. L. Rev. 137, Lexis

Section 1 of the Sherman Act prohibits "every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce." 159 There are certain kinds of actions that are per se illegal under the antitrust laws, rendering antitrust law an absolute bar. 160 Such actions include price fixing, horizontal boycotts, and output limitations. 161 Courts apply the per se rule when firms aim to "disadvantage competitors by "either directly denying or persuading or coercing suppliers or customers to deny relationships the competitors need in the competitive struggle.'" 162 In the per se unreasonableness context, the plaintiff need not show anticompetitive effect, as harm to competition is presumed. 163

Before the enactment of the Clean Air Act, the federal government invoked antitrust law to end a collusive agreement among major automakers and their industry association to keep pollution control technology from reaching the California market. By 1952, authorities addressing air pollution in Los Angeles County had accepted scientific findings that motor vehicle emissions were the major source of the smog that blanketed the Los Angeles basin. 164 Local officials began to reach out to the major automobile [\*173] manufacturers about research on emissions-control technology. 165 In 1953, the Automobile Manufacturers' Association (AMA), an industry trade group, began a campaign to study the issue and committed to funding research. 166 In 1955, several automobile manufacturers, including the four major manufacturers - General Motors, Ford, Chrysler, and American Motors - entered into a formal cross-licensing agreement to share technological information and data on the development of emission-control technology, 167 an action that later became the subject of antitrust litigation. 168 They announced their decision publicly, garnering some praise for addressing the smog problem. 169

In 1960, California passed the California Motor Vehicle Pollution Control Act. 170 The Act mandated that manufacturers of new cars install emissions-control devices; however, the mandate was only triggered once such devices had been certified by the newly created Motor Vehicle Pollution Control Board. 171 By 1964, the Board had certified four emissions-control devices as meeting the state's standards, triggering the mandate under the Act. 172 Independent firms, rather than the major automakers, had developed these devices. 173 Shortly after the state certified these devices, the major automakers announced that they, too, had developed their own emissions-control technology, 174 arguably so that they would not be required to license technology from other firms. This sequence of events led some officials in California to conclude that the major automakers had conspired to delay making their own technologies publicly available. 175 After Los Angeles County officials asked the U.S. Attorney General to investigate possible collusion, a grand jury was convened. 176

Although the Department of Justice did not file criminal charges, in January 1969 it filed a civil antitrust suit against the AMA and the four major [\*174] automakers, alleging that the defendants had conspired among themselves and with smaller motor vehicle manufacturers "to eliminate competition in the research, development, manufacture and installation of motor vehicle air pollution control equipment, and in the purchase from others of patents and patent rights, covering such equipment," in violation of section 1 of the Sherman Act. 177 In response to the complaint, the defendants argued that their cooperation had actually accelerated the development of emissions-control devices and noted that collaboration was required to ensure that all manufacturers would be able to comply with the increasingly stringent standards. 178 After the lawsuit was filed, a partner in the law firm representing the AMA penned an article 179 explaining that individual consumers had been "unwilling to spend the additional small amount" necessary to purchase vehicles equipped with emissions-reducing devices. 180 Thus:

So far as the installation of devices was concerned, therefore, the manufacturers had a substantial and legitimate interest in cooperating. No company wanted to incur a cost disadvantage, either in terms of an increase in sales price or an adverse effect on vehicle driveability, without some assurance that all manufacturers were incurring similar disadvantages in the marketplace. 181

Arguably, this was as much a problem of the interaction between corporate law and antitrust law in competitive markets as it was one of antitrust law alone. If firms had a broader mandate beyond profit maximization, including to contribute to the public interest, perhaps they would have been more willing to incur a short-term cost disadvantage, even in a competitive market, rather than enter into an agreement to limit competition.

The parties resolved the suit by entering into a consent decree, which required the defendants not to conspire to delay the development of emissions-control devices and to make available without royalties both patent licenses and data on the emissions-control devices they had developed. 182 However, the decree did not require the defendants to admit liability or pay monetary penalties or damages for environmental harm; nor did it require the [\*175] retrofitting of vehicles. 183 Despite the lack of damages or penalties, in this case antitrust law served as a mandate to promote environmental goals, preventing collusion in the market when firms feared that developing an environmental product would put them at a competitive disadvantage.

A second, more recent example of antitrust law serving as an environmental mandate comes from the European Union, not the United States, but the example offers a similar lesson about the potential confluence, rather than conflict, between antitrust principles and environmental goals. In 2011, the European Commission fined two consumer products firms, Unilever and Procter & Gamble, more than 300 million euros combined for entering into an agreement to maintain prices for laundry detergent while the firms switched to selling a more concentrated, environmentally preferable formulation. 184 The firms switched to the more environmentally friendly formulation as a result of their participation in a voluntary industry initiative called the "Code of Good Environmental Practice for Household Laundry Detergents," 185 a classic example of private environmental governance. The voluntary initiative included reducing the amount of detergent needed for each load of laundry, as well as overall product weight and packaging. 186 The industry initiative appropriately did not include any commitments regarding price fixing. 187

However, the firms privately "agreed to keep the price unchanged" when the "products were "compacted'" in a way that might appear to a consumer that he would be able to wash fewer loads of laundry than the compacted product was capable of cleaning. 188 In addition, they engaged in other forms of price collusion, including "restricting their promotional activity" and "deciding not to pass the benefit of cost savings (reduced raw materials, packaging and transport costs) on to consumers." 189 The firms further agreed on direct price [\*176] increases and "exchanged sensitive information on prices and trading conditions, thereby facilitating the various forms of price collusion." 190

In this case, just as in the case of the automakers, antitrust law enforcement served as an environmentally positive mandate. Relying on antitrust law, the European Commission fined these firms for seeking to avoid passing cost savings from an environmentally beneficial product onto consumers. The motivations of the consumer products firms mirrored those of the automakers: In both cases, the firms feared that being the first to market an environmentally preferable product would reduce profits or create a competitive disadvantage vis-a-vis other firms in the marketplace. This example likewise suggests the importance of viewing antitrust law in connection with other fields, such as corporate law. Firms driven by a profit motive experience that motive in the context of a competitive environment. 191

B. Prohibitions and Disincentives: The Antitrust Per Se Rule and the Rule of Reason

While antitrust law can serve as an environmental mandate by prohibiting collusive behavior that keeps environmentally preferable goods from the market, there is also conflict between antitrust law's goals of promoting competition and environmental law's goals of promoting [\*177] conservation. 192 Because antitrust law's per se rule and rule of reason operate on a somewhat fluid continuum, 193 this Subpart discusses the two doctrines together. The per se rule operates as a prohibition, whereas the rule of reason operates as both a prohibition and a disincentive.

As noted above, antitrust law generally prohibits certain types of market activity - price fixing, horizontal boycotts, and output limitations - as illegal per se, and harm to competition is presumed. 194 For example, if an industry association declines to award a seal of approval necessary for a product's sale without any good faith attempt to test the product's performance, but rather simply because that product is manufactured by a competitor, such an action would be illegal per se. 195 Under this Article's framework, a per se violation is thus a prohibition.

The more fact-intensive inquiry under the rule of reason tests "whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition." 196 While this extremely broad statement might suggest that any fact is relevant to the inquiry, the salient facts under the rule of reason are "those that tend to establish whether a restraint increases or decreases output, or decreases or increases prices." 197 If an anticompetitive effect is found, then the action is illegal and the rule of reason operates, like the per se rule, as a prohibition. 198 The rule of reason can also operate as a disincentive, even if no [\*178] court finds an anticompetitive effect, as uncertainty and litigation risk may discourage firms from undertaking legally permissible, environmentally positive industry collaborations. 199

### Multilat CP---2AC

#### Blockchain harmonization’s impossible

Ethan Chen 21, J.D. from The University of Iowa College of Law, “Cryptocurrency as the Modern-Day Bretton Woods: A Comparative Analysis of Legal Approaches to Blockchain Technology”, Transnational Law and Contemporary Problems, 30 Transnat'l L. & Contemp. Probs. 289, Summer 2021, Lexis

Second, there exists a wide-ranging international response towards security concerns and trade barriers. Issues of interest include "trade barriers for cross-border data flows, international standards, privacy and security concerns, and regulatory implications." 48 There is a high level of disharmony among independent nations regarding the regulation and standards of blockchain technology and cryptocurrency law. 49 As such, cryptocurrencies must traverse an inconsistent global regulatory environment. 50 The regulatory disharmony between governments would pose difficulty in the creation of an international regulatory body. Most notably, differences in the regulatory frameworks of the United States and China pose significant hurdles for international harmonization. 51

Third, major regulatory concerns question whether cryptocurrencies are here to stay or whether they are a speculative bubble. Take, as a classic example, the tulip bulbs in 17th century Holland; they became extraordinarily valuable and then dramatically collapsed. 52Since then, there have been many more speculative bubbles such as the dot-com bubble near the end of the 20th century. 53 The fear that cryptocurrency may be another socio-economic phenomenon has led to stark differences in cryptocurrency regulation among international governments. 54 There is very little regulatory harmonization among countries and a quickly emerging patchwork of complex regulation. 55

### States CP---2AC

#### State control of blockchain will be preempted

Patricia Fry 18, Former Chair of the Uniform Electronic Transactions Act Drafting Committee, Former Professor of Law at the University of Missouri-Columbia School of Law, JD from the Southwestern University School of Law, MA from California State University, Northridge, et al., “Joint Statement in Response to State "Smart Contracts" Legislation”, 4/4/2018, https://esignrecords.org/wp-content/uploads/2018/04/Joint-Ltr-State-Smart-Contracts-Legislation.pdf

Cryptographic signatures fall squarely within the definition of "electronic signature" set forth in UETA and ESIGN. Thus, if blockchain technology or smart contract code is used to create or effect an electronic signature, electronic record, or electronic contract, UETA and ESIGN ensure it is valid. Therefore, legislation seeking to define blockchain technology or smart contracts or to ensure smart contracts are legally enforceable, while well-intentioned, is harmful for the following reasons:

1. Redundancy. Redundancy is confusing, unnecessary, and potentially harmful if courts determine the legislature intended a different effect.

