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## Prices Adv

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## Innovation Adv

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## T Private Sector

#### Counterinterp – “Private sector” is anything that isn’t the government

Law Insider N.D.

“Private sector definition,” *Law Insider*, <https://www.lawinsider.com/dictionary/private-sector>.

Private sector means not of a Federal, State or Local government owned nor controlled enterprise.

#### “The” can include specifics

Random House N.D.

“The,” Unabridged Dictionary, <https://www.dictionary.com/browse/the>.

1. (used, especially before a noun, with a specifying or particularizing effect, as opposed to the indefinite or generalizing force of the indefinite article a or an):

#### ‘By’ only requires anticompetitive practices resulting from private sector action.

Michigan Court of Appeals 10 (SAWYER, J. Opinion in DEQ. v. Worth Twp., 808 N.W.2d 260, 289 Mich. App. 414 (Ct. App. 2010). Google scholar caselaw. Date accessed 7/23/21).

Second, we look to the meaning of the phrase "by the municipality." This phrase is key because it answers plaintiffs' contention that MCL 324.3109(2) imposes responsibility for a discharge on a municipality without regard to the source of the discharge. That is, plaintiffs argue that any discharge of raw sewage within a municipality constitutes prima facie evidence of a violation by the municipality even if the municipality is not the source of the discharge. We disagree. The word "by" has many meanings. For its meaning as a nonlegal term, we look to a layman's dictionary rather than a legal one. Horace v. City of Pontiac, 456 Mich. 744, 756, 575 N.W.2d 762 (1998). We find these definitions from the Random House Webster's College Dictionary (1997) to be particularly helpful: "10. through the agency of" and "12. as a result or on the basis of[.]" Thus, MCL 324.3109(2) imposes responsibility on the municipality not when the violation merely occurs within the boundaries 264\*264 of the municipality, but when the violation occurs "through the agency of" the municipality or "as a result" of the municipality, that is to say, when it is the actions of the municipality that lead to the discharge.

## Adv CP

#### Picking winners fails – government lacks the incentives and knowledge to pick the best firms

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Adam Thierer, August 18 2021, “Government Planning and Spending Won’t Replicate Silicon Valley,” Discourse, https://www.discoursemagazine.com/economics/2021/08/18/government-planning-and-spending-wont-replicate-silicon-valley/

Unfortunately, the “if you build it, they will come” mentality surrounding tech clusters and regional innovation hubs doesn’t take into account many economic, political, cultural and geographic challenges. Indeed, the history of previous efforts proves that these things cannot simply be willed into existence through top-down industrial policies, big bureaucracies and a lot of new spending programs. Clusters tend to grow more organically, and efforts by the government to force them are unlikely to meet with any more success than past experiments.

Wishful Thinking About Economic Development Subsidies

“Economic theory offers little reason to think that targeted economic development subsidies benefit the broader communities that ultimately pay for them,” concluded a recent Mercatus Center study on “[The Economics of a Targeted Economic Development Subsidy](https://www.mercatus.org/publications/government-spending/economics-targeted-economic-development-subsidy).” The authors highlighted the extensive economic literature that finds that “the net effect of targeted economic development subsidies is likely to be negative” because “the taxes funding the subsidies will discourage more economic activity than will be encouraged by the subsidies themselves.”

That points to the first problem with governments trying to pick winners: There is no free lunch. Economic development and industrial policy efforts always sound great in theory, but in the end they rely on government-granted privileges—discriminatory tax or regulatory relief, cash subsidies, loans and loan guarantees, in-kind donations and the provision of other valuable goods and services. The costs of these targeted privileges are passed along to those firms and economic sectors without the political clout to get the favors, or just borne by taxpayers more generally.

The second problem with policymakers trying to pick winners is that they’re just not very good at it. Forecasting future market trends and the evolution of technology has always been notoriously difficult, even in the private sector. Lacking a profit motive and business acumen, governments have a much worse track record than investors, regularly picking more losers than winners. This problem has grown more acute today due to “[the pacing problem](https://www.mercatus.org/bridge/commentary/pacing-problem-and-future-technology-regulation),” which refers to the inability of government policies and programs to keep up with the ever-quickening pace of modern technological innovation.

These realities have not stopped policymakers from repeatedly trying to use both direct and indirect subsidies to attract high-tech sectors and talent to specific destinations. But there is no precise recipe for growing tech clusters. And as economists [William R. Kerr](https://www.hbs.edu/competitiveness/faculty/Pages/faculty-profile-details.aspx?profile=wkerr) and [Frédéric Robert-Nicoud](https://www.unige.ch/gsem/en/research/faculty/all/frederic-robert-nicoud/) [note](https://www.aeaweb.org/articles?id=10.1257/jep.34.3.50), “developing even a semi-formal definition is tricky.” Typically, however, a tech cluster includes “an important overall scale of local activity, complemented by spatial density and linkages amongst local firms.”

This is not easily replicated. Indeed, in the U.S. a huge amount of the nation’s high-tech startup activity and venture capital funding is concentrated only in Silicon Valley and eight other big-city areas: New York City, Boston, Los Angeles, Seattle, Washington, D.C., San Diego, Austin and Chicago. Of course, large cities have long possessed many advantages for attracting skilled labor and investors, and they often tend to have a high concentration of universities and research labs, making it far easier for tech clusters to develop in these large urban centers than in rural areas. Fine. But much of the nation is dotted with other large cities. Why can’t they become thriving tech clusters?

This kind of thinking is driving the latest push to create the next great innovation hub. “With federal support, the U.S. can recreate Silicon Valley success nationwide,” [says Steve Case](https://thehill.com/opinion/technology/550262-with-federal-support-the-us-can-recreate-silicon-valley-success-nationwide?rl=1), former head of America Online. [Others argue](https://www.brookings.edu/events/leveraging-regional-tech-hubs-to-advance-racial-equity/) regional tech hubs can help advance economic inclusion and racial equity.

#### Iterative innovation is key – money alone doesn’t solve because innovation happens in interaction between companies

Kotlikoff 08 – Professor of Economics Boston University

Laurence J. Kotlikoff, “Stimulating Innovation in the Biologics Industry: A Balanced Approach to Marketing Exclusivity,” September 2008, http://people.bu.edu/kotlikof/New%20Kotlikoff%20Web%20Page/Kotlikoff\_Innovation\_in\_Biologics21.pdf

Limiting Monopoly Protection to Stimulate Innovation

The importance of successive rounds of innovation — of each innovation building on, but also undermining the monopoly position of the prior round — was dubbed creative destruction by the father of growth theory, Joseph Schumpeter. According to Schumpeter, innovation is the engine of growth, and it’s not pretty. Entrepreneurs must be able to compete and destroy or they will not create. In Schumpeter’s words, “Economic progress, in capitalist society, means turmoil. [What counts is] competition from the new commodity, the new technology, the new source of supply, the new type of organization... competition which... strikes not at the margins of the profits and the outputs of the existing firms, but at their foundations and their very lives.” Paul Romer, today’s leading theorist of economic growth, emphasizes the self-propelled nature of growth — that growth feeds upon itself. “We consistently fail to grasp how many ideas remain to be discovered. Possibilities do not add up. They multiply.”45 Sandwiched between Schumpeter and Romer is the past century’s third great student of economic growth, Nobel laureate Robert Solow. Solow developed growth accounting and showed that innovation (better technology) is a major source of U.S. economic growth. In fact, each innovation is part of a chain. Today’s innovation cannot proceed if yesterday’s is not accessible. And tomorrow’s innovation must wait until today’s innovation is available for use. Moreover, if the current length of monopoly protection suffices to incentivize today’s innovation, extending the length of protection will do nothing to increase current innovation. Instead, it will simply delay future innovation with the economy, over time, falling further and further behind with respect to the level of technology it would otherwise have available. Economists have modeled this process, conceptualizing innovation in a number of different ways. Andrew Horowitz and Edwin Lia wrote a classic paper in 1996, for example, in which they view innovation as moving up a product quality ladder. Higher rungs on the ladder entail better technology and higher quality products. The innovator in their model, which need not be the same person or company through time, can be viewed as holding the top position on the ladder with generics moving up from below. The closer the generics get, the more competition the current innovator faces. This gives the current innovator an incentive to move to yet a higher position on the ladder. Moving up the ladder is innovation, and the more rungs the innovator (or replacement innovator) climbs over a given period of time, the higher the rate of innovation. Patent length in the model corresponds to the amount of time the government keeps the generics from using the latest technology — moving up the ladder to where the prior innovators have been. Once the current patent expires, the generic can move up. But when he does, he finds that the top-rung innovator has innovated to an even higher rung, the position of which is temporarily protected by a new patent. This is not a model of evergreening. Each time the top-rung innovator company innovates, it represents a true improvement in technology — one that comes at a real cost to the company. But it’s only the threat of competition that keeps the top-rung innovator (the near monopolist) innovating. And setting the patent length correctly is critical. As the authors point out, “Patent length either too short, or too long, will weaken innovative incentives.” In particular, patent length that’s too long will lead to more innovation when innovation occurs (the top-rung company will move up more rungs when it realizes it has to innovate to stay ahead because its patent is expiring), but to less frequent innovation. In the extreme, making the patent indefinite kills off innovation entirely; in this case, the top-rung company faces no competitive pressure and would compete only against itself by incurring the cost of inventing a better product. Another classic paper on patent policy is Nancy Gallini’s (1992) Rand Journal article.48 Gallini’s model lets competitors invent around incumbents, but at a cost. If patent length is set too long, competitors realize that they’ll not be able to use existing knowledge in a timely manner and that the only way they can compete is to come up with their own invention. Under these circumstances, this makes private sense, but it also makes social nonsense for the same reason that it makes no sense to re-invent the wheel. Knowledge that’s been acquired at a cost and that can be conveyed at zero cost is knowledge that should be used. Gallini’s paper, in its own way, gets at the cost of patent races alluded to above. Invention that can be monopolized even for a finite period of time represents a prize worth fighting for. But if only one party can win or, in Gallini’s case, if multiple parties can win, but not fully, there can be too much effort put into invention. Again, what’s privately optimal can be socially undesirable.

## K

#### Perm do both – plan lowers drug prices and stops ppl from dying bc they can’t afford medicine – key to actualize the alt’s politics

Feldman 8/27 – Distinguished Professor of Law Chair & Director of the Center for Innovation, UC Hastings Law

Robin Feldman, Arthur J. Goldberg Distinguished Professor of Law, Albert Abramson ’54 Distinguished Professor of Law Chair, and Director of the Center for Innovation, The Price Tag of 'Pay-for-Delay', UC Hastings Research Paper Forthcoming, 27 Aug 2021, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3846484

The skyrocketing price of prescription medication continues to plague the pharmaceutical industry. For example, an analysis of one million Medicare patients between 2010 and 2017 found that the average dosage-unit price of brand-name drugs increased by 313 percent even after accounting for rebates.2 [FN 2] 2 Robin Feldman, The Devil in the Tiers, J.L. & BIOSCI. 1, 19 (2021). The RAND Corporation found in 2021 that the price of brand-name prescription drugs in the U.S. is 256 percent of the prices in thirty-two OECD countries combined, ranging from 170 percent of prices in Mexico to 779 percent of prices in Turkey (ANDREW W. MULCAHY ET AL., RAND CORP., INTERNATIONAL PRESCRIPTION DRUG PRICE COMPARISONS: CURRENT EMPIRICAL ESTIMATES AND COMPARISONS WITH PREVIOUS STUDIES 26 (2021), <https://www.rand.org/content/dam/rand/pubs/research_reports/RR2900/RR2956/RAND_RR2956.pdf>). [End FN] Similarly, one in four Americans have difficulty affording their medications, and three in ten say costs have prohibited them from taking their medications as prescribed.3 With rising out-of-pocket costs and patients dangerously rationing medication, these prices are causing real pain for American patients. Diabetic patients, for example, paid nearly $6000 a year out of pocket for insulin in 2016, and patients with arthritis saw the price of Humira rise to $1552 a month in 2019.4 As difficult as the burdens are for any patient, the burden of paying high prices lands particularly hard on lower-income groups, threatening access to life-saving treatments and creating further gaps in equity across society.

#### Plan’s nuanced use of competition policy is good – thinking that using competition policy to incentivize drug development is the equivalent of mass deregulation is totalizing – both state planning and complete decentralization are disasters

Coniglio, antitrust attorney in the Washington, DC office of Sidley Austin LLP, ‘20

(Joseph V., “Economizing the Totalitarian Temptation: A Risk-Averse Liberal Realism for Political Economy and Competition Policy in a Post-Neoliberal Society,” 59 Santa Clara L. Rev. 703)

The implication of the foregoing is that the most pressing task for competition policymakers may not involve a rethinking of first principles. The principles of neoliberal competition policy may have ultimately been proven justified by an unprecedented period of economic growth, technological progress and reductions in poverty, and should presumably remain operative as long as they remain the best framework for bringing about these ends. Neither, as we have suggested, must the capitalist entrepreneur be lost in the process. The totalitarian temptation to submit to general state control of the economy-whether it be in the form of communism from below or fascism from above should be resisted so as to preserve and build upon the great prosperity Western Civilization has managed to achieve.

This statement will no doubt be highly unsatisfactory to many critics of neoliberalism who seek more fundamental and revolutionary changes. Surely, they suggest, there must be some principled basis for critiquing the neoliberal status quo with which so many are frustrated. Indeed, there very well may be, and none of the arguments in this article should be understood to the contrary. The goal of this article has been limited to a tailored defense of neoliberal principles only as they relate to competition policy, broadly understood. It does not suggest that neoliberal monetary, trade, and fiscal policies are also sound-let alone a neoliberal social order, where all the core institutions within society are organized according to the neoliberal principles of wealthmaximization, empiricism, and the rest.129 This is to say that even if neoliberalism is a sound theory as applied to the area of competition policy, neoliberal monetary policy, for example, may be problematic and a just target for contemporary critics. Similarly, claiming that competition policy should be enforced using a consumer welfare standard does not mean that all the organs of law and civil society should be oriented to maximize wealth or consumer welfare, even if this economic inquiry is nonetheless informative. 30 It is well known that several prominent neoliberals have expanded the neoliberal policy apparatus beyond the regulation of market capitalism with which antitrust is concerned to domains typically understood to be beyond a purely utilitarian purview.' 3 ' However, whatever the merits of these broader neoliberal policy programs, the competition policy baby, so to speak, should not be thrown out with the bathwater.