2. Inconsistency. Bills introduced in California, New York, Illinois, Nebraska, and Tennessee this year contain definitions of blockchain and smart contract inconsistent with each other (in some cases) and the definition published by the Chamber of Digital Commerce. The potential for a network of conflicting state laws is obvious.

3. Federal Preemption. ESIGN provides that any state law giving special effect to a specific technology is preempted. Moreover, conflicting state laws provide additional incentive for Congress to preempt those laws to remove barriers to interstate commerce.

### Regulation CP---2AC

#### Ex ante regulations are too rigid and confrontational---antitrust is the sweet spot

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 240-241

3.2 Law + Code

3.2.1 Why together?

We are facing a conundrum. On the one hand, blockchain architecture requires us to find ways to prohibit illegal behaviors (and only those). On the other hand, confrontational law may hamper the technology and therefore reduce the common good or stay ineffective. It is crucial that we find a way around this conundrum. Blockchain code reveals, probably more than ever, the need for collaboration between law and technology: between policymakers, regulators and blockchain communities. This may spark a pivotal moment in legal history, forcing the creation of a new paradigm that leads to the emergence of hitherto unexplored synergies.29

If they work together, these two communities can put in place mechanisms to stop and punish anticompetitive practices once committed by creating a way for legal enforcement instead of trying to prevent all illegal practices from happening in the first place.30 That requires us to find a way for blockchain communities, alongside the regulator, to take practical actions when necessary and give them incentives to do so.

The code that underlies blockchain ecosystems is an ideal candidate to achieve this aim. Code is the language of technology and the principal determinant of behavior within a digital ecosystem. The maxim “code is law” describes that reality.31 As I have explained, blockchain’s architecture creates trust between participants. It is the same architecture that can build “too much trust,” leading to illegal practices because it creates (a sentiment of) impunity from the law. The occurrence of these practices therefore implies that one must adapt the architecture. If policymakers and regulators want the help of blockchain communities, they must translate the law into code so they can implement it and monitor its application.

This is the “law is code” ex-post approach I am arguing for,32 which I distinguish from other “law is code” ex-ante solutions that lead to the prohibition of practices before they even occur or automatic enforcement by code.33 In practice, ex-ante solutions suffer from the rigidity of code language and, above all, from our cognitive and imaginative limits.34 [FOOTNOTE] 34 If only because unexpected elements cannot be computed in advance, see Nassim Nicholas Taleb, The Black Swan: The Impact of the Highly Improbable (Penguin Books, 2010): 1-10 (explaining that inductive reasoning does not allow us to tackle never-before-seen events - the “Black Swans”). [END FOOTNOTE] Instead, the “law is code” ex-post approach I am offering relies on, and allows, other constraints (law, market, norms) to play a part in deterring most illegal practices; and, when implemented, creates a gateway for legal enforcement.

#### Exceptions crush solvency---rules must be economy-wide or they’ll be unclear and litigated

Michèle Finck 18, Senior Research Fellow at the Max Planck Institute for Innovation and Competition and Lecturer in EU Law at Keble College, University of Oxford, “Law & The New Economy: Blockchains: Regulating the Unknown”, German Law Journal, 19 German Law Journal 665, Lexis

I. Regulatory Stability Is a Means of Innovation and Growth

First, we must reiterate that regulation is useful not only from the perspective of the regulator, but also of the regulated. Regulation creates legal certainty, which in turn frees entrepreneurs and innovators from the concern that their activity may be suddenly be qualified as illegal. Such concerns generate hesitant innovators, shy of eventually realizing their vision, or driven to flee the jurisdiction to establish themselves in more friendly territory. Looking back at an earlier wave of digital innovation, the emergence of the Internet, while initially skeptical, tech companies eventually welcomed regulatory intervention. 91 This can be explained by the certainty provided through such intervention in the form of clear rules applicable to all players. Similar tales emerge from the more recent phenomenon of the platform economy. Airbnb has long sought dialogue with regulators and accepted regulation to operate in various locations. 92 Its notoriously reluctant counterpart from the transportation industry, Uber, has now pushed for insurance legalization that applies unanimously across the United States. 93 As Werbach highlighted, "if anything, the innovators stand to lose the most by delaying the involvement of government in adopting reasonable solutions." 94

Regulatory uncertainty creates additional negative externalities. In addition to negatively affecting entrepreneurial courage, it increases the costs of legal compliance as entrepreneurs must go to great lengths to clarify their legal situation, if possible. This is particularly problematic for small players and the many not-for-profit distributed ledger initiatives. Such a state of affairs further increases the risk of litigation, which in turn swells legal costs for companies. It will also give rise to a determination of applicable rules on a case-by-case basis, which would be ill-advised for all parties involved. An absence of [\*684] regulatory guiding principles moreover risks leaving public policy considerations unprotected.

#### ‘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.

#### It results in non-durable rules--- that guts solvency.

Tyler C. Lee 20, J.D. Candidate at the New York University School of Law, B.A. from Baldwin Wallace University, “Decrypting Crypto: Issues Plaguing Today's Hottest Regulatory Nightmare”, New York University Journal of Law and Business, 16 N.Y.U. J.L. & Bus. 551, Lexis

Conclusions & Policy Recommendations

In short, a massive regulatory overhaul is needed in the United States if there is any aim to adequately regulate cryptocurrencies. The current patchwork system has produced a number of high-profile cases that have garnered the ire of the blockchain industry and front-page wins for regulators, but it does little to provide guidance to entrepreneurs looking to enter the field. Individuals looking to deal in crypto run the constant risk of tip-toeing over the ever-shifting regulatory line into illicit work that could earn them fines into the millions or even jail time. Additionally, the system is currently at the mercy of the relationships between regulators themselves; should any of them decide to broaden their interpretation of their own authority to overlap with another's, a court battle that could easily span years would likely ensue - leaving crypto in a legal purgatory.

The ideal means of overhauling this system would be through a congressional act that could officially define blockchain, cryptocurrency, and the jurisdiction of a single agency charged with its regulation. Though perhaps politically unlikely, establishing a new federal agency specializing in these technologies would provide an enormous amount of clarity to the space and allow for thorough, deliberate regulation that balances the interests of consumers and businesses alike. Federal regulators are currently working under an imaginary congressional mandate through the use of clever statutory interpretation and legal gymnastics. This sort of ad hoc governance is not conducive to effective policy-making and has, instead, just led to developers skirting the law by exploiting the massive holes existing between the patchwork jurisdiction. By introducing a new, specialized agency, these gaps can be filled, clarity increases, and the government can begin developing adequate enforcing efforts.

While perhaps opposed in the short term by developers and the industry as a whole, an overhaul in the regulation and enforcement of cryptocurrency in the United States would benefit all parties. Market volatility due to uncertainty around these products is one of crypto's greatest weaknesses and has prevented it from broad adoption. 145 Comprehensive government [\*578] intervention in the marketplace would likely shore up a significant amount of this volatility, thus granting more legitimacy to cryptocurrencies. Consumers could rest assured knowing that, at least to some extent, there are consumer protection mechanisms in place. Businesses and developers would be able to rely upon established federal policies and regulations, eliminating the uncertainty that currently surrounds working in crypto.

#### It triggers a turf war. That decks certainty.

Roberta S. Karmel 10, Centennial Professor, Law, Brooklyn Law School. Co-Director, Dennis J. Block Center for the Study of International Business Law, Brooklyn Law School, "The Controversy Over Systemic Risk Regulation," Brookylin Journal of International Law, Vol. 35, Issue 3, pg. 843.

The Administration’s proposals set off a turf war. Some agencies, together with their congressional oversight committees, are afraid of losing power; thus, various arguments have been raised in favor of the status quo.61 \*\*\*FOOTNOTE BEGINS\*\*\* Stephen Labaton, Regulators Spar for Turf in Financial Overhaul, N.Y. TIMES, July 25, 2009, at B1; Sarah O’Connor, Geithner Urges End to ‘Dumb Regulation’, FIN. TIMES, July 25, 2009, at 7; see also Kara Scannell, Big Companies Go to Washington to Fight Regulations on Fancy Derivatives, WALL ST. J., July 10, 2009, at B1. \*\*\*FOOTNOTE ENDS\*\*\* These arguments are generally in the form of advocating that a Council of Regulators should become the systemic risk regulator.62 Yet, the President’s Working Group has been in existence since 1987 and it has been largely ineffectual in identifying products or practices that pose risks to the financial system.63 A committee of regulators frequently engaged in turf warfare is unlikely to solve system wide risks to the financial markets.

### AT: NB

#### No nuke terror

Dr. John Mueller 20, Professor of Political Science and Senior Research Scientist with the Mershon Center for International Security Studies at Ohio State University, Senior Fellow at the Cato Institute, PhD from the University of California, Los Angeles, “Assessing International Threats During and After the Cold War”, Cato Institute, 5/6/2020, https://www.cato.org/publications/study/assessing-international-threats-during-after-cold-war

In the decade after the Cold War, a similar process of threat identification took place as problems previously considered to be of minor, or at least of secondary, concern were promoted. Anxieties about international terrorism substantially increased during the 1990s and were set into highest relief with the terrorist attacks of September 11, 2001. Extrapolating wildly from 9/11, a terrorist event ten times more destructive than any other in history, terrorism of that sort has repeatedly been taken to present a direct, even existential, threat to the United States or to the West — or even to the world system or to civilization as we know it.6 Wild extrapolations have precipitated costly antiterrorism and antiproliferation wars and huge increases in security spending. In these ventures, trillions of dollars have been squandered and well over two hundred thousand people have perished, including more than twice as many Americans as were killed on 9/11.7 There has been a tendency to see these exercises as misguided elements of a coherent plan to establish a “liberal world order” or to apply “liberal hegemony.“8 However, the overwhelming impetus was far more banal: to get the bastards responsible for 9/11.

Islamist terrorism in the United States has killed some six people per year since 9/11, and far more people in Europe perished yearly at the hands of terrorists in most years in the 1970s and 1980s.9 But there has nonetheless been a tendency to continue to inflate al-Qaeda’s importance and effectiveness.

In fact, al‐​Qaeda Central has done remarkably little since it got horribly lucky in 2001. It has served as something of an inspiration to some Muslim extremists, has done some training, seems to have contributed a bit to the Taliban’s far larger insurgency in Afghanistan, and may have participated in a few terrorist acts in Pakistan. It has also issued a considerable number of videos filled with empty, self‐​infatuated, and essentially delusional threats.10 Even isolated and under siege, it is difficult to see why al‐​Qaeda could not have perpetrated attacks at least as costly and shocking as the shooting rampages (organized by others) that took place in Mumbai in 2008, in Paris in 2015, or in Orlando and Berlin in 2016. And, although billions of foreigners have entered legally into the United States since 2001, not one of these, it appears, has been an agent smuggled in by al‐​Qaeda. The exaggeration of terrorist capacities has been greatest in the many overstated assessments of their ability to develop nuclear weapons. In this, it has been envisioned that, because al‐​Qaeda operatives used box cutters so effectively on 9/11, they would, although under siege, soon apply equal talents in science and engineering to fabricate nuclear weapons and then detonate them on American cities.11

It is possible to argue, of course, that the damage committed by jihadists in the United States since 9/11 is so low because “American defensive measures are working,” as Peter Bergen puts it.12 However, although security measures should be given some credit, it is not at all clear that they have reduced the amount of terrorism significantly. There have been scores of terrorist plots rolled up in the US by authorities but, looked at carefully, the culprits left on their own do not seem to have had the capacity to increase the death toll very much.13 As Brian Jenkins puts it, “Their numbers remain small, their determination limp, and their competence poor.“14 Nor can security measures have deterred terrorism. Some targets, such as airliners, may have been taken off the list, but potential terrorist targets remain legion.15 To a considerable degree, terrorism is rare because as Bruce Schneier puts it bluntly, “there isn’t much of a threat of terrorism to defend against.“16

### Defense Industry DA---2AC

#### 1. Blockchain is siloed from other areas

Jiang Jiaying 20, LLB, LLM, SJD, incoming Hauser Global Fellow at NYU School of Law and Co-Leader of the Central Bank Digital Currency Project with the Paul Tsai China Center at Yale Law School, “Regulating Blockchain? A Retrospective Assessment of China's Blockchain Policies and Regulations”, Tsinghua China Law Review, 12 Tsinghua China L. Rev. 313, Lexis

Under the direction of the national policy objective on technology, blockchain-related policies and regulations pursue the same path of innovation. Technology innovation in the blockchain field possesses distinctive implications owing to the novelty of blockchain and its implementations. Thus, three secondary policy objectives unique to blockchain characteristics are: (1) [\*345] building a blockchain ecosystem connecting everything in cyberspace; (2) standardizing the blockchain industry; and (3) acquiring leading innovation capacities for blockchain.

#### 3. Sector-specific antitrust has no effect on other parts of the economy

Dr. Paul Krugman 1-18, Distinguished Professor in the Graduate Center Economics Ph.D. Program and Distinguished Scholar at the Luxembourg Income Study Center at the City University of New York, Professor Emeritus at the Princeton School of Public and International Affairs, Sole Recipient of the Nobel Memorial Prize in Economic Sciences for Work on International Trade Theory, PhD from MIT, “Why Are Progressives Hating on Antitrust?”, The New York Times, 1/18/2022, https://www.nytimes.com/2022/01/18/opinion/biden-inflation-monopoly-antitrust.html

One thing the Biden administration has been doing, however, is trying to toughen up antitrust policy, arguing that highly concentrated ownership in many industries — largely a result of decades of lax regulation — is helping keep prices high and possibly contributing to recent inflation.

I’d describe this initiative as controversial, except that there’s hardly any controversy, at least in the media: Biden’s linkage of monopoly power to inflation is facing vehement, almost hysterical, criticism from all sides, including many progressive commentators. And I find that vehemence puzzling; I think it says more about the commentators than it does about the administration.

Let’s stipulate that monopolies aren’t the reason inflation shot up in 2021 — because there was already plenty of monopoly power in America back in 2020. True, profit margins, as measured by the share of profits in gross domestic product, have increased quite a lot recently:

Most of that rise, however, probably reflects big returns to companies, like shippers, that happen to own crucial assets at a time of supply-chain bottlenecks. It’s possible, as Senator Elizabeth Warren has suggested, that some companies are using general inflation as an excuse to jack up prices, abusing their monopoly power in ways that might have provoked a backlash in normal times; that’s certainly not a crazy argument, and making it doesn’t make Warren the second coming of Hugo Chavez. Still, such behavior can’t explain more than a small fraction of current inflation.

But as far as I can see, the Biden administration and its allies aren’t claiming otherwise. They’re simply emphasizing monopoly power because it’s one thing they might be able to do something about.

And where is the policy harm? On one side, toughening up antitrust enforcement in sectors like meatpacking is something the U.S. government should be doing in any case. On the other side, there’s no hint that the administration’s antimonopoly rhetoric will lead to irresponsible policies elsewhere.

As I said, all indications are that Biden and company will leave the Fed alone as it raises interest rates in an effort to cool demand. And I haven’t seen any important Democratic figure, inside or outside the administration, calling for Nixon-style price controls. The most interventionist policy that seems remotely possible would be something like John F. Kennedy’s jawboning of the steel industry after an obviously coordinated jump in steel prices — and it’s hard to imagine Biden sounding nearly as hard-line and critical of big business as Kennedy did in that speech, as you can see in the video below.

So why the barrage of criticism, not just from the right — which was to be expected — but from the center and even the center-left?

I don’t really know the answer, but I have a few suspicions.

Part of the problem, I think, is an obsession with intellectual purity. Some policy wonks outside the administration apparently expect the policy wonks inside the administration — many of them friends and former colleagues — to keep sounding exactly the way they did when they weren’t political appointees. But look, that’s not the way the world works. Political appointees are supposed to serve the politicians who appointed them. Dishonesty or gross misrepresentation of reality isn’t OK, but emphasizing the good things one’s employers are trying to do is OK — and part of the job.

Beyond that, it sure looks as if many people who consider themselves progressive are made deeply uncomfortable by anything that sounds populist — even when a bit of populist outrage is entirely justified by the facts. Imagine the reaction if Biden gave a speech sounding anything like Kennedy on the steel companies (again, video below). How many Democratic-leaning economists would have fainting spells?

So here’s my suggestion: Give Biden and his people a break on their antitrust crusade. It won’t do any harm. It won’t get in the way of the big stuff, which is mostly outside Biden’s control in any case. At worst, administration officials will be using inflation as an excuse to do things they should be doing in any case. And they might even have a marginal impact on inflation itself.

#### Massive antitrust AND uncertainty are inevitable BUT won’t stop mergers

Lina Saigol 1-19, Head of Corporate News, EMEA, Dow Jones Media Group, BA from McGill University, “Mergers Are Booming. U.S. Regulators Are Gearing Up to Crack Down on Them.”, Barron’s, 1/19/2022, https://www.barrons.com/articles/mergers-booming-us-regulators-crackdown-51642534456?tesla=y

Aggressive antitrust enforcement is back.

That is the stark message that President Joe Biden has sent the business community, and regulators have already kicked into action, threatening to rein in a record-setting merger boom.

Those charged with delivering Biden’s message are two Big Tech critics: Lina Khan, chair of the Federal Trade Commission, and Jonathan Kanter, head of the Justice Department’s antitrust division. On Tuesday, they outlined a plan to revise how the agencies will review mergers. They want public comment on how to update federal guidelines “to better detect and prevent illegal, anticompetitive deals,” they said in a statement.

“Our country depends on competition to drive progress, innovation, and prosperity,” Kanter said. “We need to understand why so many industries have too few competitors, and to think carefully about how to ensure our merger enforcement tools are fit for purpose in the modern economy.”

Earlier on Tuesday, Microsoft (ticker: MSFT) said it would acquire gaming company Activision Blizzard (ATVI) in an all-cash transaction valued at nearly $70 billion. The acquisition needs regulatory and shareholder approval. Wedbush analyst Dan Ives wrote that there may be regulatory hurdles because of the acquisition’s size. But he expects the deal to close because Microsoft isn’t under the same scrutiny as some of its tech rivals.

Earlier this month, a federal judge ruled the FTC can move forward with its revised antitrust lawsuit against Meta Platform ‘s (FB) Facebook that alleges the social media platform is unlawfully suppressing competition.

Many bankers and lawyers say they aren’t too worried, contending that tighter enforcement might slow the mergers and acquisitions market rather than derail it.

That is due in part because the FTC is constrained by limited manpower and budget. Also, regulators don’t have authority on their own to block a merger—federal judges can issue orders blocking it.

“Of course there has been an increased level of scrutiny and managements and boards have raised the bar on what they will consider, but we will continue to see large deals with compelling strategic imperative,” Bruce Evans, global co-head of M&A at Deutsche Bank , told Barron’s.

In December, the FTC sued to block computer-chip powerhouse Nvidia (ticker: NVDA) from spending $40 billion for British technology provider Arm, saying the blockbuster deal would unfairly stifle competition.

Just weeks earlier, the Justice Department sued to halt a proposed $2.2 billion tie-up between publishers Penguin Random House and Simon & Schuster, which would create a mega-publisher in the books market. The agency argues that consolidation would hurt authors and readers.

The lawsuits come after Biden signed a sweeping executive order in July aimed at curbing the power of big business by cracking down on anticompetitive practices in sectors ranging from agriculture to pharmaceuticals to labor.