Consider the charge that neoliberal policies have increased wealth inequality in the United States. Some commentators attempt to link this increased inequality with a decline in competition'3 2 and, by implication, consumer welfare competition policy. Notwithstanding the interest such theories appeared to have garnered from highly distinguished economists and policymakers, such as Nobel Laureate Joe Stiglitz,133 one might alternatively consider whether increasing wealth inequality and the resultant social strife are far more a result of policies in other areas, such as monetary policy. 134 At the same time as Chicago School antitrust policy took root, the American economy began to undergo sustained expansions in the money supply and reductions in interest rates that, at least in theory, disproportionately reward the owners of financial assets, who are more likely to be wealthy. 135

#### Only market incentives produce truly innovative technology – state planning can give you a lab but it cannot fiat the formula for new biologics

Janeway, board of directors of the U.S. Social Science Research Council and co-founder of the Institute for New Economic Thinking, ‘12

(William, Doing Capitalism in the Innovation Economy, pg. 273-277)

All of the stages of development are dependent to some degree on speculative forays into the unknown. None lends itself to optimal management in accord with a strict accounting of expected returns relative to costs incurred, whether conducted by a central planner or an established, profit-making enterprise. When scientific advance was funded by the profits of the great corporations through the first half of the twentieth century, the costs of the central research labs could no more be rationalized by the calculus of prospective financial returns than could the costs of the National Science Foundation (NSF) or the Defense Advanced Research Projects Agency (DARPA) or the National Institutes of Health (NIH) – which is why they were all required to shift resources toward explicitly applied research and development when profits came under pressure. Thus, the prime and critical constituent elements of the Innovation Economy are sources of funding decoupled from concern for economic return. This is clearly so with respect to the unfettered pursuit of scientific curiosity, but support for such research may be fully available from the state only during transient moments of national self-confidence when economic competition seems least threatening. Perversely, investment in scientific research is likely to be challenged as the nation’s competitive position weakens. So the Haldane principle, invoked in Britain to defend the autonomy of scientific research from political pressures, dates back to the First World War, when the sun still did not set on the British Empire. It was radically revised by the Rothschild Report in post-Empire 1971 to draw a bright line between pure and applied research and to subject the latter to the test of a customer–contractor relationship.3 In the United States, Vannevar Bush’s vision of public investment in science transcended near-term considerations of return, economic or political. Two generations later, the NIH and NSF are collaborating under the tortuous acronym STAR METRICS – “Science and Technology for America’s Reinvestment: Measuring the Effects of Research on Innovation, Competitiveness and Science” – in response to “increasing pressure to document the results of … research investments in a scientific manner and to quantify how much of the work is linked to innovation.”4 The attempt to manage scientific research in narrow pursuit of “value for money” can be expected to reduce its potential for creative exploration of the unknown. As I learned from my engagement with computing, the state has directly and indirectly accelerated construction of technology platforms to support the speculative exploits of entrepreneurs and the capitalists who finance them. Financial bubbles, in which returns are decoupled from the economic fundamentals, are the complementary engine of Schumpeterian waste. There are some examples of efficient deployment of new technological infrastructure: the construction of the French railroad system under state direction *was a model* of engineering efficiency and proceeded pari passu with the railroad systems in Britain and the United States, but without their duplicative waste. But, regardless of how potentially revolutionary networks have been planned, their financing has exploited the essential and inevitable herding behavior of investors. And, for the final phase of the Innovation Economy, there is no substitute for the speculative wastefulness of financial markets and the proliferation of hosts of hopeful commercial monsters funded thereby to explore the new economic space. When the great technology corporations were still funding basic research in their central labs, their monopoly positions in the markets they served inhibited their ability to exploit the technologies derived therefrom. Three times I directly observed signal examples of such failure. During the 1980s, I witnessed repeated instances of “fumbling the future” at Xerox when none of the innovations delivered by PARC could measure up to the profits of the entrenched, patent-protected copier business.5 Like all investors in the birth of client–server computing, I was an indirect beneficiary of AT&T’s failure to capitalize on the extraordinary information technologies created within its Unix Systems Laboratory. And at BEA, I was both the direct beneficiary of AT&T’s invention of Tuxedo and, in equal measure, of IBM’s inability to sacrifice the profits from its proprietary products to compete directly in the new world of open and distributed computing. Joseph Schumpeter expressed the view that large firms have an inherent advantage in innovation relative to smaller enterprises.6 But, as Josh Lerner summarizes the experience of the biotech and internet revolutions: “The enabling technologies were developed with government funds at academic institutions and research laboratories. It was the small entrants … who first seized upon the commercial opportunities.”7 In defiance of Schumpeter’s expectation, economic innovation has not been effectively bureaucratized by the great corporations. Rather, it tends to be delivered by new companies. But funding those new companies depends on access to financiers who have access to financial markets prone to speculative excess. This is the lesson both of my professional life as a practitioner and of my research into the sources of venture capital returns. And it is a lesson drawn not only from the most recent iteration of the Innovation Economy or from the long-term development of the British and American economies. Even in the bank-based industrial economies of Germany and Japan, the stock exchange played a critical role in funding aggressive investment in frontier technologies during their initial high-growth decades of the late nineteenth and early twentieth centuries.8 The vast expansion of the German and Japanese banking systems took place to finance post-Second World War recovery, precisely when innovation was a distraction from the defined task of literally reconstructing the physical assets of the economy. The most recent new economy – the digital economy in whose development I have passed my professional career – was built through the combined forces of state funding of research and speculative financing of the companies created to transform the fruits of research into commercial goods and services. But the discrediting of LBJ’s Great Society in the context of Vietnam, followed by the stagflation of the 1970s, opened the door to the return of market fundamentalism as a constraint on state initiatives.

#### Being pro-free-market doesn’t tell you what the purpose of markets is – we can code the market to maximize social welfare, but central planning is computationally impossible

Posner and Weyl 18 – Eric A. Posner is Kirkland and Ellis Distinguished Service Professor of Law and Arthur and Esther Kane Research Chair at the University of Chicago. E. Glen Weyl is an economist and researcher at Microsoft Research New England.

Eric A. Posner and E. Glen Weyl, “Epilogue: After Markets?” *Radical Markets: Uprooting Capitalism and Democracy for a Just Society*, Princeton University Press 2018, Epub (email [arg5180@gmail.com](mailto:arg5180@gmail.com) for relevant text).

Markets as Miracles

As we saw in chapter 1, many economists who were committed to the market economy also considered themselves “socialists.” Yet in the early twentieth century, socialism became identified with central planning, thanks to the role of Marxism and the French Revolution in inspiring and justifying the economic policies of the Soviet Union. Central planning also received a boost from World War I, where national control of the economy for the purpose of war production was more successful than advocates of laissez-faire could ever have imagined. This led to a heated debate about whether central planning should be used in peacetime as well.

In the popular imagination, central planning could not succeed because it provided individuals with no incentives to work. People needed the prospect of riches, or at least wages, to get them out of bed in the morning. Yet incentives were quite strong in the Soviet Union, stronger, in many ways, than they are in capitalist countries. While there was less chance under Communism to grow rich, any prisoner of the Gulag knew the fate of those who “malingered.”

Another popular argument against central planning was advanced by Nobel Laureate Friedrich Hayek in 1945. Hayek argued that no central planner could obtain information about people’s tastes and productivity necessary to allocate resources efficiently.1 The genius of the market was the way that the price system could, in disaggregated fashion, collect this information from everyone and supply it to those who needed to know it, without the involvement of a government planning board.

A related version of this argument, less well-known than Hayek’s but actually more compelling, was made a few decades earlier. The brilliant economist Ludwig von Mises argued that the fundamental problem facing socialism was not incentives or knowledge in the abstract but communication and computation.2 To see what Mises meant, consider an illustrative parable proposed by Leonard Read in his 1958 essay, “I, Pencil.” 3

Read tells the “life story” of a pencil. Such a simple thing, one would at first think. And yet as you begin to reflect, you realize the enormously complex layers of thought and planning it would require to make a pencil from scratch. The wood must be chopped, cut, shaped, polished, and honed. The graphite must be mined, chiseled, and shaped. The ferrule—the collar that connects the wood shaft and the eraser—is an alloy of dozens of metals, each of which must be mined, melted, combined, and reformed. And so forth.

Yet what is most remarkable about the pencil is not its complexity but the complete lack of understanding that anyone involved in the manufacture of the eventual pencil has about any of these steps in the process. The lumberjack knows only that there is a market for his wood and some price that induces her to buy the needed tools, cut down trees, and sell lumber down the line of production. The lumberjack may never even know that the wood is used for a pencil. The pencil factory owner knows only where to purchase the needed intermediate materials and how to run a line assembling them. The knowledge and planning of the pencil’s creation emerge organically from the process of market relations.

Now suppose that we were to try to replicate the market relationships with a central planning board. The board would determine how much wood to chop and when, the number of workers to employ at each stage of production, the correct places and times to produce, ship, and build. Yet, to do this effectively the board would have to understand a great many things. It would have to learn from each of these specialized producers the unique knowledge of her domain of expertise that allows her to earn a living—for example, whether the lumber would have a more valuable use elsewhere in the economy (to build houses or ships or children’s toys) than as an input for pencils. Absorbing all this information and constantly receiving and processing the necessary updates to keep abreast of evolving conditions in each of these steps of the process, would overwhelm the capacity of even the most skilled managers.

And even if the board somehow had an unlimited capacity to absorb this information, it would still have the unmanageable problem of trying to act on this sea of data. Prices, supply and demand, and production relations in markets arise through a complex interplay of individuals each helping to optimize a tiny part of a broad social process. If, instead, a single board had to plan this entire dance, it would force a small number of individuals to contemplate an endless sequence of choices and plans. Such elaborate calculations are beyond the capacity of even the most brilliant group of engineers.

Mises wrote decades before the rise of the fields of computer science and information theory and lacked any way to formalize these intuitive ideas. Many of Mises’s arguments were dismissed by mainstream economists, whose increasingly narrow mathematical approach to the field Mises disdained. Mises’s critics, including Oskar Lange, Fred Taylor, and Abba Lerner, argued that the market mechanism was but one of many ways (and far from the most efficient way) to organize an economy. They viewed the economy purely mathematically, rather than computationally, and saw no difficulty in principle with solving a (very large) system of equations relating the supply and demand of various goods, resources, and services.

In a simplified picture of the economy, ordinary people perform dual functions as producers (workers, suppliers of capital, etc.) and consumers. As consumers, people have preferences regarding different goods and services. Some people like chocolate, others like vanilla. As producers, they have different talents and capacities. Some people are good at doing math, others at mollifying angry customers. In principle, all we need to do is figure out people’s preferences and their talents, and assign jobs to people who do them best, while distributing the value created by production in the form of goods and services that people really want. Rewards and penalties need to be determined to give people incentives to reveal their preferences and talents, and to ensure that they actually do what they are supposed to do. All of this can be represented mathematically and solved. That’s why socialist economists viewed the economy as a math problem the solution of which only required a computer.

Yet the later development of the theory of computational and communication complexity vindicated Mises’s insights. What computational scientists later realized is that even if managing the economy were “merely” a problem of solving a large system of equations, finding such solutions is far from the easy task that socialist economists believed. In an incisive computational analysis of central planning, statistician and computer scientist Cosma Shalizi illustrates how utterly impossible “solving” a modern economy would be for a central planning board. As Shalizi notes in his essay, “In the Soviet Union, Optimization Problem Solves You,” the computer power it takes to solve an economic allocation problem increases more than proportionately in the number of commodities in the economy.4 In practical terms, this means that in any large economy, central planning by a single computer is impossible.

To make these abstract mathematical relationships concrete, Shalizi considers an estimate by Soviet planners that, at the height of Soviet economic power in the 1950s, there were about 12 million commodities tracked in Soviet economic plans. To make matters worse, this figure does not even account for the fact that a ripe banana in Moscow is not the same as a ripe banana in Leningrad, and moving it from one place to the other must also be part of the plan. But even were there “merely” 12 million commodities, the most efficient known algorithms for optimization, running on the most efficient computers available today, would take roughly a thousand years to solve such a problem exactly once. It can even be proven that a modern computer could not achieve even a reasonably “approximate” solution—and, of course, today there are far more goods, services, transport choices, and other factors that would go into the problem than there were in the Soviet Union in the 1950s. Yet somehow the market miraculously cuts through this computational nightmare.

Markets as Parallel Processors

But all of this raises a question. If the problem is so hard to solve, how is it possible for the market to solve it? Consider Lange’s quote from our epigraph.5 The market is just a set of rules enforced by the government—not much different from a computer algorithm, although a very complex one. It’s true that no single person invented the market. Yet the rules of the market are well understood, and economists are constantly telling people to implement them. Imagine that a new country is created, and its leaders ask a western economist how best to create an economy. The economist will tell them how to set up a market—the rules of contract and property law, for example. (Indeed, economists have been running around the halls of government of developing countries and the floors of start-ups for decades doing just this.) Aren’t the economists just supplying a kind of computer program to the leaders, who by implementing it are engaging in a style of centralized planning?

To understand how the market solves the “very large system of equations,” you need to know the key ideas of distributed computing and parallel processing. In these systems, complicated calculations that no one computer could perform are divided into small parts that can be performed in parallel by a large number of computers distributed across different geographic locations. Distributed computing and parallel processing are best known for their role in the development of “cloud computing,” but their greatest application has gone unnoticed: the market economy itself.

While the human brain is wired differently from a computer, computational scientists estimate that a single human mind has a computational capacity roughly ten times greater than the most powerful single supercomputer at the time of this writing.6 The combined capacity of all human minds is therefore tens of billions of times greater than this most powerful present-day computer. The “market” is then in some sense a giant computer composed of these smaller but still very powerful computers. If it allocates resources efficiently, it does so by harnessing and combining their separate capacities.

Adopting this perspective, we must ask how the market is “programmed” to achieve this outcome. The economy consists of a variety of resources and human capacities at a range of locations, along with a system for transmitting data about these resources among individual human beings. A standard approach in parallel processing is to take information local to one location in, say, a picture or puzzle and assign this to one processor, integrating these inputs on still other processors in a hierarchical fashion. Now apply this image to the economy. In every place, we take one of the computers (humans) available to us and assign it to collect information about that location’s needs and resources and report some parsimonious “compressed” summary of all that data to other computers. For example, there might be a hierarchical arrangement of computers, with those responsible for particular locations on the ground reporting to a higher “layer” that integrates local areas and then upward from there.