Consolidation in industries over the past several decades has denied Americans the benefits of an open economy and widened racial, income, and wealth inequality, the executive order stated. The administration sees less corporate competition as one of the causes of inflation. “Higher prices and lower wages caused by lack of competition are now estimated to cost the median American household $5,000 a year,” according to the order.

Rising equity markets and widespread stimulus measures helped spur companies worldwide to clinch more than 62,000 deals worth $5.8 trillion last year, up 64% from the previous year, according to data provider Refinitiv.

Big pharmaceutical companies could be one of the biggest sectors at risk of regulatory scrutiny. The FTC put the industry on alert in July when it said it would review more deals amid skyrocketing drug prices and ongoing concerns about anticompetitive conduct.

The industry still has record levels of cash to spend and needs to merge to innovate. By the end of this year, 18 large-cap U.S. and European biopharmas will have more than $500 billion in cash on hand, according to estimates by SVB Leerink analyst Geoffrey Porges.

Deal makers will be closely watching Pfizer ‘s (PFE) $6.7 billion takeover of Arena Pharmaceuticals , announced in December, which could become a test case for the FTC’s view of pharma M&A.

Citi analyst Andrew Baum said the deal was “highly attractive” for Pfizer, but the key issue would be whether the “newly muscular” FTC would fight it and allow it to proceed given the significant overlap between important drugs. The two companies might need to sell parts of the business to push the deal through.

Some companies are calling off their planned mergers as soon as they receive feedback. In December, outdoor sporting goods retailer Sportsman’s Warehouse Holdings (SPWH) and Great Outdoors Group, owner of the Bass Pro Shops chain, canned their deal in the belief that it wouldn’t be approved, according to a regulatory filing.

Months earlier, insurance brokers Aon (AON) and Willis Towers Watson (WTW) pulled their merger after the DOJ sued to stop the $30 billion tie-up. The brokers said regulators’ objections created “unacceptable delay and uncertainty.”

“While inevitably some parties may not be willing to accept increased risk and opt not to pursue a transaction, the vast majority of transactions will move forward and all but a select few will ultimately close,” Frank Aquila, global head of M&A at international law firm Sullivan & Cromwell said.

Others are fighting back. Penguin Random House and Simon & Schuster last month filed a joint response opposing the DOJ’s suit, arguing that the lawsuit “is wrong on the facts, the law, and public policy.”

The U.S. Chamber of Commerce has also sharpened its attack on the FTC, accusing the regulator of “waging a war” against American businesses, failing to strictly follow rules and caving to political interference.

“The FTC is going rogue and engaging in regulatory overreach that is accelerating uncertainty and threatening our fragile economic recovery,” the chamber said.

#### It’s a surgical approach that leaves most conduct to self-regulation---that reverses the perception of overreach

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 240-244

3.2 Law + Code

3.2.1 Why together?

We are facing a conundrum. On the one hand, blockchain architecture requires us to find ways to prohibit illegal behaviors (and only those). On the other hand, confrontational law may hamper the technology and therefore reduce the common good or stay ineffective. It is crucial that we find a way around this conundrum. Blockchain code reveals, probably more than ever, the need for collaboration between law and technology: between policymakers, regulators and blockchain communities. This may spark a pivotal moment in legal history, forcing the creation of a new paradigm that leads to the emergence of hitherto unexplored synergies.29

If they work together, these two communities can put in place mechanisms to stop and punish anticompetitive practices once committed by creating a way for legal enforcement instead of trying to prevent all illegal practices from happening in the first place.30 That requires us to find a way for blockchain communities, alongside the regulator, to take practical actions when necessary and give them incentives to do so.

The code that underlies blockchain ecosystems is an ideal candidate to achieve this aim. Code is the language of technology and the principal determinant of behavior within a digital ecosystem. The maxim “code is law” describes that reality.31 As I have explained, blockchain’s architecture creates trust between participants. It is the same architecture that can build “too much trust,” leading to illegal practices because it creates (a sentiment of) impunity from the law. The occurrence of these practices therefore implies that one must adapt the architecture. If policymakers and regulators want the help of blockchain communities, they must translate the law into code so they can implement it and monitor its application.

This is the “law is code” ex-post approach I am arguing for,32 which I distinguish from other “law is code” ex-ante solutions that lead to the prohibition of practices before they even occur or automatic enforcement by code.33 In practice, ex-ante solutions suffer from the rigidity of code language and, above all, from our cognitive and imaginative limits.34 Instead, the “law is code” ex-post approach I am offering relies on, and allows, other constraints (law, market, norms) to play a part in deterring most illegal practices; and, when implemented, creates a gateway for legal enforcement.

3.2.2 Blockchain code

The “law is code” approach I suggest strikes what I find to be a satisfying MOAF balance. In terms of accuracy, modifying code to allow other constraints creates few false negatives and even fewer false positives. There is no need for overreaching regulations or to break the blockchain door altogether. This “law is code” approach is more surgical. In terms of manageability, it gives power to blockchain communities which are the first to implement and enforce blockchain code. Policymakers and regulators will trust new blockchain architectures; only the costs of verification will remain.

In terms of objectivity for private actors, one can trust that blockchain communities will know the rules they enforce. The extent to which these communities should enforce the rules on their own, or with the supervision of regulators, is debatable (see below). In terms of flexibility, that “law is code” approach is non-coercive, as it is agreed upon, implemented and enforced by blockchain communities. The more significant the role of the community agreeing to enforce these rules, the less top-down and coercive they will become. In the end, there is every reason to believe that such as “law is code” ex-post approach will achieve proper deterrence. If mechanisms are in place to deter and punish illegal practices, and if blockchain participants are made aware of these mechanisms, then the number of such practices will be significantly reduced. Again, as Beccaria said:

one of the greatest checks on crime is not the cruelty of punishments, but their inevitability ... the certainty of a chastisement, even if it be moderate, will always make a greater impression than the fear of a more terrible punishment that is united with the hope of impunity.35

Two mechanisms can be used in that regard: a first that allows communities to discourage and sanction anticompetitive practices, and a second that enables courts and regulators to “enter” blockchains. Both come with specific challenges. The first will partially recentralize blockchain, but it proves to be best for “targeting.” The second requires participants to trust the rule of law on top of the rule of code, but maximizes “objectivity,” since the regulator has no financial interest in the blockchain, unlike the other participants.

4 CHAPTER SUMMARY AND BEYOND

In this chapter, I started by analyzing the new challenges that blockchain creates for policymakers and regulators. I showed that blockchain has singular characteristics that require specific regulations in response. In the absence of such regulations, blockchain creates a nearly impenetrable fortress. One must then find a solution to make the law applicable. With that in mind, I introduced four principles against which to assess potential regulation: (1) accuracy, (2) manageability, (3) objectivity and (4) flexibility. I explained that one cannot maximize them all at once, as significant tradeoffs are involved.

Against this analytical framework, I have assessed distinct types of regulatory approaches. I concluded that a classic confrontational approach would not lead to good results. I explained this confrontational approach would either threaten the survival of blockchain technology or simply prove to be ineffective. Conversely, when law and code are combined, the results are more satisfactory. This collaboration implies that blockchain communities and regulators must find common ground to introduce mechanisms that sanction illegal practices when they are committed and, even before that, prevent them from taking place by relying on other constraints. In the next chapter, I detail the terms of this arrangement and explore how blockchain communities would ultimately agree to take part in the “law is code” approach that I have advocated for.

1 A POSITIVE AGENDA

In this section, I introduce a positive agenda that would lead agencies to create comfort zones and to direct legal enforcements toward certain specific practices. The objective is to create the right incentives for blockchain communities to implement the “law is code” approach described in Chapter 13 - that is, translating the law into code in a way that opens up ex post enforcement. This approach would lead to a cooperative relationship between law and technology. The result would be better legal protection for blockchain communities (which would suffer from fewer anticompetitive practices) while ensuring blockchain creates a positive impact outside the ecosystem.1 But getting there will require mutual concessions.

### AT: Defense Impact

#### Massive alt causes to defense base collapse

Mark Thompson 19, National Security Analyst at the Project on Government Oversight, “The Incredibly Shrinking Defense Industry”, Project on Government Oversight, 8/1/2019, https://www.pogo.org/analysis/2019/08/the-incredibly-shrinking-defense-industry/

The health of the defense-industrial base has been a perennial concern. The latest warning about the Pentagon’s shriveling supplier corps was issued by the Defense Department’s own Office of Manufacturing and Industrial Base Policy on May 13. While big defense-contractor profits remain juicy, many smaller Pentagon suppliers are struggling. And the number of contractors doing defense work is shrinking: 97 percent of the Pentagon’s missiles are built by Lockheed and Raytheon. And 98 percent of the lower-level subcontractors making parts for U.S. munitions are the only source for the military parts they make.

Worse, the Pentagon pipeline for missiles and munitions is plagued with problems, including “material obsolescence and lack of redundant capability, lack of visibility into sub-tier suppliers causing delays in the notification of issues, loss of design and production skill, production gaps and lack of surge capacity planning, and aging infrastructure to manufacture and test the products,” the report warns. “Production gaps for munitions and missiles directly reduce the U.S. capability to deliver kinetic effects against adversaries.” In October, a second report from the Trump Administration said the nation has an increasingly “fragile” defense-industrial base with “entire industries near domestic extinction” and growing reliance on foreign sources.

<<MARKED>>

“There are currently only two domestic suppliers for solid rocket motors used in the majority of DoD missile systems, with a single foreign supplier making up the balance,” the report said. More than 80 percent of the Pentagon’s armored vehicles are built by a single manufacturer in a single plant. There is only a single company producing chaff, the foil-like fibers U.S. warplanes eject to distract incoming missiles.

### Biz Con DA---2AC

#### Business confidence is completely resilient

Clint Rainey 1-19, MA in Journalism from Columbia University, BA in Journalism from the University of Texas, Investigative Journalist and Freelance Writer for NYMag, Fast Company, Businessweek, MIT Technology Review, “For Some Reason, CEOs Are More Optimistic Than Ever About The Economy”, Fast Company, 1/19/2021, https://www.fastcompany.com/90713799/for-some-reason-ceos-are-more-optimistic-than-ever-about-the-economy

Business leaders’ optimism about the short-term economy is at its highest point in a decade despite, well, crises seemingly in every direction you look. (A short list includes a two-year-long global pandemic, record inflation, supply shortages, the Great Resignation, and the past seven years being Earth’s seven hottest on record.)

That’s according to accounting giant PwC’s latest Global CEO Survey, released yesterday.

The annual survey, now in its 25th year, polled 4,446 CEOs worldwide back in late fall of 2021, which, it’s worth noting, was also before the omicron wave broke. Still, just 15% of them said they believe economic conditions can’t get any worse in 2022—a relatable position, perhaps—but the vast majority, 77%, go even further, predicting “a stronger global economy in the coming year.” PwC says this is the “most confident” that global CEOs responding to its survey have been since 2012, when recovery from the Great Recession was in full swing.

It’s fair to say respondents worldwide are optimistic, but breaking their answers down country by country muddies the waters a bit. Optimism was highest in India, where 94% of CEOs anticipate global growth in the coming year, 6 points higher than last year. It climbed among CEOs in Japan as well (up 16 points to 83%), and in the UK (up 5 points to 82%), then leapt a ton in Italy (up 18 points to 89%) and France, which recorded the biggest increase (up 25 points to 85%).

Meanwhile, optimism took a hard tumble in four very big, key countries: the U.S. (down 18 points to 70%), China (down 9 points to 62%), Brazil (down 8 points to 77%), and Germany (down 4 points to 76%). Tellingly, however, American CEOs told PwC they’re just as confident as CEOs in India about their own company’s 2022 growth prospects—in both countries, about 40% are “extremely confident” that they’ll achieve revenue growth this year.

In his statement, PwC’s global chairman, Bob Moritz, writes that this level of optimism “speaks to the strength and resilience of the global economy and the ability of CEOs to manage through uncertainty.” He sums it up like this: “There is nothing ‘normal’ about the world we are working in, but we are getting used to it.”

By teaching their workforce technical, human, and learning skills, organizations will be better prepared for the challenges of tomorrow

The looming question—Why?—is not one PwC answers. Other first-of-the-year reports in recent days paint bleaker pictures for 2022. Last week, the World Bank released one warning that the world’s poorest countries face $35 billion in debt repayments this year, enough to potentially push some to the brink of default. In the run-up to Davos, the World Economic Forum just released its annual global risks report. Answers to a question asking 1,000 global leaders to identify the planet’s most imminent risks read like themes from a Cormac McCarthy novel: “extreme weather,” “livelihood crises,” “infectious diseases,” “debt crises,” and “social cohesion erosion.” Even in PwC’s own survey, CEOs still said despite their optimism that they worry in the coming year about cyber threats, health crises, climate change, geopolitical conflict, social inequality, and “macroeconomic volatility.”

#### Future shocks are inevitable

Anu Madgavkar 1-13, Partner with the McKinsey Global Institute, Asutosh Padhi, Managing Partner for McKinsey in North America, and Sven Smit, Co-Chairman of the McKinsey Global Institute, “The CEO Agenda in 2022: Harnessing the Potential of Growth Jolts”, McKinsey & Company, 1/13/2022, https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-ceo-agenda-in-2022-harnessing-the-potential-of-growth-jolts

The second jolt could come from careful navigation of potential COVID-19-exit disruptions

The coming months will likely present risks ranging from the economic to the geopolitical, and these should not be underestimated. However, those who successfully navigate the headwinds could unlock potential for a second boost to growth. (Exhibit 2).

* Inflation. The consumer price index is skyrocketing faster than it has in two generations—a trend the Federal Reserve has stated it will work to stabilize.3 Whether inflation in a given industry is driven by nascent demand or supply constraints, companies that navigate this inflationary back-and-forth—whether by leveraging procurement, pricing, or balance sheet strategies—could gain market share.
* The labor mismatch. A record number of employees have or plan to quit. In the United States, voluntary attrition increased by almost 800,000 in the past year, while involuntary attrition decreased by almost 400,000 during the same period. Businesses may want to consider ways to balance investment in both developing talent and finding tools to increase productivity.
* Supply chain shortages. The sudden surge in demand has provoked a traffic jam of historic proportions in the global supply chain.4 While significant blockages are linked in part to the labor shortage, the use of digital tools could help give companies an edge. Research shows that companies successfully solving the supply chain riddle were 2.5 times more likely to have used preexisting advanced analytics tools.
* Omicron impacts. As the Omicron variant of COVID-19 spreads, there are more questions than answers about its infectiousness, immune evasion, and severity. This next phase of the pandemic will likely remain a revealing test of leadership. Leaders may want to consider continued action on three imperatives: clarifying purpose, supporting stakeholders, and bolstering emotional and organizational resilience.
* Geopolitical uncertainties. Geopolitical tension is escalating in many parts of the world. Businesses may want to anticipate and respond to potential government action in strategic sectors, while also identifying areas for global cooperation on trade, climate, and technology.
* Energy market volatility. The past year has seen significant growth
* <<MARKED>>
* in energy prices, with natural gas prices growing by 50 percent in the United States5 and even greater volatility expected in the year ahead.6 While managing current market volatility, leaders must also prepare for the energy transition, which brings forth additional risks: growth investments might get crowded out, consumers may not be able to foot the bill, and the grid infrastructure could be vulnerable. Leading businesses will deliver on their net-zero commitments while managing those risks.

#### Decline doesn’t cause war

Dr. Stephen M. Walt 20, Robert and Renée Belfer Professor of International Relations at Harvard University, PhD in International Relations (with Distinction) from Stanford University, MA in Political Science from the University of California, Berkeley, “Will a Global Depression Trigger Another World War?”, Foreign Policy, 5/13/2020, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”

Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

### Midterms DA---2AC

#### The midterm’s an eternity away---COVID, Afghanistan, and black swans thump

Philip Mathew 21, Editor at The Week, “Biden's Ratings Plunge; Should Democrats Start Worrying About 2022 Midterm Elections?”, The Week Web Desk, 9/3/2021, https://www.theweek.in/news/world/2021/09/03/bidens-ratings-plunge-should-democrats-start-worrying-about-2022-midterm-elections.html

Nonetheless, there are over 400 days left till November of 2022—several eternities in American politics. Whether that period will reflect the values of a post-COVID future, or a time of third and fourth vaccines jabs that are growing increasingly unpopular among right-wing voters, or if it reflects the reality of a Taliban government completing a year in power (or a collapse of the same), will all affect the Democrats’ prospects.

#### Antitrust is unpopular BUT irrelevant

Claude Marx 21, MA in American Politics from Georgetown University, BA in Political Science and History from Washington University in Saint Louis, Reporter at MLex/FTC:Watch, “Biden’s Bid to Boost Competition Could Reap Political Benefits”, mLex Market Insight, 7/26/2021, https://mlexmarketinsight.com/news-hub/editors-picks/area-of-expertise/antitrust/bidens-bid-to-boost-competition-could-reap-political-benefits

But the public is less certain about remedies.

A June Morning Consult poll for Chamber of Progress, a Democratic-leaning pro technology organization, found that 53 percent of 2,000 registered voters supported more regulation of large tech firms. But the number dropped to 39 percent when people were informed that some of the changes might result in fewer offerings to consumers.

When people were told that a series of antitrust bills approved by the House Judiciary Committee last month would ban free shipping by Amazon Prime, 59 percent were more likely to oppose the bills, which are awaiting action by the full House.

University of Virginia political scientist Larry Sabato told FTCWatch that most policy issues don’t by themselves influence election outcomes but are part of an overall image that voters have.

“They contribute to how people feel about parties and individuals. And that’s important in these very partisan times. So it reinforces the Democrats’ image as skeptical of Big Tech. It won’t have a great effect on the 2022 election, but the impact isn’t non-existent either,” he said.

Paul Swanson, an antitrust partner at Holland & Hart, thinks the effectiveness of the initiatives by the administration will depend on messaging.

“The issues of competition and antitrust are abstract, and the administration is wise to issue a list of how people are affected,” he said. “But it will be really hard to make it resonate with people. Even though people think tech is too big, they love their iPhone, they love Facebook. However, there are many areas where the average American feels the pinch, and if the administration can say ‘if companies get too big, it locks you in and limits choices and raises prices,’ that could work with some voters.”

# 1AR---Round 5---Rutgers RR

## Regulation CP

### Solvency---1AR

#### 4. The CP triggers conflicts AND only addresses superficial exclusion

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 236-238

In this section, I analyze different strategies for policymakers and regulators to enter the blockchain fortress without hampering the growth of blockchain ecosystems. I consider the temptation to create ex ante regulation and explain that collaboration with tech communities will prove mutually beneficial.

3.1 Finding a Way

3.1.1 Theoretical primacy

Can the law take up the challenge on its own? Can it lift all barriers protecting blockchain? If it engages in this direction, can it maximize the four MOAF criteria?

As I mentioned, blockchain raises several issues regarding the theoretical applicability of the law (see Chapters 6 and 7) and its actual enforcement. Even if applicability issues could be resolved, enforcement issues would still pose problems that cannot merely be addressed by recalling the theoretical primacy of the rule of law. Blockchain requires special rules that enable the application of legal rules.

I have explained that blockchain is immutable and unstoppable. While exceptions to these principles can be identified, they remain marginal. For that reason, upstream regulation is necessary to catch up with the technology. However, if the law wanted to solve this problem on its own, it would clash with blockchain ecosystems. There is a strong temptation to follow that road; after all, why should policymakers look for solutions in the architecture and governance of the technology that is causing the issue? The answer is that not doing so would lead to destructive policies.