Consider the following example. A person works on a farm and is in charge of ensuring that the farm is productive and that her family is happy. This person sends information about the farm and her family, not in its full richness and complexity, but in broad strokes, to district managers. One manager specializes in understanding the resources that farms need to operate—seeds, fertilizer— while another understands the resources that people living on farms need in order to be happy, including food and clothing. These managers would then aggregate these data and convey them to the next layer, perhaps a national wheat distributor or a regional supplier of products for use on farms. At every level of this chain, some information would need to be lost for the parallel processing to remain parallel and tractable: the farm manager could not detail every way in which a slightly better paved road would help in conveying goods to market or how slightly cleaner water would protect her crops. But at least she could report the largest and most important needs and hope that the loss of information only slightly reduces the efficiency of the resulting solution.

This arrangement has a flavor of central planning but also resembles a market economy. People specialize in different parts of the production chain and operate under limited information, yet are able to coordinate their behavior because the information takes a certain form. While people are experts on local conditions, they know little about economic conditions elsewhere. They know that grain prices are high and tractor prices are low, but not why this is the case. When they buy a tractor or sell grain, they don’t tell the vendor or purchaser their life story, all the conditions on their farm, and so forth. They just place an order or offer so much grain at the going price.

This “price system” thus greatly simplifies communication between different parts of the economy. In fact, economists have shown that prices are the minimum information that a farmer needs to plan her operations effectively. So long as every important way that the farm could benefit or draw down resources from the outside world has a price attached to it, this is all the information the farmer needs to make economic decisions. Any greater information would be a waste, from a purely economic efficiency perspective, though it might be interesting from time to time to develop personal relationships. Conversely, if these prices were not available, there would be no way for a farmer to know whether it pays to use new tractors or rely instead on more labor, nor would she know how many seeds to plant for next season. The farmer without such prices could easily produce too little or waste resources on a tractor that could be better used for more labor, seed, or even consumption.

In this sense, prices are the “minimum” information necessary for rational economic decision-making.7 No other system of distributed computing can be equally productive and yet require less communication.

Markets elegantly exploit distributed human computational capacity. In doing so they allocate resources in ways that no present computer could match. Von Mises was right that central planning by a group of experts cannot replace the market system. But his argument was mistakenly taken as implying that the market is “natural” rather than a human-created program for managing economic resources. In fact, there is nothing natural about market institutions. Human beings create markets—in their capacity as judges, legislators, administrators, and even private business people who frequently set up organizations that create and manage markets.

Markets are powerful computers, but whether they produce the greatest good or not depends on how they are programmed. We advocate “Radical Markets” because we believe that in the present stage of technological and economic development, when cooperation has grown too large to be managed by moral economies, the market is the appropriate computer to achieve the greatest good for the greatest number. If we see it as such, we can fix the bugs in the market’s code and enable it to generate more wealth that is distributed more fairly.

By sharpening our understanding of the role and value of markets, the computational analogy clarifies our claim that the solutions we propose are based on extending the reach of markets. The COST on wealth radicalizes markets as it puts greater responsibility on individuals to articulate their values and gives them greater ability to claim things they value highly. QV does the same in the political sphere. Our ideas on migration give individuals more scope for determining the best path for where they live and work. Our proposals on antitrust and data valuation break up centralized power and place greater responsibility on individuals and small firms to compete, innovate, and make rational economic choices to allow for the distributed computation of optimal economic allocations. But all these proposals raise the question: if the market is just a computer program that harnesses the power of individual human intellects, will it still be necessary as computer power increases?

#### The “imminent collapse unless alt” narrative is wrong—enough time to address existential risk without discarding capitalism

Wade, Professor of Global Political Economy at the Department of International Development, London School of Economics, ‘21

(Robert H., “What is the Harm in Forecasting Catastrophe due to Man-Made Global Warming?” July 22, <https://www.globalpolicyjournal.com/blog/22/07/2021/what-harm-forecasting-catastrophe-due-man-made-global-warming>)

When parts of western Germany, Belgium and Netherlands have just experienced catastrophic floods and the Pacific northwest has recently broken heat records, it is counter-intuitive to challenge the prevailing pessimism about global warming – captured for example by the Financial Times columnist Martin Wolf who says, “Given this signal failure [to vaccinate against Covid in line with the global interest], it is impossible to imagine we will do much more than fiddle while the planet burns.”

The danger of this mindset is that it encourages inflation of the threat-language far beyond the credible science, so that the future cannot be discussed except in terms of a choice between “disaster”, “catastrophe”, “planetary extinction” on the one hand or impossibly fast reforms to how humanity lives, works and governs, on the other.

Every sensible person agrees that (1) global warming has been happening over most of the second half of the twentieth century and on into the twenty first, and (2) most of it to date is due to greenhouse gas emissions. What could be called the “mainstream view” of climate change goes much further, onto uncertain epistemological ground: (3) man-made global warming is the main cause of all kinds of disagreeable events – including extreme weather, rising seas, and much more; (4) humanity faces impending catastrophe unless we undertake far-reaching changes to how we live, work and govern in order to cut CO2 emissions and dematerialize economies (“net zero by 2050”).

This essay identifies some of the weaknesses in the evidence presented in support of the mainstream view, including weaknesses in the claim that 97% of climate scientists believe in anthropogenic global warming, in the claim that global temperatures will rise much faster than they have been rising, and in the (implicit) claim that the horrifying worst-case scenario presented by the Intergovernmental Panel on Climate Change represents the likely scenario to 2100 in the absence of radical actions starting now. It identifies the incentive mechanisms that produce the exaggerations and sustain wide credence in them. At the end it considers the question: does highlighting the doomsday exaggerations serve to reduce the political and public pressures for necessary ameliorative action, in a world where powerful fossil lobbies seek to block or delay such action for reasons independent of “evidence”? To what extent must mass publics be “panicked” in order to induce enough collective political, business and family action to substantially slow the growth of greenhouse gas emissions?

Policy Recommendations

Every sensible person agrees that (1) global warming has been happening over most of the second half of the twentieth century and on into the twenty first, and (2) most of it to date is due to greenhouse gas emissions.

But too much policy discussion about global warming is polarized and locked into a “syndrome of exaggeration”. The mainstream view talks of coming disaster, catastrophe, even extinction, short of urgent and massive action on a global scale. But it is easy to question the empirical basis of this forecast – not least the long history of repeated wild exaggerations of disaster relative to what later transpired. In response an active but small “sceptical” community exaggerates its scepticism. The two sides make a syndrome in that the behaviour of each confirms the negative expectations of the other.

What is now strangely urgent is to calm down the present climate hysteria so that safety-first resource allocation and consumption decisions can be made without “climate” being the touchstone of the very future of humanity, the current idol of the ancient human longing for Salvation in anxious times, the pathway for all the ingredients of a better world.

The essay suggests changes in the budget and mandate of the Intergovernmental Panel on Climate Change; more action by learned societies in calling to account the wild exaggerators; beefing up the Loss and Damage pillar of the Paris Agreement; boosting investment in “clean coal” technologies as well as renewables, and linking coal-power retirement to the coming on stream of attractive alternatives; creating central planning capacity at national and international levels (eg in multilateral development banks) to integrate investment decisions in energy, transport, buildings, industry and agriculture; and last but not least, respecting the principle of free speech while maintaining the standards of civil discourse.

Every sensible person agrees that (1) global warming has been happening over most of the second half of the twentieth century and on into the twenty first, and (2) most of it to date is due to greenhouse gas emissions. Many go on to say that (3) global warming is the cause of all kinds of disagreeable events – including extreme weather, rising seas, and much more; and that (4) humanity faces impending catastrophe short of far-reaching changes to how we live, work and govern in order to cut CO2 emissions and dematerialize economies. This could now be described – with only a little exaggeration – as the mainstream view.

The Impending Catastrophe

Here are examples of people and organizations claiming that catastrophe for humanity and the biosphere lies ahead if the people of developed and developing countries alike do not make radical changes soon.

The New York Times reported after the G7 Summit in June 2021 that “Mr Biden was once again part of a unanimous consensus that the world needs to take drastic action to prevent a climate disaster”. The report explains that “… the world needs to urgently cut emissions if it has any chance of keeping average global temperatures from rising above 1.5C compared with preindustrial levels. That’s the threshold beyond which experts say the planet will experience catastrophic, irreversible damage.”

US climate envoy John Kerry delivered a dire warning on 12 May 2021 on “the mounting costs … of global warming and of a more volatile climate”. 2020’s tally of “22 hurricanes, floods, droughts and wildfires shattered the previous annual record of 16 such events, and that was set only 4 years ago…. You don’t have to be a scientist to begin to feel that we’re looking at a trend line.”

Christiana Figueres, former executive secretary of the UN Framework Convention on Climate Change and pivotal figure in the Paris Agreement, declared in 2020, “It is only over the next 10 years from here to 2030 that we can influence what is going to happen. The scary thing is that after 2030 it basically doesn’t really matter what humans do. We will be in danger of those tipping points having a domino effect on each other and we will lose total control.” (1)

Some more examples:

Kevin Drun, 2019: “[The Green New Deal] would only change the dates for planetary suicide by a decade or so. It’s nowhere near enough even if we do it ”.

Professor Frank Fenner, microbiologist, ANU, 2010: “We’re going to become extinct. Whatever we do now is too late”

John Davies, geophysicist, senior researcher at the Cold Climate Housing Research Center, 2014: “With business as usual life on earth is largely doomed”.

James Hansen, former Director, NASA Goddard Institute for Space Studies, testifying at a Congressional hearing on global warming in 2008: “We’re toast if we don’t get on to a very different path. This is the last chance” to avoid mass extinctions, ecosystem collapse and dramatic sea level rises. “We [scientists] see a tipping point occurring right before our eyes. The Arctic is the first tipping point and it’s occurring exactly the way we said it would.” In five to 10 years [by 2013-2018], the Arctic will be free of ice in the summer.

James Hansen, testimony at Congressional hearing, 1988: “world's leading climate expert [Hansen] predicts lower Manhattan underwater by 2018”

Dr Michael Mann, Penn State: “We’re talking about literally giving up on our coastal cities of the world and moving inland”

United Nations Environment Programme, 2005: “Fifty million climate refugees by 2010.” (2)

United Nations Environment Programme, 2011: “60 million environmental refugees by 2020”

The Guardian carried a front-page story in 2004 headlined, “Now the Pentagon tells Bush: climate change will destroy us”. The by-line reads: “Secret report warns of rioting and nuclear war. Britain will be ‘Siberian’ in less than 20 years. Threat to the world is greater than terrorism”. The text continues, “A secret report, suppressed by US defence chiefs…, warns that major European cities will be sunk beneath rising seas as Britain is plunged into a ‘Siberian’ climate by 2020. Nuclear conflict, mega-droughts, famine and widespread rioting will erupt across the world.” (Emphases added).

Remember that in the 1960s and 1970s many experts forecast an immanent Ice Age. For example, 1970: “Ice age by 2000”. 1971: “New Ice Age coming by 2020 or 2030.” 1976: “Scientific consensus planet cooling famines imminent”. 1978: “No end in sight to 30 year cooling trend”.

The Climate Change Consensus

The diagnoses and prescriptions in the above statements express an underlying consensus.

Human actions (mainly burning fossil fuels and changing land use) are causing rising concentration of atmospheric CO2 (and other greenhouse gases, GHG),

Rises in man-made GHG are causing rising global temperatures in atmosphere and seas, and

This temperature rise poses not just a serious threat to humanity and the whole biosphere, but an existential threat.

In other words, the existence of humans and many other species is at stake if we do not succeed in drastically cutting CO2 emissions as the way to reduce the atmospheric concentration of GHG and thereby slow or reverse the rise in global temperature. In the oft used phrase, humanity faces an “existential crisis” induced by climate change caused by human actions. Implied but not normally stated, there are no benefits from higher concentrations of CO2 or higher temperature to be weighed against costs. Also implied but not normally stated, we must act to stop climate change regardless of cost, because the costs might include deep disruption of human civilization or even extinction.

We have to think of avoiding climate change as the global equivalent of avoiding explosions at nuclear power plants (Chernobyl, Fukushima). We invest heavily in safety-first measures in order to reduce the probability of a nuclear explosion to a very low level because the costs of a nuclear explosion are so huge. The same logic applies at the level of climate, in terms of the costs of average temperature rising by more than ~ 1.5 C from “pre-industrial”.

This is the Anthropogenic Global Warming Consensus, or Climate Change Consensus (CCC) for short. I use “consensus” in the same sense as “the Washington Consensus” about best policy for developing countries, the phrase coined by John Williamson in 1990.

The CCC is now well anchored into international agreements (such as the Paris Declaration), national policy, and increasingly corporate strategy too. The periodic Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC) reaffirm it, particularly in the Summary for Policymakers. Financial Times journalist Pilita Clark observed, “The world has rarely seen any environmental idea take off like the push to cut greenhouse gas emissions to net zero. A fringe concept six years ago, it has gone mainstream so quickly that more than 60 percent of countries now have some sort of net zero goal, along with investors managing nearly $37tn and at least 20 percent of the 2,000 largest publicly listed companies. The International Energy Agency [IEA] warns in a striking net zero report today that all new oil, gas and coal projects and exploration must stop if global warming is to stay below 1.5C.”

Scientific support comes from the fact that 97% of climate scientists agree that man-made greenhouse gases have been responsible for “most” of the warming of the Earth’s average temperature over the second half of the twentieth century. The 3% who are sceptical are not highly regarded scientists and some are in the pay of fossil fuel interests.

In the face of this scientific, interstate, and corporate agreement about the necessity of a global Big Push to cut CO2 emissions fast, developing countries and China carry a heavy responsibility, because they are the major source of global CO2 emissions, mainly from their consumption of fossil fuels. They must quickly follow the developed countries in investing on a massive scale in sources of renewable energy, whose prices are falling fast. Developed countries will offer large-scale financing and technical assistance for them to make the switch – in the developed countries’ self-interest.

It is true that developed countries put up most of the stock of greenhouse gases now in the atmosphere as they used fossil fuels to power their ascent to the top of the global hierarchy of income and wealth over the past two centuries. But that gives developing countries, even though they remain well down the income hierarchy, no justification for saying that they therefore have the right to carbon space for powering their economic development – because continuing to use relatively accessible, cheap and reliable fossil-fuel energy to power their growth pushes all humanity and the biosphere towards ruin.

Do Virtually all Climate Scientists Agree with the CCC?

It is widely cited that “97% of climate scientists agree warming is man-made”; or more exactly, “97% of science papers taking a position on climate change say it is man-made”. The conclusion is frequently amped up to “a 97% consensus that ‘humans are causing a global warming crisis’”.

Note that this last statement – with “crisis” – is not the same as the previous two, but all three statements tend to be conflated, so that people agreeing with “most recent warming is man-made” tend to be scored as agreeing that global warming is a crisis, which commonly gets inflated into agreeing that it is an existential crisis or the existential crisis.

Note that these statements of “consensus” do not specify the time period.