One confrontational idea that seems to come up quite often, for example, is the creation of an identity management system that would require the setting up of a database linking public keys to real-life identities and revealing these links when necessary.17 But what is “necessary?” When is it so? And who would keep the register? If that were a private entity, it could gain a commercial advantage. If that were the government, this would crush some users’ trust in the blockchain and would cause privacy concerns.

Scholars have also suggested that a regulatory node could be added to blockchains to spy on them.18 Or that policymakers could introduce backdoors on individual computers to monitor citizens’ behavior. First, there is every reason to believe that many blockchains would refuse that node or backdoor. And even if one were added, it would not make enforcement of the law any easier; in fact, it would solve only the encryption “problem,” but not the immutability “problem.” Concomitantly, it would create a strong deterrent effect on blockchain activities.

Other proposals include criminalizing core developers’ activities and imposing fines on them when a blockchain is used for illegal activities.19 But as I have shown, core developers do not enjoy a coercive power they could use to stop unlawful practices. And again, should they create the mechanisms to secure such power, this would generate distrust within the system by reinserting vertical control, the absence of which is the precise reason why blockchains are thriving.

Furthermore, some are defending the necessity of allowing governments to “filter” the data held by Internet service providers.20 The basic idea is to regu- late the Internet layer rather than blockchain architecture or governance layers. Such a proposal would most likely infringe individual freedoms, such as the right of access to the Internet.21 Lastly, proposals have been tabled to ban the creation of anonymous crypto accounts22 or prohibit the issuance of stablecoins by anyone else but banks.23 These proposals would also endanger blockchains by reintroducing centralization through the creation of ledger holders, slowing down innovative dynamism and forcing institutionalized actors to become the only players.

In short, none of these coercive measures is appropriate.24 Yet proposals to simply regulate blockchain use cases will do the trick only at the application layer, leaving untouched all the structural issues that will keep on appearing.25 Architectural problems demand architectural solutions.26

#### 6. Adjudication is key---discovery, cross-examination, depositions are vital---agency ‘proceedings’ are insufficient---answers Chopra on the other deficit.

Robert A. Jablon 13, L.B.B. Harvard Law School, Partner at Spiegel & McDiarmid LLP, Anjali G. Patel, J.D. from University of Michigan Law School, Associate at Spiegel & McDiarmid, and Latif M. Nurani, J.D. from Columbia Law School, Associate at Spiegel & McDiarmid, Article: Trinko and Credit Suisse Revisited: The Need for Effective Administrative Agency Review and Shared Antitrust Responsibility, 34 Energy Law Journal 627

E. Antitrust Enforcement Requires Full Factual Development

Antitrust issues tend to be fact based. 152 Fact intensive issues often may not be properly resolved in non-adjudicatory proceedings, unless the deciding entity has compulsory process requirements and its own investigative and enforcement capabilities. 153 Even there, facts must be uncovered, and factual issues must often be determined under an adjudicatory process. 154

Entities that choose to break the law usually do not publicize their decisions or actions towards that end. The Sherman Act has been in place for over a century, and power companies, natural gas pipelines, and other regulated entities have become aware that they should not admit, and certainly should not publicize, actions to restrain trade or to monopolize. 155 Any trial lawyer who has had more than a smattering of litigation practice understands that large organizations have stated policies which may or may not correlate with the reality of what people acting for the organization do on the ground. Virtually every organization that uses heavy transportation equipment, for example, will have a policy asserting that it is very conscious of safety, but that policy may or may not comport with its actual behavior. 156 Thus, organizations engaged in offshore petroleum drilling may have a public policy asserting something like:

We are in a hazardous business, and are committed to excellence through the systematic and disciplined management of our operations. We follow and uphold the rules and standards we set for our company. 157

Although we use BP as an example because of its relatively recent notoriety, most of the other participants in these and other industries would have similar published policies. 158 But in many cases, company personnel do not [\*653] always follow the official policies (occasionally with the actual or constructive knowledge of management). 159 As organizations become larger and more complex, this disconnect between management assertions (and perhaps belief) and fact may become even more pronounced.

Even in the "old days" agencies with a "special concern" for an industry found it difficult to permit injured parties to obtain the proof needed to make a case when tinged with antitrust issues. 160 Today's exercise of "fact finding" works even less well for establishing the facts of what actually occurred. If an agency does not permit inconvenient facts to get in the way of its preferred policy directions, there likely will be people willing to state their company's "policy," and smaller entities making contrary statements will tend to be overridden in the interests of claimed efficient decision-making. 161 Where motivation is at issue, absent an ability to test factual assertions, anticompetitive motivations can be buried.

Anyone who has ever been in a trial knows that where there is discovery, motives can be uncovered far different from those that are "officially" presented. Interrogatories, hearings, and the opportunity to cross-examine are just a few of the discovery tools needed to ferret out the truth from sophisticated parties whose actions monopolize regulated markets. Similarly, prior to the adoption of FERC Order No. 888 that provides for open access transmission service, 162 municipalities and cooperatives frequently found the opportunities for documentary discovery and cross-examination the primary means to expose the [\*654] discriminatory practices of large investor-owned utilities that were refusing to transmit for or otherwise deal fairly with these dependent, competing cities and cooperatives in the electric business. 163 The following is a transcript excerpt from a cross-examination conducted by one of the authors of this paper during the deposition of the Chief Executive Officer of Consumers Power Company on antitrust issues that shows the need for cross-examination and other discovery:

Q. "Just to be clear about it, if, say, a municipal entity in the State of Ohio desired to buy wholesale power from Consumers Power, would you sell to it?

A. "I don't think so.

…

Q. "Assume that … some other entity were willing to sell power to a municipality within your service territory, would you sell transmission services to get the power there?

A. "The matter has never come up and I think I would want to know more of the details of the transaction.

Q. "What kinds of things would you want to know?

A. "I would want to know, for one thing, whether or not our lawyers felt we were obligated to do so. For another, I would want to know for what purpose the power was being sold and at what rate -

Q. "Sold by whom?

A. "By a selling firm. At what rate, what the receiving utility intended to do with it, what impact it would have in the long run on the ability of Consumers Power Company to maintain its present markets.

Q. "Is it fair to say that your judgment would be based at least in part on your judgment of the extent to which the purchase of this power by the municipality or cooperative within your service territory enabled it to reduce its rates in competition with Consumers Power?

A. "I think that would be a factor.

Q. "A large factor?

A. "I think so.

Q. "Apart from the question of your legal obligation, are there any other major factors?

A. "Well, I think the size of the transaction would be a factor.

Q. "Why is that?

A. "Well, it might be a matter that all things considered wasn't too significant. I think whether the receiving utility actually was going to use it to invade our present market area would be a factor.

Q. "What do you mean by "invade our present market area?'

A. "Well start taking away our customers which we have invested a great deal of money in order to serve them … . We do concern ourselves with the relative rates at which we are able to supply service to our customer as compared with those of other entities. Frankly, we don't like to put ourselves in a position where we are increasing the extent to which our performance looks bad in relationship to that of other entities.

Q. "Does that complete your answer?

A. "Just one final thought on that and that is to the extent that we do we increase our exposure to losing our markets." 164

One knows that one would never have obtained such evidence of refusals to deal and their motivations in a rulemaking or as a result of a conference.

[\*655] In another similar situation, the vice president of an investor-owned utility was pointedly asked by both municipal counsel and the presiding judge whether the company would provide service to a municipality under its existing tariff in a case involving claims of anticompetitive refusals to deal. 165 In responding, the vice president stated:

[Mr. Gardner:] Your Honor, I would have to abide by the Commission's decision on the matter. As I said, I think that the request is inequitable to [Florida Power & Light Co. (FP&L)] and its other customers. I think the tariff is inappropriate to the service required. And if the Commission decides that we should render it, obviously we will. But I am very reluctant to do it under the circumstances of the perceived injury that I see will occur to FP&L because of the inappropriateness of the rate.

Presiding Judge: So, could I characterize your answer in a way that might be a little more dogmatic … in the absence of direction by this Commission Florida Power & Light would not provide service [under its existing tariff]?

[Mr. Gardner:] FP&L is reluctant to provide the service, and I guess in the absence we probably won't. But as I say, we are very reluctant to do so. 166

These companies settled the cases in question, agreeing to no longer follow such practices. However, these examples demonstrate the necessity of discovery and cross-examination to antitrust and other agency determinations. 167 In the latter case, it was the first time the company admitted it was refusing to sell wholesale power to competitors, as opposed to its previous evasions that the matter had to be studied and the like.

Today, even in theoretically adjudicative proceedings, such as merger or complaint cases, discovery and cross-examination would rarely be available in antitrust cases at the FERC because the FERC tends to decide cases on the pleadings or after paper hearings. Discovery is generally unavailable unless a traditional hearing is ordered. 168 Paper hearings containing statements drafted or scrutinized by lawyers, conferences, etc. do not bring the same results. Through these, one merely gets a carefully scripted company position without the process needed to ferret out the truth. We stress that the issue is not the correctness of any particular decision or the appropriate application of antitrust policy in specific cases, but that, as the preceding subsections show, agency decisions are plainly influenced by factors divorced from antitrust concerns. 169 Where market contours are being determined, major mergers are being approved, minimum prices are being imposed, and other competitive actions are being decided with minimum process, a more probing antitrust inquiry is required than that which is generally available before agencies.