Note also that “high consensus” in science is only a weak criterion of “truth” in science – but the 97% figure is often deployed as evidence of the “truth” that warming is man-made. Of course, it is worth knowing to what extent there are “widely accepted truths” in any field. But problems come when the “fact” of consensus is established in a clearly tendentious way.

A standard source of the claim that 97% of climate scientists agree that global warming is man-made is the study by John Cook et al. (2013). The study rated about 12,000 abstracts of peer-reviewed papers published between 1991 and 2011. The rating was done by 12 volunteers, each abstract was rated by two people, making 24,000 ratings. The ratings were in three categories: (1) implicit or explicit endorsement of human-caused global warming; (2) no opinion; (3) implicit or explicit rejection or minimization of the human influence. About 4,000 abstracts took a position on the cause of global warming, 97.1% of which endorsed human-caused global warming.

Notice that this should not be, but commonly is translated as “97% of climate scientists endorse …”. Notice too that the abstracts were not rated as to whether they stressed greenhouse gases or man-made changes in land use and land cover; the implicit assumption is, man-made greenhouse gases are the cause of warming. Finally, notice that the abstracts were not rated as to whether they endorsed the idea of a global warming crisis or catastrophe; only as to whether they endorsed the idea of human causes of global warming.

A Wikipedia essay describes the study as “a landmark climate research paper [which] found that 97.1% of climate scientists supported the hypothesis of anthropogenic global warming (AGW). As of March 2021, the paper has received at least 1,270,076 downloads.”

There is an obvious question. Does “endorsement of human-caused global warming” mean warming caused 100% by human actions, or 75%, or 50%, or 25%? Any of these may be consistent with “climate change is man-made”. By leaving the degree of causation by humans open, thumbs can be put on the scales to yield the conclusion that virtually all well-qualified scientists believe that global warming of the past several decades is caused almost entirely by human action (would not be occurring in the absence of that action).

Professor Mike Hulme, professor of Human Geography at the University of Cambridge, concludes: “The ‘97% consensus’ article is poorly conceived, poorly designed and poorly executed.” Analysis by David Legates et al (2015) found that only 0.3% of the sampled papers “endorsed the standard definition of consensus: that most warming since 1950 is anthropogenic”. Research physicist Nicola Scafetta: “Cook et al (2013) is based on a straw man argument because it does not correctly define the IPCC AGW [anthropogenic global warming ] theory, which is NOT that human emissions have contributed 50%+ of the global warming since 1900 but that almost 90-100% of the observed global warming was induced by human emission”. (3)

It is testimony to the apocalyptic emotion behind people’s response to “climate change” and “global warming” that the Cook et al. paper, and others with similar methods, have commanded such credence in the face of evident flaws – notably (1) in fudging the distinction between agreeing that human actions have some role in global warming and agreeing that human actions explain most global warming; (2) in not asking whether – extent to which -- the scientists’ papers identified global warming as a problem, a crisis, an existential crisis, over what time period. (4)

By keeping it vague what the “consensus” agrees on, authors and users of the studies have given the impression that endorsement of “humans are causing global warming” means endorsement that “humans’ enhancement of the greenhouse effect will be dangerous enough to be ‘catastrophic’”, and therefore also means endorsement of the imperative for urgent, radical action on a global scale by governments, firms and families.

It is testimony to the pervasive anxiety of the zeitgeist that such surveys are routinely cited as demonstrating a near-unanimous scientific consensus in favor of radical, far-reaching climate policy (including for energy, food and materials), when the surveys do not even ask the question as to whether the respondent considers that (a) the anthropogenic component of recent warming is dangerous, and (b) dangerous enough to require a global climate policy. The surveys are almost valueless scientifically, but valuable politically.

Upward Bias in Temperature Forecasting Models

The prospect of a coming catastrophe for humanity and the biosphere rests heavily on outputs of climate forecasting models. But as David Legates and co-authors argue, these models “exhibit a strong exaggeration in their results even when narrowly adopting atmospheric carbon dioxide as the sole driver of climate responses…. [General circulation models, such as those of the IPCC, the Intergovernmental Panel on Climate Change] have consistently overestimated the climate sensitivity to rising atmospheric carbon dioxide.”

Ross McKitrick (2020) begins his assessment, “Two new peer-reviewed papers from independent teams confirm that climate models overstate atmospheric warming, and the problem [of overstatement] has gotten worse over time, not better”. One of the papers (by McKitrick and John Christy) examined 38 models, the other, 48 models, used by the Intergovernmental Panel on Climate Change (IPCC), the various US “National Assessments”, the EPA’s “Endangerment Finding”, and more.

McKitrick continues, “Both papers looked at ‘hindcasts’, which are reconstructions of recent historical temperatures in response to observed greenhouse gas emissions and other changes (eg aerosols and solar forcing). Across the two papers it emerges that the models overshoot historical warming from the near-surface through the upper troposphere, in the tropics and globally.” The study based on 48 models for 1998 to 2014 found that they warm on average 4 to 5 times faster than the observations.

McKitrick concludes, “modelling the climate is incredibly difficult, and no one faults the scientific community for finding it a tough problem to solve. But we are all living with the consequences of climate modelers stubbornly using generation after generation of models that exhibit too much surface and tropospheric warming, in addition to running grossly exaggerated forcing scenarios (eg RCP8.5).

“[W]hen the models get the tropical troposphere wrong, it drives potential errors in many other features of the model atmosphere. Even if the original problem was confined to excess warming in the tropical mid-troposphere, it has now expanded into a more pervasive warm bias throughout the global troposphere.

“If the discrepancies in the troposphere were evenly split across models between excess warming and cooling we could chalk it up to noise and uncertainty. But that is not the case: it’s all excess warming…. That’s bias, not uncertainty, and until the modelling community finds a way to fix it, the economics and policy making community are justified in assuming future warming projects are overstated, potentially by a great deal….”

The strong upward bias in temperature forecasts relative to observations compromise the models’ forecasting impacts on ecosystems, including agriculture, by exaggerating the probability of catastrophic effects.

The IPCC makes projections of future global temperatures to the end of century based on various models. They range from a low of 1.4 C to a high of 5.6 C over pre-industrial temperature (roughly 1900). The wide range makes them almost meaningless. The IPCC explains that the wide range results from uncertainty about the magnitude of the feedback between warming and increased rates of evaporation – and David Seckler adds, also about the effects of evaporation on clouds and precipitation. (5)

It is astonishing to learn that the climate models miss a critical component of the climate system -- the hydrological cycle, and specifically clouds, which the IPCC calls the “wild card” in the climate system.

The IPCC’s Worst Case Scenario is commonly used as the Business as Usual without a Radical Policy Action’ Scenario

The IPCC’s Assessment Report 5 (AR5), published in 2014, presented a range of forecasts of global climate out to 2050 and 2100, based on different assumptions about radiative forcing (a measure of how much of the sun’s energy the atmosphere traps). The most extreme – the worst case – was called Representative Concentration Pathway (RCP) 8.5. It assumes ominous reversals in several basic, long-standing trends, all heading in the extremely wrong direction to 2100:

high population growth to reach more than 12 billion people

slow technology development

coal consumption increases by 500 % between 2005 and 2100 (no account taken of supply constraints)

slow GDP growth

fast rise in world poverty

high energy use

high GHG emissions.

temperature forecast: 5 C rise between 2005 and 2100.

RCP 8.5’s vision is horrifying, as worst-case scenarios should be.

A whole wave of literature, in peer-reviewed journals as well as in media, even by IPCC authors, has since presented this worst-case as either “the most likely case” or “the baseline case – business as usual without policy action”. This misleading assumption provoked a recent paper in Nature subtitled: “Stop using the worst-case scenario for climate warming as the most likely outcome” (see also, Chrobak, 2020).

The Politics: How has the CCC become so Dominant

How can we understand the present dominance of the CCC in public and political opinion around the world, despite repeated evidence -- over decades -- of wildly exaggerated forecasts of doom when compared against measured outcomes, and despite the real uncertainties (“known unknowns”) in knowledge about basic mechanisms?

We can identify several mutually reinforcing reasons.

1. The public demand for negatively-inflected news, especially on climate

News that fits the CCC plays into a more general logic of “If it bleeds, it leads”, meaning that the media tend to deliver negativity – about climate, health, almost anything – because readers and viewers want negatively-inflected stories. Recent research finds that across all types of articles the most popular stories have high negative content. Surprisingly, politics matters little: there is no difference between conservative and liberal outlets in propensity to deliver negativity. Rather, the difference is between media outlets by size and influence: the bigger and more influential the media brand, the stronger the bias towards the negative – showing how good they are at delivering what people want. According to Matthew Yglesias, several recent research studies find that “the kind of stories people like to consume are compulsive rather than satisfying …. You’re clicking and sharing stories about terrible things and raising alarms and listening to the alarms that are being raised by others, and it all feels very compelling precisely because it’s gloomy and alarming …. People like to get mad, then share the content so that peers can share their outrage.”

Climate lends itself well to this negativity bias. Richard Betts, then the head of climate impacts at the Met Office, explained the demand for negative climate stories (BBC News Channel, 11 January 2010, emphasis added ):

“The focus on climate change is now so huge that everybody seems to need to have some link to climate change if they are to attract attention and funding. Hence the increasing tendency to link everything to climate change – whether scientifically proven or not …. I have quite literally had journalists phone me up during an unusually warm spell of weather and ask ‘is this a result of global warming?’ When I say ‘no, not really, it is just weather’, they’ve thanked me very much and then phoned somebody else, and kept trying until they got someone to say yes it was. Talking up of the problem then gives easy ammunition to those who wish to discredit the science.”

Holman Jenkins, in The Wall St Journal (2018), describes the other side of the exaggeration incentive: “Over the past 15 or 20 years the climate beat has been handed over to reporter-activists who’ve decided that climate science is impenetrable but at least nobody ever got fired for exaggerating the risks of climate change.”

Climate scientist Judith Curry identifies a similar logic in the frequent conflation of extreme weather events and “global warming”. “In 2005 [following Hurricane Katrina] the public found it very hard to care about 1 degree or even 4 degrees of warming – heck, the temperatures varied by that much on a day-to-day basis.… However, arguments that a relatively small amount of global warming (order 1 C) could result in more intense hurricanes, well that got their attention…. The activists now had a new weapon in their arsenal – attributing extreme weather events to manmade climate change. The ‘will to act’ seemed tied to alarmism about extreme weather events. Which provides a key political role for unsupported ‘storylines’ about extreme weather events.” The “heat dome” over the Pacific northwest of the US and Canada in June 2021 was generally treated as yet more evidence of “climate change. You would not know it from the coverage, but in Washington and Oregon, the number of days per decade with temperature above 99 F shows no upward trend from 1911-20 to 2011-20. For example, the number of days above 99 F in 1971-80 was more than in 2011-20. Across the US the 1930s was arguably the hottest decade on record; the time of the deadly “Dust Bowl”, summer 1936, was the hottest summer on record between 1895 and 2020.

An attempt to push the distinction between “weather” and “climate” is unwelcome in this context, because it weakens the motivating, mobilising force of “climate” as the boundless enemy that could destroy humanity, like the Biblical Flood. The Climate Apocalypse is imminent, is the motivational message (also see Adler, 2019).

This is the deeper story behind the wild exaggerations of the forecasts and the continued high credibility of those who make them. The exaggerations express the apocalyptic thinking about climate now sweeping the world, including the financial and corporate world. They express a story of humans damaging Nature, and Nature destroying humans in return. These stories themselves express ancient de-creation stories of humans misbehaving in the eyes of God, and God punishing them. The Biblical flood occurred because God decided the people had become wicked, had stopped respecting God and Nature, so He resolved to wipe life off the face of the earth, saving only a breeding pair of each species in order to recreate the world in His image. Much the same story appeared in Sumerian culture long before the Bible, and later in the Quran, expressing a desperate human wish for Salvation.

In our more secular age, apocalyptic theology can rely on Nature in place of God -- Nature invested with God-like powers of punishment and reward.

2. The “political” science of the IPCC

The IPCC was established to provide a properly scientific center of gravity for discussions about climate, and issue regular balanced assessments of the state of scientific climate knowledge. But there are at least two basic problems with the IPCC process. One is that the mandate of the IPCC says that it is “to assess … the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation” (emphasis added). (6) The mandate does not mention to assess the interaction between human and natural causes. It is as though natural causes do not exist. The IPCC’s whole body of work consequently is slanted towards exaggerating human causes of given climate changes, marginalizing the role of natural causes interacting with human causes. Which among other effects leads it to give undue weight to “mitigating” climate change (by changing human actions) relative to “adapting” to climate changes partly induced by natural forces.

The common justification given by IPCC defenders is: natural causes operate only very slowly; the climate is changing fast; therefore the climate changes must be driven by humans, and humans can change their behaviour fast – when forced and sufficiently motivated to do so ( using all the techniques of Machiavelli). This justification underplays the point that some natural causes – eg the Atlantic Multidecadal Oscillation – do change fairly quickly, over decades, with far reaching effects (eg Atlantic Multidecadal Oscillation and its impacts on the Greenland ice sheet).

The second IPCC problem is that this bias to doomsday forecasts – therefore to urgent and far-reaching action -- is intensified in the process of translating from the technical reports to the summaries for policy makers. The translation – done mostly by non-scientists -- tends to downplay uncertainties and up-play certainties in an alarming, even catastrophizing direction. Hence the tendency to treat worst-case scenarios as likely scenarios. Recall the subtitle to the Nature paper, “Stop using the worst-case scenario for climate warming as the most likely outcome” (2020).

3. Logic of decision-making and logic of mobilization

The tendency to treat worst-case scenarios as likely scenarios “in the absence of radical changes to how we live, work and govern” can be understood in terms of the distinction between the logic of decision-making and the logic of mobilization or action. To make the best decision about what to do, one needs to explore a range of possible alternative courses of action, weigh up the pros and cons of each, then decide which is best. But having exposed many people to a range of options, there may be action-sapping disagreement as to which is best. To get a great mass of people to move all in one direction one needs to present them with only two alternatives, one of which is crazy, and pretend to be entirely confident of the two outcomes. (7) If they can be convinced that there are only two alternatives and one is crazy, they will follow.

The Climate Change Consensus expresses the logic of mobilization. It presents two alternatives. “Do nothing (or little)”, which leads to catastrophe, extinction, the planet becomes ungovernable, coastal cities must be abandoned, lower Manhattan will be underwater by 2018. Or else, quickly decarbonize the world economy and push towards a broader dematerialization of lifeways. No prizes for guessing which wins. This is how you mobilize people on a vast scale to do what you think must be done. Or as a US senator from the West once put it, “Managing politicians is like herding wild horses. To get them running in the same direction you have to stampede them.” (8)

4. Left and right politics

While the demand for negatively-inflected news cuts across the political spectrum, political ideology certainly shapes people’s beliefs about climate. Climate change “scepticism” is almost a talisman of the center-right and right, and is strongly promoted by fossil fuel interests. Climate “alarmism” is more pronounced on the center-left and left of the ideological spectrum. It is promoted as a sacred unifying mission by a great global phalanx of left-green civic action organizations (Extinction Rebellion is prominent).

A Guardian article describes the right-wing “sceptical” tactic. “Vested interests have long realized [that people-at-large trust climate scientists on the subject of global warming] and have engaged in a campaign to misinform the public about the scientific consensus. For example, a memo from communications strategist Frank Luntz leaked in 2002 advised Republicans, ‘Should the public come to believe that the scientific issues are settled, their views about global warming will change accordingly. Therefore, you need to continue to make the lack of scientific certainty a primary issue in the debate’. This campaign has been successful… The media has assisted in this public misconception, with most climate stories ‘balanced’ with a ‘sceptic’ perspective. However, this results in making the 2-3% seem like 50%... As a result, people believe scientists are still split about what’s causing global warming, and therefore there is not nearly enough public support or motivation to solve the problem.”

Both sides accuse the other of abusing “the science”. Both sides generate expansive pressures to describe more and more trends, issue more and more prescriptions, without ambiguity and shading, and judge more and more of the other’s claims pre-emptively. Individual issues (eg extreme weather) are not discussed in terms of their own evidence but are packaged together in ideological visions, the better to establish clear moral battle lines, disagreement being moral heresy.

This is the playing out of a larger process of polarization common when scientific disagreements become public. As described by sociologist of science Robert K. Merton, each group then responds to stereotyped versions of the other. “They see in the other’s work primarily what the hostile stereotype has alerted them to see, and then promptly mistake the part for the whole. In this process, each group … becomes less and less motivated to study the work of the other, since there is manifestly little point in doing so. They scan the out-group’s writings just enough to find ammunition for new fusillades.” (9)

The result is a “syndrome of exaggeration”: each side exaggerates evidence in its favour and downplays evidence against, which justifies the other in exaggerating evidence in its favour and downplaying evidence against; and back again. It is a syndrome in that the behaviour of each side confirms the negative expectations of the other. They often go at each other ad hominem, like adolescent school boys, including people who regard themselves as serious scientists. In the digital era members of both sides are able to quickly find one another and the enemy. (10)

Yet to talk of “two sides” is misleading, because the side championing the CCC is by far the dominant. Recall the Financial Times journalist Pilita Clark: “The world has rarely seen any environmental idea take off like the push to cut greenhouse gas emissions to net zero.” For political leaders and increasingly business leaders, being seen to give high value to protecting the public against all the ills attributed to “climate change” – including by pledging big changes to be made long after they leave office -- is a way to show foresight, statesmanship, leading on the front foot. Many right-wing politicians and business leaders now wish to present themselves as fighters against climate change, even as they continue to support fossil-fuel industries.

5. Finance and business interests

There are now powerful industrial interest groups promoting climate alarmism for profit-seeking reasons, including those invested in the switch from fossil fuels to renewables and those invested in the switch from combustion to electrical engines. The CEO of the electric vehicle car company Lucid (a former Tesla engineer) said recently that the transition to an EV world will happen faster than anyone expects, driven by the environmental imperative. He said, “The environment is in crisis. The world needs millions of electric cars tomorrow”. He did not suggest where all the electricity will come from.

Many big players in finance see opportunities for speculative profits by playing up climate dangers. Goldman-Sachs in 2005 authored the firm’s environmental policy, which said “voluntary action alone cannot solve the climate change problem”, from a firm that has consistently opposed government regulation. It and other financial firms supported what Matt Taibbi called “a new commodities bubble disguised as an ‘environmental plan’” – a carbon credit market in the form of cap-and-trade. Coal plants, utilities, natural gas distributors and some other industries are assigned carbon emission limits. To exceed the limits they must buy credits from those who emit less than their limit. As of 2010, the volume of the market in the US was estimated as $1 trillion annually. Goldman and the others were making themselves central actors in the market. The best thing about it is that the emission limits keep being lowered, implying that the price is guaranteed to keep rising, to the benefit of the intermediaries.

On top of all this, the whole “sustainable investing” movement provides opportunities for big profits at the intersection of the already thick alphabet soup of sustainability disclosure regulations (TCFD, SASB, GRI, CDSB among others, in the case of the EU) and the lack of meaningful, reliable data. “At the moment, the risk is that it is ‘garbage in, garbage out’”, says the head of sustainable finance at S&P Global Ratings.

So the fact that the financial sector is “worried” about climate change could be taken to be part of the problem, underlining the need for public authorities to take charge and frame parameters within which private operations produce public benefits. (11)

Conclusion

I have argued that the “plausible” risks of climate change are commonly exaggerated within the climate community. Recall for example, Christiana Figueres, 2020, “The scary thing is that after 2030 it basically doesn’t really matter what humans do”; Kevin Drum, 2019, “[The Green New Deal] would only change the dates for planetary suicide by a decade or so”; Frank Fenner, 2010, “We’re going to become extinct. Whatever we do now is too late.” Many more in the same doomsday vein.

We have seen that the standard global warming models have a powerful built-in bias to exaggerate the rate of future temperature rise, as seen in (most of) them “hindcasting” temperature rises several times faster than actually observed. We have seen that forecasters commonly take “worst-case scenarios” as “likely scenarios in the absence of radical action” (eg reaching net zero carbon emissions by 2050), to the point where Nature recently published a paper sub-titled, “Stop using the worst-case scenario for climate warming as the most likely outcome”.

The dismaying thing is that scientists and advocates have been making catastrophising global warming forecasts of this kind for decades past, normally dated some 10 to 30 years into the future. The due date comes without catastrophe, but never a retrospective holding to account. Rather, on to the next catastrophising forecast another 10 to 30 years ahead. Scientists-writers-activists know the catastrophe forecasts get the attention, the clicks, the research funding. We saw the exaggeration mechanism spelled out by Richard Betts of the BBC, Holman Jenkins of the Wall St Journal, and climate scientist Judith Curry.

The built-in exaggeration of the costs of climate change blunts the parallel with nuclear power plants. We know with high certainty the costs of nuclear explosions. We know the costs of global temperature going above 1.5 C above “pre-industrial” much less certainly, and we can see the mechanisms by which the likely costs are being systematically exaggerated.

On the other hand, there is abundant evidence that even without the doomsday exaggerations the plausible risks of climate change could be very serious, in particular because of the inherent political economy difficulty of getting needed global or regional cooperation when political action is mostly at the level of sovereign nation states (see the G20).

Coal power generation is the single biggest source of GHG emissions, and emissions from coal consumption will probably not fall fast, whatever the promises. First, coal is cheap, accessible and generates reliable power for many developing countries; in Asia, coal alone generates 40 percent of energy consumption, much higher than the world average of 29 percent. (12) Second, developing countries, including China, assert a strong claim on carbon space to power their economic development. They see it partly as a matter of fundamental justice, since developed countries emitted most of the CO2 that is already in the atmosphere and seas as the necessary condition for them becoming developed. Developed countries promise finance and technical assistance on a massive scale to accelerate the energy transition in developing countries – and have a long track record of leaving promises as promises. (See the global distribution of Covid vaccines. See the results of vaunted “voting reform” in the World Bank, leaving the US with 17% and China with 6%.) What is more, the Japanese government plans up to 22 new coal power plants, as it closes nuclear plants in the wake of Fukushima.

Then comes a question: does drawing attention to the doomsday exaggerations of the CCC – “disaster”, “catastrophe”, “extinction”, “fiddling while the planet burns” - serve to reduce the political and public pressures for necessary ameliorative action, in a world where powerful fossil lobbies seek to block or delay such action for reasons independent of “evidence”? Should “Third Way” essays like this one not be published, because “give them (deniers, sceptics) an inch and they will take a mile”? To what extent must mass publics be “panicked” in order to induce enough collective political and business action – national, international – to substantially slow the growth of GHG emissions? If we can sustain emission- and temperature-curbing action only by holding up the certainty of disaster, catastrophe, extinction, then better to let the doomsday exaggerations continue as the necessary condition for that ameliorative action. What is the harm, when the alternative is ruin for humanity and the biosphere?

The danger is that the repeated wild exaggerations produce a public backlash, a discrediting, and a strengthening of the many “deniers” who see “leftists, governments, and the United Nations” as the source of malevolence in the world. A more accurate accounting of the evidence would (hopefully) produce a more calibrated and sustained public and business response.

What to do? (13)

The IPCC should allocate some 10% of its budget to a Red Team, dedicated to independent scrutiny of its evidence and conclusions (especially the Summary for Policymakers). (14) The IPCC should revise its mandate to require it explicitly to focus on interactions between natural forces and human actions, as it is now almost required not to, biassing its assessment of the state of scientific knowledge towards “man-made global warming” as an almost separate system.

Learned societies should more actively seek to understand and publicize the reasons for repeated large-scale discrepancies between “hindcasts” and “forecasts” on the one hand and actual observations on the other, discrepancies strongly biased towards “disaster”.

It is particularly important that the knee-jerk attribution of extreme weather events to global warming be challenged with reference to evidence. Judith Curry explained – quoted earlier -- why CCC advocates have a powerful incentive to attribute cases of extreme weather to global warming, tout court. She has recently written, “Apart from the reduced frequency of the coldest temperatures, the signal of global warming in the statistics of extreme weather events remains much smaller than that from natural climate variability, and is expected to remain so at least until the second half of the 21rst century.” She goes on to amplify a point made earlier about the limits of the climate models used for the IPCC assessment reports: they are driven mainly by predictions of future GHG emissions. They do not include predictions of natural climate variability arising from solar output, volcanic eruptions or evolution of large-scale multi-decadal ocean circulations. They do a particularly poor job of simulating regional and decadal-scale climate variability. (15)

Participants on both sides have to learn the art of respecting the principle of free speech while maintaining the standards of civil discourse.

While I have stressed the CCC’s support for urgent and radical changes to the way we live, work and govern, some CCC champions argue that the world economy could continue on a largely unchanged growth trajectory provided that we switch fast from fossil fuels to renewables. Indeed, this switch is beginning to happen fast, with coal and nuclear energy production unable to compete without subsidies in areas where natural gas, wind and solar resources are readily available.

But to say that life can continue as before provided we substitute renewables for fossil fuels obscures the huge difficulties for many developing countries of getting out of fossil fuels while growing fast enough to reduce the income gap with developed countries.

We must give high priority to investments in “clean coal” technologies, such as carbon capture, storage and use, to make the dirtier coal cleaner in existing and new coal-power plants; and link coal-power retirement to the coming on-stream of attractive alternatives. The multilateral development banks have recently or will soon announce bans on coal power. The G7 leaders meeting in mid 2021 promised to stop using government funds to finance new international coal power plants by the end of 2021. China’s Belt and Road Initiative should increase its pressure on host countries to cut back on dirty coal and boost clean coal and renewables.

A high and immediate priority is to build a robust financing and technical assistance mechanism for help from developed to developing countries. The Paris Agreement instituted a Mitigation pillar and an Adaptation pillar. Intense debate took place around the third, Loss and Damage, the name of a mechanism to compensate for the destruction that Mitigation and Adaptation cannot prevent. Developed countries by and large have sought to marginalize the Loss and Damage pillar, as they have long sought to marginalize Special and Differential Treatment for developing countries in trade and investment agreements. “Finance is something that really rich countries, particularly the US, have made sure that there is no progress and not even discussion on”, remarked Harjeet Singh, senior advisor at Climate Action Network International. (16)

My “forecast” is that in the next two to three decades to midcentury we will make rapid progress in scientific knowledge about weather and climate, helped by longer and more accurate satellite and ocean records and by a new generation of climate models that operate at one to ten kilometers scale (as distinct from the current models’ 50 kilometer scale). We will probably continue to make rapid progress in decoupling GHG from GDP growth, with a combination of state direction-setting and private innovation focused on transformations in energy, transport, buildings, industry and agriculture, using incentives like research and development subsidies and tax credits for technology investment, and penalties for carbon-intensive activities. (17) In transport, this entails coordination across urban planning decisions, public transport investment, future of remote working, infrastructures for electric charging and hydrogen loading. (18) Transformations in these systems are already underway, and the prospect of vast new green investments, supported and under-written by the state, will intensify them. These green investments will open productive investment opportunities previously limited by stagnant wages and rising debt, which have driven investment into increasingly speculative ventures. If by two or three decades ahead it looks as though the second half of this century could well experience globally extreme climate and ocean events, we will be much more knowledgeable about what to do than we are today. (19)

## Bizcon DA

#### Existing patent protections solves – pay for delay is an unnecessary artificial extension of exclusivity

Kotlikoff 08 - Professor of Economics Boston University

Laurence J. Kotlikoff, “Stimulating Innovation in the Biologics Industry: A Balanced Approach to Marketing Exclusivity,” September 2008, http://people.bu.edu/kotlikof/New%20Kotlikoff%20Web%20Page/Kotlikoff\_Innovation\_in\_Biologics21.pdf

Limiting Monopoly Protection to Increase Economic Efficiency

If less monopoly protection can be more when it comes to stimulating invention, the same holds true when it comes to improving economic efficiency. In his fundamental paper on optimal patent life, William Nordhaus argues that “the optimal life for drastic process inventions seems to be very small, in the order of one-tenth of the actual life of patents. The reason for the very small (optimal) life seems to be that drastic inventions are very important inventions and thus have a great deal of potential deadweight loss if they have long life.”50 Drastic inventions refer here to inventions that lead to major reductions in the prices facing consumers once patent protection terminates. But the fact that the true economic cost for consumers of consuming a product is quite low means they should be consuming a lot of it. But with extended monopoly protection this doesn’t happen, or at least doesn’t happen for a very long time. The resulting consumer loss in welfare is called a deadweight loss. Glenn Loury reaches a similar conclusion to Nordhaus, but in a more realistic setting in which the overall economy’s conditions change when patent policy is modified. Loury states, “Social welfare can be maximized by appropriately limiting entry and firm investments with licensing fees and finite patent life.