#### 3. Comparison---a static legally-defined entity is necessary to establish market power

Dr. Thibault Schrepel 20, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, “The Theory of Granularity: A Path for Antitrust in Blockchain Ecosystems”, 1/14/2020, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3519032

b. The determination of market power thanks to the theory of granularity

For many years, a number of academic articles have denounced a disconnect between static legal analysis and the dynamic nature of digital markets.207 Public permissionless blockchains exacerbate this problem insofar as their borders are not as stable as the firms’. Public permissionless blockchains have no entry or exit door, freeing its participants to move from one blockchain to another. Such movability must lead to rethinking antitrust and competition law analyses in terms of market power.208 [FOOTNOTE] 208 Generally speaking, as it has been stressed by Lawrence Lessig, “an unmovable, and unmoving, target of regulation, then, is a good start toward regulability,” LESSIG, supra note 134, at 139. [END FOOTNOTE]

The theory of granularity helps in overcoming this difficulty as it permits to center antitrust and competition law on the participants gathered together within the same legal fiction. Comparing the different nuclei in the same relevant market leads to establishing their market power

## Biz Con DA

### No Spillover---1AR

#### Antitrust is siloed with checks on cross-industry enforcement

Dr. William Rogerson 20, Charles E. and Emma H. Morrison Professor of Economics at Northwestern University, Ph.D. in Social Sciences from the California Institute of Technology, and Dr. Howard Shelanski, Ph.D. in Economics from University of California, Berkeley, Professor of Law at Georgetown University and Partner at Davis Polk & Wardwell LLP, JD from the UC Berkeley School of Law, BA from Haverford College, Former Clerk for Judge Stephen F. Williams of the U.S. Court of Appeals for the D.C. Circuit and Justice Antonin Scalia of the United States Supreme Court, Former Administrator of the White House Office of Information and Regulatory Affairs and Director of the Bureau of Economics at the Federal Trade Commission, Former Chief Economist of the Federal Communications Commission and Senior Economist for the President’s Council of Economic Advisers at the White House, “Antitrust Enforcement, Regulation, and Digital Platforms”, University of Pennsylvania Law Review, 168 U. Pa. L. Rev. 1911, June 2020, Lexis

A. Case-by-Case, Fact-Specific Approach

Complexity of underlying issues aside, adjudication is well suited to settings in which applicability of the law is contingent on case-specific facts. With the exception of the limited conduct that the antitrust laws prohibit per se, courts review most business activities through a rule of reason, under which some conduct that is illegal in one set of circumstances is allowable in another. 21The inquiry into liability goes beyond whether particular conduct in fact occurred (which is the extent of the inquiry into conduct that is illegal per se) and extends into a balancing of the conduct's likely effects on competition. 22The more that liability is contingent on such case-specific facts, the more difficult it is to determine liability in advance of the conduct's having taken place. Adjudication typically occurs when conduct either is imminent or has already occurred, at which point the relevant facts as to the effects of the conduct are, in principle, more readily measured. 23 Such "ex post" mechanisms of enforcement can reduce the risk of over-enforcement when compared to alternative approaches, like some forms of regulation, that spell out more comprehensively in advance what conduct is illegal. 24Reducing false positives, however, may or may not be a virtue--that calculation depends on the extent to which particular adjudicative institutions and processes under-enforce by allowing harmful conduct or transactions to slip through the liability screen.

B. Slow, Usually Predictable Doctrinal Development

A second attribute of the American adjudicatory process for antitrust is stability. While antitrust doctrine has occasionally swerved abruptly over the past century, the common-law process through which antitrust law has developed usually provides clear notice that a change is coming. As a recent example, the Supreme Court's shift in Leegin Creative Leather Products, Inc. v. PSKS. Inc. 25from per se liability to a rule of reason for resale price maintenance likely caught few observers by surprise. 26

#### Precedent will be distinguished because it’s solely digital

Dr. Paul Belonick 20, Assistant Prof. of Practice and Director, Startup Legal Garage, Center for Innovation, UC Hastings Law School. University of Virginia, J.D. 2010, PhD. 2016, “Transparency is the New Privacy: Blockchain's Challenge for the Fourth Amendment”, Stanford Technology Law Review, 23 Stan. Tech. L. Rev. P114, Winter 2020, Lexis

Blockchain technology is now hitting the mainstream, and countless human interactions, legitimate and illegitimate, are being recorded permanently--and visibly--into distributed digital ledgers. Police surveillance of day-to-day transactions will never have been easier. Blockchain's open, shared digital architecture thus challenges us to reassess two core premises of modern Fourth Amendment doctrine: that a "reasonable expectation of privacy" upholds the Amendment's promise of a right to be "secure" against "unreasonable searches," and that "a reasonable expectation of privacy" is tantamount to total secrecy. This article argues that these current doctrines rest on physical-world analogies that do not hold in blockchain's unique digital space. Instead, blockchain can create security against "unreasonable searches," even for data that are shared or public, because blockchain's open distributed architecture does the work in digital space that privacy does in physical space to advance Fourth Amendment values such as security, control of information, free expression, and personal autonomy. The article also evaluates textualist approaches to blockchain, concluding that the twenty-first century's latest technology shows how the eighteenth-century text's focus on ownership and control may be a better means to achieve fundamental human ends than privacy-as-secrecy. Finally, the article proposes an analytical framework for Fourth Amendment protections for distributed ledgers--corresponding to the levels to which blockchain users evince control of their data--that is grounded in text and theory and that is administratively practicable for courts.

#### It’s specialized and unique

Nathan Fulmer 18, J.D. / MTax Candidate at The University of Akron School of Law, “Exploring the Legal Issues of Blockchain Applications”, Akron Law Review, 52 Akron L. Rev. 161, Lexis

It is still very difficult to utilize blockchain because it is such a specialized field and there are many barriers to entry. Blockchain technology is complex, and understanding it takes considerable research and effort, so many prospective users who would benefit miss out because they do not have time to adequately inform themselves. Until it becomes more widely adopted, its uses are limited due to the large network on which the blockchain depends. 186

One of blockchain's biggest features, its immutability, as seen in the house recording case, depends on user error. A mistaken entry into a blockchain could be irreversible, potentially bringing about massive losses by clerical mistake. However, there are supposed workarounds and adjustments for situations like this, such as forking, which refers to an inconsistent entry onto the blockchain that splits off and forms a new blockchain on the same network. 187 When a fork is created, either through a blockchain software update or change in blockchain's protocol, the network can either ignore the fork and continue adding blocks to the previous chain or adopt the new chain as the official one. 188 This has only happened twice in Bitcoin's history, but presents a concern unique to blockchain.

#### Each industry is siloed

CA 21 – Chambers Associate, The Student's Guide to the Legal Profession, Antitrust in 2021 - The View from White & Case, https://www.chambers-associate.com/practice-areas/antitrust/antitrust-in-2021-the-view-from-white-case

JP: Because antitrust law has developed through case law, rather than being governed by detailed statutory language, it has changed over time, and is still changing. Not only is it important that the laws are interpreted in a way that protects consumers, businesses also have to be able to understand the parameters of the law and have some certainty in order to be able to engage in competition-enhancing conduct. The antitrust laws can result in criminal penalties and/or treble damages resulting in billions of dollars in exposure. Being able to help your clients navigate these laws before (or after) a business practice is challenged is essential to avoid these potentially huge penalties.

CA: What kind of work is involved day-to-day?

JP: Truthfully, the day-to-day work is always changing. As an antitrust lawyer, you can work in litigation, mergers, investigations, counseling, etc. It is truly a dynamic practice. During a litigation, work will vary depending on the phase of the case ranging from legal or factual research, drafting, expert work, witness prep, discovery, trial prep, and more. Litigation for an antitrust litigator has all the excitement and challenges of any other type of litigation, with the added benefit of a specialized knowledge of the antitrust laws and a deep dive into the industry you’re working in. Outside of litigation, clients are always reaching out with really interesting questions about whether they can (or should) engage in certain business practices, potential liability, etc. Digging into different industries and understanding different business models is just as fun and challenging as understanding the intricacies of the legal question at issue.

JC: Antitrust requires you to understand and oftentimes predict what effect certain conduct could have on the market (prices, availability of goods, and so on). Economics plays an important role in making these predictions.

“Digging into different industries and understanding different business models is just as fun and challenging as understanding the intricacies of the legal question at issue.”

HMB: As a litigator, I am generally working on a particular case during any given day, so my work depends on the stage of the case. In my current case, we are in discovery so my day-to-day involves meeting and conferring with plaintiffs, drafting discovery letters, overseeing document review and production, interviewing potential witnesses and working with experts as they develop their expert reports.

CA: What are the highs and lows of the practice?

JP: The legal and business questions in antitrust cases are always interesting, unique, and complex. In my practice, I have been on the side of both plaintiffs and defendants, which really has given me a broad understanding of the laws and the impact of them on both sides of the equation. Regardless of which side you are on, whether you are involved in a litigation, representing a merging party, or have another role, the outcome of an antitrust proceeding can have a huge impact on not just your client, but the way businesses function or practices in an industry take shape. Like many areas of law, antitrust is fast paced and always changing. Clients have unique and important concerns that will be time sensitive and challenging. Antitrust litigation in particular can take years—that can be both a good and bad thing. While you may be anxious to reach a resolution, you should also relish the chance to be involved in many aspects of a sprawling case, sometimes that can mean being involved from the filing of the complaint, through trial, and various appeals.

JC: Each antitrust case is different. Each case usually involves a different industry with its own unique features and practices. Learning about a new industry for the first time is challenging and rewarding. The practice does not get old. One difficult aspect of antitrust practice is that sometimes, it is difficult to provide clients with absolute certainty about a business practice. As lawyers, we crave certainty, but some gray areas of antitrust could go either way in terms of liability.

### Resilient---1AR

#### It’s proven by numerous other ‘shocks.’

Stacey V. Smith & Daniel Drezner 21, Host, The Indicator from Planet Money; Professor, International Politics, Fletcher School of Law and Diplomacy, Tufts University, "How Political Instability Affects the Economy," NPR, 01/07/2021, https://www.npr.org/transcripts/954603834.