Conclusion

Biologic medications hold enormous promise for improving Americans’ health and well-being. Fulfilling that promise requires making sure that all Americans are able to access these medications at affordable prices within a reasonable period of time from their discovery. It also requires ensuring that tomorrow’s biological breakthroughs are able to build on today’s. Legislation now pending in Congress offers hope to millions of Americans that more affordable versions of biologic medications will soon become available through a competitive marketplace. But exclusivity provisions in three of the four main biogenerics bills significantly undermine the legislation’s objectives. These provisions constitute uncontestable grants of monopoly rights by government fiat — something that runs far afield of traditional U.S. patent policy. The provisions would substantially extend the duration of monopoly protection of brand biologic medicines and, thereby, materially delay the arrival of low-cost generic alternatives. These conveyances of exclusive marketing rights not only exclude competing biologic companies from entering the market with low-cost alternatives for extended periods of time. They also exclude other innovators from building, in a timely manner, on the stock of prior knowledge, much of which was accumulated at public expense. These bills also fail to anticipate and prevent evergreening under which brand companies can obtain repeated periods of exclusivity and monopolize biologic medicines essentially indefinitely. New medications that alleviate or cure terrible disease are such remarkable gifts to humankind that we must continue to appropriately reward true innovation in this field. But the new drugs of today are not those of tomorrow. And today’s inventors are generally not tomorrow’s. The reason is clear. Today’s inventors have strong incentives to protect their discoveries, not make new ones whose arrival on the market would undermine their existing profits and market share. And, as numerous papers in the economics literature on invention and monopoly protection point out, over-extending monopoly protection can easily boomerang. It may do little or nothing to incentivize new discovery and simply delay when the next discovery comes on board. In this case, providing greater incentive to innovate leads to less, not more, innovation over time. Without question, the American biologics drug industry is a golden goose, which is advancing the healthcare of our citizens. The presumption of many is that feeding this goose more and more will lead it to produce an ever-greater number of eggs at a faster pace. But doing so is very dangerous. After all, why should the goose produce as much when it has less incentive, and why should anyone look for a better goose if the current one cannot be displaced? Fortunately, we don’t need to guess how much to feed the biologics goose. Its chemical cousin — the pharmaceutical goose — is, from all appearances, essentially identical in its diet and response to incentives. What works for the pharmaceutical goose will surely work for the biologics one. And what works for the pharmaceutical goose in promoting and protecting innovation is the Hatch-Waxman legislation — a bill whose exclusivity provisions are sufficiently balanced as to not over-extend the duration of monopoly protection. Close to a quarter of a century’s experience speaks clearly. HatchWaxman provides its goose with a balanced diet — one that provides brand companies with appropriate incentives to develop and market their products, one that permits competitors to lower pharmaceutical prices to the public in a timely manner, and one that keeps new pharmaceutical discoveries coming at a rapid pace.

#### Perception – the plan is an expected continuation of the *Actavis* precedent

Carrier 18 – Michael A. Carrier is a Distinguished Professor at Rutgers Law and a leading authority in antitrust and intellectual property law with expertise in the pharmaceutical, high-technology, and music industries. Carl J. Minniti III, Rutgers Law School, J.D. 2017.

January 12, 2018, “BIOLOGICS: THE NEW ANTITRUST FRONTIER,” https://www.illinoislawreview.org/wp-content/uploads/2018/01/Carrier.pdf

In determining the appropriate antitrust analysis of settlements, an initial question centers on the application of FTC v. Actavis. We believe that, in a broad holding of general applicability, Actavis confirmed antitrust law’s vital role in evaluating the legality of settlements involving payment and delayed entry. The Court relied on **an array of previous cases to confirm that its precedents “make clear** that patent-related settlements can sometimes violate the antitrust laws.”

To be sure, the Court was not offering an antitrust assessment of biologic settlements. Nor could it have given that no court—even now, several years later—has considered settlements under the BPCIA. But we believe the **setting** of **complex pharmaceutical regulation under the BPCIA easily offers sufficient similarities to the Hatch-Waxman Act** to allow application of Actavis’s broad principles. In addition, payment to avoid the risk of biosimilar competition presents the same concerns highlighted in Actavis.

The linchpin in the antitrust analysis of settlements is whether a generic is excluded from the market based on a patent or payment. Exclusion based on a patent generally does not present antitrust concern because it is commonly understood that patent-term split agreements, by which brands and generics divide the remaining patent term by selecting a time for generic entry, do not violate the antitrust laws. The reason is that the parties’ compromise on the entry date reflects the odds of success in patent litigation. The greater the likelihood the patent is valid and infringed, the later in the period generic entry would be expected. The lower the likelihood, the earlier entry would be expected. A brand, however, is likely to gain additional exclusivity not explained by a patent by supplementing the parties’ entry-date agreement with a payment to the generic.

The same distinction between patent and payment should apply in the setting of biologics. The biologic manufacturer is entitled to rely on its patent to exclude a generic. But **it should not be able to pay a biosimilar to gain additional delay.** In determining whether there is payment, the court should consider, as one of us has explained before, whether the biologic manufacturer conveys “a type of consideration not available as a direct consequence of winning the lawsuit.” If the biosimilar manufacturer is able to obtain such consideration, “its exclusion from the market cannot be traced to the strength of the [biologic] patent.” In such a case, “the [biologic maker] is providing compensation beyond what even a valid and infringed patent would justify.”224 And, presenting antitrust concern, the biosimilar delays entering the market because of this payment.

One example of a form of payment that could arise in this setting involves a biosimilar’s access to a biologic’s distribution or reimbursement networks. In contrast to distribution through wholesalers and specialty distributors (each of which obtains a portion of revenues, reducing a biosimilar’s profitability), biologics could offer access to a “manufacturer direct” channel which, in selling directly to purchasers (e.g., specialty pharmacies and large hospitals), removes the “middleman.” Setting up an efficient supply chain is difficult and expensive, and not all biologics will be able to implement such a scheme. As a result, if a biologic has already set up direct distribution, one form of payment to a biosimilar could be access to, and integration into, the valuable network, which it would not be able to obtain through patent litigation.

Another type of payment could involve Group Purchasing Organizations (“GPOs”) or Pharmacy Benefit Managers (“PBMs”). GPOs are collections of providers that pool resources to maximize economies of scale in drug purchasing and sometimes function as distributors, gaining control over products offered to downstream purchasers.228 PBMs also manage prescription drug pro

[FOOTNOTES BEGIN]

221. HERBERT HOVENKAMP, MARK D. JANIS, MARK A. LEMLEY, CHRISTOPHER R. LESLIE, & MICHAEL A. CARRIER, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 16.01[f] (3d ed. 2016). 222. Carrier, Payment After Actavis, supra note 219, at 9. 223. Id. 224. Id. 225. Id. 226. NIAZI, supra note 21, at 354–56; see also Jack McCain, Connecting Patients with Specialty Products, BIOTECHNOLOGY HEALTHCARE, Summer 2012, at 8, https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC3411231/. 227. NIAZI, supra note 21, at 354–56. 228. Id. at 352, 353.

[FOOTNOTES END]

grams for downstream buyers and, in some cases, after negotiating rebates with manufacturers, limit the drugs sold under their plans. This latter role ensures that they “are very important” to a biosimilar manufacturer in controlling access to a biosimilar product.

We envision a scenario by which a settlement could include payment in the form of a biologic bringing a biosimilar under its umbrella, granting access to certain GPO and PBM agreements to which it would otherwise not have access.

Where there is payment, the court should consider its size. The Actavis Court compared the payment’s size to litigation costs. It stated that payments that “amount to no more than a rough approximation of the litigation expenses saved through the settlement” could be justified. Litigation costs in the biologics setting will generally be higher than in the small-molecule setting. In contrast to litigation in the Hatch-Waxman setting, with a generic in the initial stage only needing to review the Orange Book, law firms must conduct substantial pre-application investigations to identify patents that could be raised in the patent dance.

Finally, where there is at-risk entry, a settlement could include a “payment” from the biologic to the biosimilar, but that payment could constitute a legitimate forgiveness of damages. This presents **a nuanced case** that could be explained by the results of patent litigation. In other words, if the biologic wins, it is entitled to recover damages from the biosimilar. But if the biosimilar wins, it will not be required to pay anything. As a result, a biologic firm’s partial waiver of damages that the biosimilar could have owed falls within the range of what the latter could have obtained through successful litigation. In short, just like it has done in the Hatch-Waxman setting, the distinction between patent and payment can provide an appropriate framework for the antitrust analysis of settlements between biologics and biosimilars.

#### P4D shields weak patents from scrutiny – undermines transformative innovation

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Severin Frank and Wolfgang Kerber, “Patent Settlements in the Pharmaceutical Industry: What Can We Learn From Economic Analysis?” MAGKS Joint Discussion Paper Series in Economics, November 2015, <https://www.econstor.eu/bitstream/10419/129293/1/845189549.pdf>

The problem of patent settlements in the pharmaceutical industry stems from the fact that a large number of granted patents are found invalid in patent litigation, which gives patent holders large incentives to defend their weak patents through settlements with reverse payments to challenging generic firms. An important reason is that patent offices do not invest enough time and resources in patent examination (esp. in regard to "prior art") and therefore tend to grant too many patents which often would not survive a challenge in patent litigation ("weak patents"). Empirical studies show that litigated patents are found invalid in 50% (or more) of all cases (Lemley/Shapiro 2005, p. 76). This result could be interpreted as a defect of the patent system. However, Lemley (2001) argued from an economic perspective, that such a result might also be efficient, because it might not be worthwhile to make deep and costly examinations of all patent applications, because many of the granted patents turn out as not valuable (rationally ignorant patent offices). But both interpretations lead to the conclusion that it is necessary that the patent system has effective legal instruments for challenging and weeding out invalid patents. It is an open question in the patent literature, whether and to what extent the institutional design of the entire patent system (with all its rules about granting, opposing, and challenging patents in courts) leads to an efficient patent system or - as in the meantime most legal and economic scholars claim - that the existing patent systems are deeply flawed and suffer from serious problems (Shapiro 2004, pp. 1018, Hall/Harhoff 2004, pp.4). An economic perspective on this problem of weak patents has led to the development of the concept of "probabilistic" patents or “partial property rights” which has played a major role in the patent settlement discussion.13 The basic idea is simple: Whereas from a legal perspective a patent right is either valid or not, the economic value of a granted patent right before litigation depends also crucially on the expected probability of defending it in patent litigation. If this probability is, e.g., θ = 0.25, then the expected value of the patent for the patent owner is much lower than the value of a fully defendable (iron-clad) patent right. This probability θ is used for defining the strength of a patent. This "probabilistic" character of a patent has been used in the patent settlement discussion in two different ways: Since the patent strength θ reflects the winning probabilities of the settling parties in patent litigation, it influences the ranges of the settlements (in regard to agreed entry dates and/or the size of reverse payments). In the economic models but also in argumentations of legal scholars, this has led to conclusions that a 25% chance of defending a patent against a challenging generic firm would lead to a settlement on an agreed entry date without reverse payment of 25% of the remaining patent duration (e.g. Elhauge/Krüger 2012, pp. 295). However, it can also be used for the analysis of the innovation incentives that such a probabilistic patent offers (e.g. how large are the incentives for an innovation that allows for a patent with a patent strength of 25%). In their seminal paper "How Strong are Weak Patents?" Farrell/Shapiro (2008, p. 1348) assume that innovation incentives for probabilistic patents are optimal, if the proportionality principle is fulfilled, i.e. that incentives for an innovation from a probabilistic patent are proportional to its patent strength, i.e. that the rents from a patent with θ = 0.5 should be half of the rents of an iron-clad patent (θ = 1) and twice the rents for a patent with θ = 0.25. Farrell/Shapiro (2008) have suggested that profits from weak patents might be relatively too large in comparison to stronger patents, leading to a distortion of innovation incentives in favour of "innovations" that only with a small probability are true innovations that should be rewarded by patent protection (see below section 5). It is well known that the challenging of potentially invalid patents can suffer from serious incentive problems. Since all patent systems rely on private litigation for challenging patents, the private incentives for challenging patents suffer from a public good problem, because the costs and risks of patent litigation is borne by the challenging firm, whereas the benefits of having eliminated an invalid patent right accrues to everybody. This externality of challenging patents cannot only lead to too small incentives for challenging firms, but also implies that patent settlements between originator and generic firms can have negative (external) effects on third parties, because the settlement helps to maintain an unjustified exclusive right. Due to these third-party effects, the usual normative notion that private parties should be free how to settle their conflicts in private litigation is problematic in the case of patent litigation. Therefore rules for critically scrutinizing and limiting the scope of patent settlements are justified also from an economic perspective. However, this is not only a problem of patent settlements. Shapiro (2003) showed that patent owners can achieve the same result of defending their weak patents also through licensing agreements (with too low license fees), mergers, and patent pools leading him to the conclusion that all of these transactions should be put under antitrust scrutiny.

#### No internal link—long-term cost of intervention uncertain and offset by anticompetitive conduct

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(Hillary, “Muzzling Antitrust: Information Products, Innovation and Free Speech,” 95 B.U. L. Rev. 35)

Workability and Chilling Innovation. The judgment that *any* level of innovation should trump *any* anticompetitive effect reflects two debatable premises. First, the courts always have great difficulty distinguishing between very small innovations and larger innovations. Second, the overall effect on innovation decreases when one moves towards balancing and away from completely favoring innovation over any anticompetitive effect.

The first premise raises questions regarding the availability and reliability of evidence underlying key decision inputs. Innovation, as defined herein, includes product changes that may not embody technological advances, and one should be careful not to think of innovation solely in terms of such advances. Firms routinely redesign products and undertake marketing studies predicting the effects of such redesigns. Some of these changes are substantial, others are clearly incremental, and some may be so marginal that they would not seem worthy of special treatment. Internal documents as well as expert assessments can guide the court in making these distinctions. Furthermore, the difficulties in making such assessments may be overstated: administrative agencies, for example, have been making many such judgments in this and related contexts.257

The second premise raises questions regarding the full range of long-term effects, including chilling effects on future innovation. One concern is that antitrust interventions in these settings are counterproductive, because they reduce the global ex ante incentives for innovation.258 While antitrust interventions reduce a potential monopolist’s incentive to innovate in theory, questions remain regarding the size and overall impact of the interventions in practice. Many observers, for example, believe that the effect of small antitrust policy changes has no appreciable effect on innovation incentives and, in any event, has not been empirically established.259 Furthermore, anticompetitive effects also affect the innovation by their rivals, either by suppressing rivals’ actual innovation or by reducing rivals’ incentives to innovate.260 The innovation embodied in the product redesign, therefore, is not the only innovation effect at issue. Thus the link between anticompetitive conduct and rival innovation suggests that assessments regarding innovation effects that focus solely upon the defendant’s innovations may be incomplete.261

**Omicron thumps the M&A market**

**Burnett 21** – Legal Analyst for Bloomberg Law

Grace Maral Burnett, "ANALYSIS: Could Omicron Bring More M&A Deal Terminations?," Bloomberg Law, 11-29-2021, https://news.bloomberglaw.com/health-law-and-business/analysis-could-omicron-bring-more-m-a-deal-terminations

This year we have seen terminations in a total of 252 mergers and acquisitions deals. This year-to-date termination count falls well below 2020’s total of 321 for the same category of transactions. Could the omicron variant of the Covid-19 virus, which the World Health Organization just designated as a variant of concern on Nov. 26, potentially shift the trend toward more deal terminations?