STACEY VANEK SMITH, HOST:

This is THE INDICATOR FROM PLANET MONEY. I'm Stacey Vanek Smith. Like most people yesterday, I watched the events unfolding in Washington, D.C., in shock. Watching an angry mob of President Trump's supporters storm the Capitol building was not something I ever expected to see. And frankly, it was a really scary moment. Things felt really unstable, really fragile. And our country just felt very vulnerable and unstable at that moment.

And also, I was confused because the stock market went up. And I know that the stock market isn't the economy. I know. I hear that all the time. And it's true. Still, the stock market is an economic signal. And I wanted to understand I guess more generally, what is the relationship between economic growth and political instability?

So I called up Dan Drezner. He's a professor of international politics at the Fletcher School of Law and Diplomacy at Tufts University. He also writes for The Washington Post. After the break, a conversation with Dan Drezner about economic growth, political instability and the economic indicators that he is watching.

Daniel Drezner is a professor of international politics at Tufts University. He's also a contributor to The Washington Post.

Daniel, thank you for joining us. My first question is, I'd love to know what was going through your head as you were watching all of the events unfold at the Capitol yesterday.

DANIEL DREZNER: When I was watching it, what I kept thinking was the slippery slope this country has been on for the last decade - that while what happened yesterday was an order of magnitude worse - you know, if you think about it, ever since the Tea Party revolt of 2010, the government - the federal government in particular - has been convulsing - you know, occasionally threatening not to raise the debt ceiling, shutting the government down, political polarization in Congress leading to gridlock and frustration and eventually the election of Donald Trump as president. So there are ways in which what happened yesterday - it's the culmination of underlying trends that we've experienced for the last 10, 20, even 30 years.

VANEK SMITH: I know that there have been a lot of studies on the effect of political instability on countries' economies. And generally, not surprisingly, it's not good.

DREZNER: Yeah.

VANEK SMITH: But what is the relationship there between political instability and economic growth, prosperity?

DREZNER: There is no denying the fact that political stability is correlated with economic growth, and political instability is correlated, usually, with economic stagnation. And, you know, it makes some sort of intuitive sense. If you think about it, you know, put yourself in the mindset of an entrepreneur or a CEO or even an individual who's thinking about doing something like buying a house. Any time you are making a large investment, you are taking a risk - right? - particularly if the investment's...

VANEK SMITH: Yeah.

DREZNER: ...Not terribly mobile. And so when you do that, the question you obviously want to ask is, will my property rights be respected? Will I have legal rights? Will national policymakers not do things like shut down the government or, you know, pursue reckless economic policies? And so any time you lose faith in the government's ability to credibly commit to generally robust economic policies, you are going to act in a more risk-averse manner. And now multiply that risk-averse behavior by every firm or every individual household buyer. And you can understand why suddenly, if instability really seems on the rise, you're going to have people hoarding cash rather than actually spending on things that they want to spend in the economy.

VANEK SMITH: So a lot of the U.S. economy's place in the world does really depend on trust. Like, the dollar is kind of - they call it the reserve currency of the world. I mean, dollars are sort of used internationally. Also, you know, we sell a lot of government bonds. Like, that's how we fund a lot of our government, and that requires international investors to sort of trust that it's like a little loan from the government. So, I mean, it does seem like those two things are so dependent on trust and that, you know, our economy really rests on those things. Do you see that being jeopardized or not so much?

DREZNER: No, I don't see that being jeopardized at all in the short term. And you know, if you want evidence for this, you can take a look at the fact that, generally speaking, you know, over the last couple of years, we've seen global financial centers rocked by a lot of geopolitical shocks. Think about what's happening in Hong Kong over the last three or four years. Think about what's happened in London as a result of Brexit.

VANEK SMITH: Yeah.

DREZNER: These haven't necessarily had appreciable impacts on these financial centers. Now, it might over the long term, but at least in the short term, no. And the question becomes, can that trust be restored? And so that, again, goes to the United States. And so in some ways, my concern is not what yesterday's events mean for tomorrow. My concern is what yesterday's events and all of the events that led up to it mean for the next decade or two.

VANEK SMITH: What concerns are those? Like, what do you see as kind of the potential danger playing out over the next 10 years?

DREZNER: One potential danger is that polarization continues to get worse - political polarization continues to get worse, that, you know, 10 years from now, we'll be talking about, well, at least Donald Trump didn't do this, or Donald Trump didn't do that. That's one possibility.

And related to that is the fact that we've had wild swings in terms of control of the government. Both parties have become somewhat more polarized. And what this means is that the change from, let's say, the Obama administration to the Trump administration means some pretty radical policy shifts. We're going to see some reversals come once Joe Biden is inaugurated on January the 20. The ability of the United States to credibly commit to anything in this circumstance is going to be deteriorated. And that, again, is going to lead to more risk aversion.

VANEK SMITH: I mean, that does seem like it would affect things like trade policy for sure. That is a lot of instability happening every four years - like, every, you know - all these policies getting overturned and radically different views on things. What are, like, some possible effects of that?

DREZNER: Well, obviously, it'll affect trade. It'll also probably have a profound effect on investment. Again, the question becomes, do you want to invest in the United States or do you think I'd rather cater to the global market or I'd rather locally source production because I can't count on goods that I'm producing in the United States being exported reliably?

VANEK SMITH: Is there an economic indicator that you're going to be keeping your eye on or that's sort of especially interesting to you at this moment?

DREZNER: Let me think - yeah, foreign students coming to the United States.

VANEK SMITH: Oh, interesting.

DREZNER: So the U.S. has taken for granted for a long period of time things that the U.S. has been uncontested in. Dominance in higher education would be one example of this. If foreign students who previously would have wanted to study at MIT or Caltech suddenly think, I don't want to risk coming to the United States; it's not safe there; I will instead go to Beijing - then suddenly, you are looking at an erosion of one of the long-standing U.S. comparative advantages.

It's worth remembering that, you know, the U.S. has been unpopular in the world before. I mean, you know, we're all old enough to remember what things were like, let's say, in the fall of 2008 when the U.S. was widely blamed for being responsible for the 2008 financial crisis.

VANEK SMITH: Yeah.

DREZNER: When Barack Obama took over, however, generally speaking, approval ratings of the United States in the rest of the world recovered from the Bush years. And you actually saw a surge in - of students who wanted to study in the United States. And the interesting question, you know, once Joe Biden is inaugurated is, do you see a replay of what happened in 2009 or does the rest of the world look at this as an irreparable breach?

#### Resulted in elevated risk tolerance---AND case outweighs.

Greg Ip 17, Chief Economics Commentator, The Wall Street Journal, "Comfortably Numb: Why the U.S. Economy Shrugs Off Politics," Wall Street Journal, 09/06/2017, ProQuest.

Just how much political risk can the U.S. economy tolerate? Quite a bit, it seems.

The federal government could shut down in a few weeks for lack of a budget. It could default on its obligations if the debt ceiling isn't raised. Trade treaties with Mexico, Canada and Korea may be torn up.

North Korea has tested an apparent H-bomb and threatened to use it. And overseeing these challenges is an unpredictable and often-divisive president with associates embroiled in an investigation over ties to Russia .

Yet economic growth has remained largely unperturbed and, judging by the latest gross domestic product numbers, may have even accelerated ahead of two major hurricanes. Stock prices remain near record highs.

The reason for the dichotomy is that the impact of political risk depends on the risk. Government shutdowns, protectionism, presidential scandals, even conventional wars have happened before and are thus knowable and sometimes quantifiable to businesses, consumers and investors.

Federal default or nuclear war fall in the category of unprecedented and unthinkable. Faced with such risks, the usual reaction is to assume they won't happen. Yet that assumption becomes a risk in itself: It alleviates the pressure to prepare for either and multiplies the damage if they do occur.

The outbreak of the global financial crisis a decade ago ushered in an era of elevated political risk, as illustrated by an index compiled by the academic economists Scott Baker, Nicholas Bloom and Steven Davis that tracks mentions of economic policy uncertainty in newspapers. The U.S. mortgage meltdown was soon followed by the European sovereign debt crisis, a showdown over the U.S. debt ceiling in 2011, Britain's vote to leave the European Union last year and the election of Donald Trump last fall.

Because political risk has been a constant, it has lost some of its shock value. Investors have in effect built that risk into their assumptions; their demand for safety is one reason government bond yields around the world are so low.

Since 2009, hedge funds as a group have positioned themselves for another meltdown like the subprime bust, says Jason Thomas, head of economic research at Carlyle Group, a private-equity manager. But "the same psychological factors that make 'next subprime' investment strategies seem more appealing," he says, have also led businesses to favor cash retention or share buybacks over capital expenditure, and policy makers to regulate more. That depresses growth but also makes the economy less vulnerable to sudden shifts in sentiment.

As a result, hedge fund performance has suffered from strategies designed to profit from a meltdown that has yet to happen. With bearish psychology already so prevalent, actual selloffs have been brief and the VIX, the market's so-called "fear gauge," which is based on derivatives prices, has been subdued.

Those who watch politics and policy for a living--a sizable contingent on Wall Street and in Washington--tend to overestimate how many ordinary people do the same, and thus how much their behavior will change because of politics. In market economies, the natural rhythm of the business cycle easily drowns out politics. Big policy actions such as rising trade barriers or reduced immigration do take their toll, as the latest British data suggest, but slowly, not in a spasm of panic selling and recession.

What would overwhelm these coping mechanisms? Something previously unfathomable, like nuclear war.

No atomic weapons have been used since the U.S. dropped them on Hiroshima and Nagasaki. The public assumes global leaders won't let it happen again. As Capital Economics notes in a recent report, the market barely sold off during the Cuban missile crisis in 1962, the closest the world has come to nuclear war since 1945.

A nuclear attack on a U.S. ally, city or electrical grid via electromagnetic pulse is so alien to a business's frame of reference that it can't be planned for. On earnings calls with investors in the past three quarters, big companies have mentioned tax policy 1,024 times, immigration issues 40 times, and North Korea just 14 times, according to Hamilton Place Strategies.