Post-Designation Spike?

Given what we’ve seen in response to the declaration of the pandemic in March 2020 and the WHO’s designation of the delta variant as a variant of concern (VOC) in May 2021, it seems conceivable that in the next few months we could see somewhat elevated termination counts. The highest monthly total of terminations since the beginning of last year occurred in May 2020, the second month following the declaration of the pandemic. (Our dataset includes deals valued at $1 million or greater for the control of the company, or for assets to be acquired, that were terminated after the parties entered into a definitive agreement.) And this year, June and July totals went up following the lowest number of terminations seen since the beginning of 2020 in May, the same month the delta variant was designated as a VOC.

[[Figure Omitted]]

It makes sense that we would see a one- or two-month lag in terminations after a major Covid-19 event: first the markets react, travel is restricted (again), business and valuation impacts ripple, then it takes some time for negotiations to fail. All this being said, as we have previously remarked, the M&A market has been resilient and has not at any point seen sky-high termination levels in response to this pandemic. In fact, as we’ve noted before, annual totals for 2020 and 2021 thus far are on par with—or lower than—the 2019 total.

Larger Deals at Risk

Although the overall termination count this year is lower than 2020’s, the dollar totals tell a different story. Nearly double the dollar volume has been associated with terminations this year, meaning, of course, that it’s the larger deals that have been terminated in 2021. The aggregate value of this year’s terminations is $321 billion, resulting in an average deal size of $1.3 billion. In 2020, $174.2 billion in deals were terminated, with an average deal size of $543 million.

Of the 252 deals terminated thus far in 2021, 122 were also announced in 2021, 102 were announced in 2020, and the remainder were announced in prior years. The average deal size for the terminated deals that were both announced and terminated in 2021 was $1.8 billion, whereas the deals announced last year but terminated this year have had an average deal size of $759 million.

## FTC Tradeoff DA

#### Fiat solves – new authority comes with new funding authorization

Bannan is policy counsel at New America’s Open Technology Institute, focusing on platform accountability and privacy, and Gambhir, New America's Open Technology Institute, ‘21

(Christine and Raj, “Does Data Privacy Need its Own Agency?” <https://d1y8sb8igg2f8e.cloudfront.net/documents/Does_Data_Privacy_Need_its_Own_Agency.pdf>)

Proposals delegating privacy law enforcement to the FTC generally bolster an existing bureau or establish a new bureau within the agency. Senator Wyden’s Mind Your Own Business Act of 2019 would create a new 50-person Bureau of Technology within the FTC and add 125 employees to the Bureau of Consumer Protection—100 of whom would do privacy enforcement work.102 This would bring the total number of FTC employees doing privacy enforcement work up to about 190. While the Wyden bill does not provide figures for how much adding 175 new employees would cost, former FTC Chairman Joseph Simons estimated that a $50 million budget increase from Congress would enable the FTC to hire 160 new staff.103 Under this proposal, the number of employees working on privacy would more than triple. However, it would still only be about one-tenth the size of the Eshoo-Lofgren DPA proposal.

#### FTC is already taking an aggressive approach in HC

Cornell 9/16 – Head of the U.S. antitrust practice at global antitrust powerhouse Clifford Chance LLP

Tim Cornell, 20 years of antitrust experience, has advocated on behalf of dozens of clients before the US Federal Trade Commission, the US Department of Justice, and the federal courts, with Robert Houck, Peter Mucchetti, and Brian Yin, Antitrust Litigation 2021, Last Updated September 16, 2021, <https://practiceguides.chambers.com/practice-guides/antitrust-litigation-2021/usa/trends-and-developments>

After an eventful year of antitrust litigation related to healthcare in 2020, all indications are that 2021 will be just as action-packed.

In October 2020, subscriber plaintiffs and defendants in the Blue Cross Blue Shield (BCBS) multi-district litigation (MDL) in Alabama reached a preliminary agreement on a USD 2.67 billion settlement fund, along with sweeping reforms aimed at restoring competition in the healthcare insurance industry. The litigation is an amalgamation of claims going back to 2012 accusing dozens of local insurers (so-called "Blues") of using restrictive practices to suppress competition.

Then in January 2021, President Trump signed the Competitive Health Insurance Reform Act, eliminating certain antitrust exemptions health insurers had previously enjoyed under the McCarran Ferguson Act. While these exemptions were limited, commentators have suggested that the availability of the defense may have had a chilling effect on antitrust litigation in healthcare. The plaintiffs' success in the BCBS cases and the elimination of these antitrust protections for health insurers may result in more antitrust cases against health insurers in the next few years.

Meanwhile, the multitude of suits in the long-running generic drug price fixing matters has continued to progress. In July 2020, the federal judge overseeing the multidistrict litigation initially selected the complaint filed by a coalition of 44 state attorneys general against Teva to act as a "bellwether" case (a procedure whereby a representative action among many lawsuits proceeds first to trial to help shape subsequent litigation). But in August 2020, a grand jury indicted Teva on criminal price-fixing charges, as part of the DOJ's ongoing antitrust investigation of the generic drug industry. Concerned for the complications the civil and criminal matters could pose to one another, the court vacated its bellwether selection. In May 2021, the judge instead chose the states' complaint asserting a price fixing conspiracy affecting various dermatology treatments and other drugs. Meanwhile, the DOJ has continued to pursue its own generic drugs investigations, having criminally charged at least seven companies and a number of executives, while indicating that more indictments are expected.

The FTC also has continued to make healthcare a priority for antitrust enforcement. In the Spring of 2020, the FTC announced that it would increase resources it put towards the review of previously consummated healthcare deals, sending requests for information to a number of health insurers that had recently merged. Around the same time, the FTC initiated a challenge of Jefferson Health's proposed acquisition of Albert Einstein Healthcare Network in Philadelphia. In a rare defeat for the agency, a federal court rejected the challenge in December 2020. Seemingly undeterred, however, the FTC has continued to challenge hospital mergers, including in Memphis [In re: Methodist Le Bonheur Healthcare and Tenet Healthcare Corporation, FTC No. 9396] and New Jersey [In re: Hackensack Meridian Health, Inc. and Englewood Healthcare Foundation, FTC No. 9399].

In his 9 July 2021 Executive Order, President Biden continued his administration's focus on antitrust and healthcare issues. The order directs federal agencies to seek solutions to address anticompetitive conditions affecting the US economy, including the high cost of prescription medication and healthcare services, increasing hospital consolidation, and other areas related to healthcare.

#### Plan reverses current tradeoffs

Feldman 8/27 – Distinguished Professor of Law Chair & Director of the Center for Innovation, UC Hastings Law

Robin Feldman, Arthur J. Goldberg Distinguished Professor of Law, Albert Abramson ’54 Distinguished Professor of Law Chair, and Director of the Center for Innovation, The Price Tag of 'Pay-for-Delay', UC Hastings Research Paper Forthcoming, 27 Aug 2021, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3846484>

Given that agreements between competitors are disfavored, the test for agreements between brands and generics in the context of Hatch-Waxman litigation should begin with a presumption that the agreement is anticompetitive. This approach respects the essential design of the Hatch-Waxman system to ensure rapid entry of generic drugs, in part, by providing an incentive for generic drug companies to challenge patents that are invalid or invalidly applied.182 Only when the public interest is clearly served should the presumption fall.

A presumption offers a variety of advantages to the judiciary and regulatory systems. It would ease the burdens on regulators such as the FTC, which tend to lack the resources needed to scrutinize and, if necessary, litigate each of the dozens of brand-generic settlements that occur annually. 183 [FN 183] 183 See Feldman & Misra, Fatal Attraction, supra note 8, at 260–261 (noting that, although all brand-generic agreements under the Hatch-Waxman Act must be filed with the FTC, the agency’s delays in publishing pay-for-delay reports, and the reports’ relative lack of specificity, suggests limited resources to address the problem of pay-for-delay). [End FN] In addition, by shifting the burden to the companies themselves, a presumption avoids rewarding those who concoct increasingly elaborate schemes. The company would have to establish how a complex and convoluted scheme works and why it is procompetitive.

#### Enforcement of <<their thing>> fails – new rulemaking agenda overstretches the agency

Wilson, FTC Commissioner, ‘12/10/21

(Christine S., Dissenting Statement of Commissioner Christine S. Wilson

Annual Regulatory Plan and Semi-Annual Regulatory Agenda, <https://www.ftc.gov/system/files/documents/public_statements/1598839/annual_regulatory_plan_and_semi-annual_regulatory_agenda_wilson_final.pdf>)

The context in which the Commission announces this ambitious and resource-intensive rulemaking agenda gives independent cause for concern. The “surge in merger filings” has been a central focus of Chair Khan since her arrival at the agency.2 To address the uptick in merger filings, staff from many non-merger divisions throughout the agency have been commandeered to review pre-merger notification materials.3 These filings are subject to statutory timeframes, but the FTC has struggled to meet its timing obligations.4 Consequently, the FTC’s Bureau of Competition is now sending warning letters to merging parties whose statutory timeframes have expired, warning that the agency’s investigations continue and threatening that if they proceed to consummate their transactions, they do so at their own peril.5 It is puzzling that we would unleash an avalanche of rulemakings while also confronting a tsunami of merger filings.

Merger wave or no merger wave, my Democrat colleagues have long aspired to a more expansive rulemaking agenda for the agency.6 This year, they began taking steps to implement that goal. Acting Chairwoman Slaughter created a new rulemaking group within the FTC’s Office of General Counsel to “help build [the] Commission’s rulemaking capacity and agenda for unfair or deceptive practices and unfair methods of competition.”7 She also launched a review of the Commission’s Rules of Practice to “streamline” rulemaking procedures under Section 18 of the FTC Act.8 Chair Khan then ushered those changes across the finish line.9 While the Annual Regulatory Plan and Semi-Regulatory Agenda characterize those changes to our Rules of Practice as “eliminating extra bureaucratic steps and unnecessary formalities,” in reality those changes fast-track regulation at the expense of public input, objectivity, and a full evidentiary record.10 The Statement of the Commission issued in conjunction with those rule changes confirmed a desire for an ambitious rulemaking agenda,11 which predictably is reflected in this plan.

The regulatory plan identifies many rulemakings that will be launched in the coming months, including a trade regulation rule on commercial surveillance “to curb lax security practices, limit privacy abuses, and ensure that algorithmic decision making does not result in unlawful discrimination.”12 This rule may implicate competition as well as consumer protection issues, as the Statement of Regulatory Priorities notes that “surveillance-based business models” impact not just consumers but competition.13

And taking a big step into uncharted waters, the plan states that “the Commission will also explore whether rules defining certain ‘unfair methods of competition’ prohibited by Section 5 of the FTC Act would promote competition and provide greater clarity to the market.”14 In deference to President Biden’s recent Executive Order,15 the Commission may consider competition rulemakings relating to “non-compete clauses, surveillance, the right to repair, payfor-delay pharmaceutical agreements, unfair competition in online marketplaces, occupational licensing, real-estate listing and brokerage, and industry-specific practices that substantially inhibit competition.”16 As if this list is insufficiently lengthy, the plan observes that “[t]he Commission will explore the benefits and costs of these and other competition rulemaking ideas.”17 In the absence of further detail, the reader is left to daydream about the additional rulemaking adventures that await.

# 1AR

## Prices Adv

#### Non-unique – Court extended antitrust scrutiny to small molecule drugs already

Marmaro 21 – Doctor of Law at Columbia Law School.

Morgan, February 2021, “Molecule Size Doesn’t Matter: The Case for Harmonizing Antitrust Treatment of Pay-for-Delay Agreements,” Columbia Journal of Law and Social Problems, http://blogs2.law.columbia.edu/jlsp/wp-content/uploads/sites/8/2021/02/Volume-54-Marmaro.pdf

More specifically, this Note will discuss reverse payments, also known as “pay-for-delay” agreements, that occur when a branded drug manufacturer pays a rival drug company to delay its launch of a drug that will compete with the brand.8

These reverse payment agreements are executed in the context of settling patent infringement litigation in which the patent-holding brand company pays its rivals to agree not to compete for a period of time when the rival otherwise likely would have entered the market.9

“Payment” takes a variety of forms but is typically a share of the extra monopoly profits that the brand expects to secure from the delayed competition — an amount that may exceed the rival’s expected profits from competing on the market.11 These “pay-for-delay” agreements are known as “reverse payments” because of the inverted direction of compensation where a plaintiff, the brand-name patent holder who commenced the infringement suit, pays an amount to the defendant, the rival accused of allegedly infringing the brand’s patents, to settle the suit it commenced.12

It was not until 2013 that the U.S. Supreme Court addressed the legality and antitrust consequences of these agreements in FTC v. Actavis.

The Court held that these pay-for-delay agreements could have anticompetitive effects and were not shielded by patent law from antitrust scrutiny or justified by public policy favoring settlements.14 Furthermore, **it held the judicial standard of review for reverse payment agreements under federal antitrust law was the rule of reason**.15

It rejected the Federal Trade Commission’s (FTC) argument that these settlements should be presumptively illegal or per se illegal because the Court could not conclude that these agreements would almost always be anticompetitive, noting that some might be justified for procompetitive reasons.16

Since Actavis, the FTC has found the number of patent settlement agreements that on their face show pay-for-delay is decreasing, i.e., explicit cash settlement payments, but that the number of settlements with restrictions on generic entry that include other alleged forms of compensation have more than doubled from 2015 to 2016.17

#### Prices are too high to attribute to R&D needs

Lexchin 20 – MSc, MD

Joel Lexchin, Md1,2, 1-17-2020, "Affordable Biologics for All," JAMA Network, Original Investigation Out-of-Pocket Spending for Rheumatoid Arthritis Biologics in Medicare Part D Alexandra Erath, BA; Stacie B. Dusetzina, PhD, https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2764808

Although biologics only account for 2% of all prescriptions written in the US, they are responsible for $120 billion or 37% of net drug spending and, since 2014, for 93% of the overall growth in total spending.3 None of the usual explanations for the price of biologics stand up to scrutiny. Research and development costs for biologics are higher than those for small molecule drugs ($391 million vs $309 million) but not enough to account for their prices. Furthermore, there is no difference in the median premarket development time between biologics and small molecule drugs that would justify the 12 years of data exclusivity that the former group received in 2010. Interviews with 4 leaders in biologics development revealed that, contrary to frequent claims, development costs were not the reason for the prices of the multiple sclerosis drugs. Instead, initial price decisions were based on the price of existing competitors and revenue maximization and corporate growth were the reasons for price escalations.4

Use of biosimilars, which have a similar role for biologics as generics do for small molecule drugs, could be associated with lower spending, but by the end of 2019, only 11 of the 26 biosimilars that were approved by the US Food and Drug Administration were actually marketed, and even when biosimilars are available, market penetration is often very poor. This situation is in contrast to the one in Europe, where by May 2018, 39 biosimilars had been launched; in some countries, biosimilars have completely captured a particular market.

One reason why biosimilars have not been successful in the US even after they have been marketed has been the message from drug companies, medical societies, and patient groups—with the latter 2 often having connections to companies—that it is potentially dangerous to switch patients from a reference biologic to a biosimilar. This message continues to have resonance despite a systematic review5 concluding that that this type of switching is not associated with increased risk of immunogenicity-related safety concerns or with diminished efficacy. A second reason for the low uptake may be the increasing trend for companies marketing reference biologics to employ nurse educators or ambassadors to assist patients in using complicated medications and helping them to resolve drug-related problems and with insurance paperwork. If physicians were to switch their patients to a biosimilar, that assistance would not be available.

Calls for lower prices for biologics (and other drugs) are typically met with the concern that innovation will suffer. However, only a small minority of new biologics represent significant therapeutic advances over existing products.6 Moreover, for over a decade, drug companies listed on the S&P 500 Index collectively have spent more of their revenue on dividends and share buybacks than they have on research and development.7 In 2015, of the top 100 pharmaceutical companies by sales, 64 spent twice as much on marketing and sales than on research and development, 58 spent 3 times as much, 43 spent 5 times as much, and 27 spent 10 times as much.

## Innovation Adv

No cards

## Bizcon DA

#### It’s not a big deal

Feldman 8/27 – Distinguished Professor of Law Chair & Director of the Center for Innovation, UC Hastings Law

Robin Feldman, Arthur J. Goldberg Distinguished Professor of Law, Albert Abramson ’54 Distinguished Professor of Law Chair, and Director of the Center for Innovation, The Price Tag of 'Pay-for-Delay', UC Hastings Research Paper Forthcoming, 27 Aug 2021, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3846484>

One could argue that presuming anticompetitiveness in the event of a settlement between brand and generic companies would disincentivize the ability of parties to enter into good faith settlements to avoid the costs of litigation.187 Litigating parties are generally encouraged to settle their differences, sparing the legal system the time and expense of a trial. A presumption, however, can be rebutted by appropriate evidence within the purview of the companies. It is far less drastic a test than certain other types of agreements between competitors, which are illegal per se under antitrust law, such as horizontal price-fixing, bid-rigging, and market-allocation schemes.188

#### Most of them are bad, but we don’t touch the good ones

Feldman 8/27 – Distinguished Professor of Law Chair & Director of the Center for Innovation, UC Hastings Law

Robin Feldman, Arthur J. Goldberg Distinguished Professor of Law, Albert Abramson ’54 Distinguished Professor of Law Chair, and Director of the Center for Innovation, The Price Tag of 'Pay-for-Delay', UC Hastings Research Paper Forthcoming, 27 Aug 2021, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3846484>

Pinning pay-for-delay reform squarely on an outright ban may not prove tenable, and other commentators have proposed intriguing alternatives. By one policy, for instance, if companies are unable to prove that their patent infringement settlement value was less than the cost of litigation and other services, then all that the generic company can receive is what it would be entitled to by a court ruling that a brand patent is invalid or not infringed.179

In other words, all the brand company can promise is what the court would give the generic company if the parties proceeded with the patent infringement litigation, and the generic won. No-authorized-generic clauses, among other creative anticompetitive ploys, would be presumed illegal by this framework. At the same time, it would permit patent settlements to remain where they are potentially procompetitive, eliminating unnecessary litigation between drug companies. Other prospective solutions seek to improve upon the fines used currently to disincentivize pay-for-delay conduct. As our analysis demonstrates, even companies fined by the FTC for pay-for-delay may profit handsomely from the practice.180 Considering the failure of fines to sufficiently discourage pay-for-delay, some scholars have advanced alternative punishments for cited drug companies. For instance, a first-filing generic company that agreed to postpone production in exchange for a no-authorized-generic clause could be stripped of its 180-day exclusivity period.181 Additional legislation might stipulate that brand companies forfeit the chance to earn additional non-patent regulatory exclusivities for a drug whose monopoly period they paid off competitors to extend. This way, instead of simply reducing the profits of offending drug-makers, the repercussions of pay-for-delay redound as social benefit.

Despite potential remedy-related reforms, however, the most important change needed pertains to evaluating the anticompetitive nature of the agreement itself. The landmark decision in Actavis expressed optimism that courts would be able to manage the analysis in a more structured manner. That reality has not materialized. To resolve the problem, one should return to the basic notion that agreements between competitors are strongly disfavored under antitrust law.

Given that agreements between competitors are disfavored, the test for agreements between brands and generics in the context of Hatch-Waxman litigation should begin with a presumption that the agreement is anticompetitive. This approach respects the essential design of the Hatch-Waxman system to ensure rapid entry of generic drugs, in part, by providing an incentive for generic drug companies to challenge patents that are invalid or invalidly applied.182 Only when the public interest is clearly served should the presumption fall.

## Neolib K

#### U.S. is dematerializing resource usage – market forces incentivize a switch away from resource-intensive practices

-air pollution

-GHGs

-ag

-nitrogen, potassium, phosphorus

-wood

-metal

McAfee 20 – Principal research scientist at MIT and co-director of the MIT Initiative on the Digital Economy. Doctorate in Business Administration from the Harvard Business School.

Andrew McAfee, “Why Degrowth Is the Worst Idea on the Planet,” *Wired*, 6 October 2020, https://www.wired.com/story/opinion-why-degrowth-is-the-worst-idea-on-the-planet/.

Easing Pollution, Not Exporting It

In some important areas, however, a very different pattern emerged after 1970: Growth continued, but environmental harm decreased. This decoupling occurred first with pollution, and first in the rich world. In the US, for example, aggregate levels of six common air pollutants have declined by 77 percent, even as gross domestic product increased by 285 percent and population by 60 percent. In the UK, annual tonnage of particulate emissions dropped by more than 75 percent between 1970 and 2016, and of the main polluting chemicals by about 85 percent. Similar gains are common across the highest-income countries.

How were these reductions achieved? The two possibilities are cleanup and offshoring. Either rich countries figured out how to reduce their “air pollution per dollar” so much that overall pollution went down even as their economies grew, or they sent so much of their dirty production overseas that the air at home got cleaner. The first of these paths reduces the total burden of human-caused pollution; the second just rearranges it.

The evidence is overwhelming that rich countries cleaned up their air pollution much more than they outsourced it. For one, a great deal of air pollution comes from highway vehicles and power plants, and rich countries haven’t outsourced driving and generating electricity to low-income ones. In fact, high-income countries haven't even offshored most of their industry. The US and UK both manufacture more than they did 50 years ago (at least until the Covid-19 pandemic sharply reduced output), and Germany has been a net exporter since 2000 while continuing to drive down air pollution. The rest of the world has been exporting its manufacturing pollution to Germany (to use degrowthers’ phrasing), yet Germans are breathing cleaner air than they were 20 years ago.

Rich countries have reduced their air pollution not by embracing degrowth or offshoring, but instead by enacting and enforcing smart regulation. As economists Joseph Shapiro and Reed Walker concluded in a 2018 study about the US, “changes in environmental regulation, rather than changes in productivity and trade, account for most of the emissions reductions.” Research about the cleanup of US waters also concludes that well-designed and enforced regulations have successfully reduced pollution.

It is true that the US and other rich countries now import lots of products from China and other nations with higher pollution levels. But if there were no international trade at all, and rich countries had to rely exclusively on their domestic industries to make everything they consume, they’d still have much cleaner air and water than they did 50 years ago. As a 2004 Advances in Economic Analysis and Policy study summarized: “We find no evidence that domestic production of pollution-intensive goods in the US is being replaced by imports from overseas.”

The rich world’s success at decoupling growth from pollution is an inconvenient fact for degrowthers. Even more inconvenient is China's recent success at doing the same. China’s export-led, manufacturing-heavy economy has been growing at meteoric rates, but between 2013 and 2017 air pollution in densely populated areas declined by more than 30 percent. Here again the government mandated and monitored pollution declines and so decoupled growth from an important category of environmental harm.

Prosperity Bends the Curve

China's progress with air pollution is heartening, but it's not surprising to most economists. It's a clear example of the environmental Kuznets curve (EKC) in action. Named for the economist Simon Kuznets, EKC posits a relationship between a country's affluence and the condition of its environment. As GDP per capita rises from an initial low level, so too does environmental damage; but as affluence continues to increase, the harms level off and then start to decline. The EKC is clearly visible in the pollution histories of today's rich countries, and it's now taking shape in China and elsewhere.

Also consider air pollution death rates around the world. As the invaluable website Our World in Data puts it, “Rates have typically fallen across high-income countries: almost everywhere in Europe, but also in Canada, the United States, Australia, New Zealand, Japan, Israel and South Korea and other countries. But rates have also fallen across upper-middle income countries too, including China and Brazil. In low and lower-middle income countries, rates have increased over this period.”

The EKC is a direct refutation of a core idea of degrowth: that environmental harms must always rise as populations and economies do. It's not surprising that today's degrowth advocates rarely discuss the large reductions in air and water pollution that have accompanied higher prosperity in so many places around the world. Instead, degrowthers now focus heavily on one kind of pollution: greenhouse gas emissions.

The claims made are familiar ones: that any apparent reductions in greenhouse gas emissions in rich countries are due to offshoring rather than actual decarbonization. Thanks to the Global Carbon Project, we can see if this is the case. GCP has calculated “consumption-based emissions” for many countries going back to 1990, taking into account imports and exports, yielding the greenhouse gas emissions embodied in all the goods and services consumed in each country each year.

For several of the world's richest countries, including Germany, Italy, France, the UK, and the US, graphs of consumption-based carbon emissions follow the familiar EKC. The US, for example, has 22reduced its total (not per capita) consumption-based CO2 emissions by more than 13 percent since 2007.

These reductions are not mainly due to enhanced regulation. Instead, they've come about because of a combination of tech progress and market forces. Solar and wind power have become much cheaper in recent years and have displaced coal for electricity generation. Natural gas, which when burned emits fewer greenhouse gases per unit of energy than does coal (even after taking methane leakage into account), has also become much cheaper and more abundant in the US as a result of the fracking revolution.

To ensure that these greenhouse gas declines continue to spread and accelerate, we should apply the lessons we've learned from previous pollution reduction success. In particular, we should make it expensive to emit carbon, then watch the emitters work hard to reduce this expense. The best way to do this is with a carbon dividend, which is a tax on carbon emissions where the revenues are not kept by the government but instead are rebated to people as a dividend. William Nordhaus won the 2018 Nobel Prize in economics in part for his work on the carbon dividend, and an open letter advocating its implementation in the US has been signed by more than 3,500 economists. It's an idea whose time has come.

How We Learned to Lighten Up

Tech progress and price pressure aren't just leading to the demise of coal. They're also causing us to exploit the planet less in many other important ways, even as growth continues. In other words, EKCs are not just about pollution any more.

A good place to start examining this broad phenomenon of getting more from less is US agriculture, where we have decades of data on both outputs—crop tonnage—and the key inputs of cropland, water, and fertilizer. Domestic crop tonnage has risen steadily over the years and in 2015 was more than 55 percent higher than in 1980. Over that same period, though, total water used for irrigation declined by 18 percent, total cropland by more than 7 percent. That is, over that 35-year period, US crop agriculture increased its output by more than half while giving an area of land larger than Indiana back to nature and eventually using a Lake Champlain less water each year. This was not accomplished by increasing fertilizer use; total US fertilizer consumption in 2014 (the most recent year for which data are available) was within 2 percent of its 1980 level.

The three main fertilizers of nitrogen, potassium, and phosphorus (NKP) are an interesting case study. Their total US consumption (once other uses in addition to agriculture are taken into account) has declined by 23 percent since 1980, according to the United States Geological Survey. Yet some within the degrowth movement find ways to argue that these declines are also an illusion. These materials thus serve to clearly illustrate the differences in methodology, evidence, and worldview between ecomodernists like myself and degrowthers.

The USGS tracks annual domestic production, imports, and exports of NKP and uses these figures to calculate “apparent consumption” each year. Consumption of each of the three resources has declined by 16 percent or more from their peaks, which occurred no later than 1998. This seems like a clear and convincing example of dematerialization—getting more output from fewer material inputs.

As I argue in my book More From Less, dematerialization doesn’t happen for any complicated or idiosyncratic reason. It happens because resources cost money that companies would rather not spend, and tech progress keeps opening up new ways to produce more output (like crops) while spending less on material inputs (like fertilizers). Modern digital technologies are so good at helping producers get more from less that they're now allowing the US and other technologically sophisticated countries to use less in total of important materials like NKP.

Forest products provide another clear example of dematerialization in the US. Total annual domestic consumption of paper and paperboard peaked in 1999, and of timber in 2002. Both totals have since declined by more than 20 percent. Could these be mirages caused by offshoring that’s not properly captured? That’s highly unlikely, as the country is now onshoring more than it’s offshoring. The US has been a net exporter of forest products since 2009 and is now the world’s largest exporter of these materials.

Is the US economy also dematerializing its use of metals? Probably, but it’s hard to say for sure. The USGS tallies do show dematerialization in steel, aluminum, copper, and other important metals. But these figures don’t include the metals contained in imports of finished goods like cars and computers. America is a net importer of manufactured goods, so it could be that we’re using more metal year after year, but that much of this consumption is “hidden” from official statistics because of imports of heavy, complex products. However, my estimates indicate that this is extremely unlikely and that the country is in fact now reducing its overall consumption of metals.

#### The alt causes violent transition wars that dooms any chance of solvency

Wainer and Bienenfeld 19 – Kit Wainer is a member of the United Federation of Teachers and is active in the opposition caucus, the Movement of Rank and File Educators. Mel Bienenfeld is a longtime socialist activist and recently retired president of a higher-education teachers local union.

(Kate Griffiths, 7-21-2019, "Problems with an Electoral Road to Socialism in the United States," New Politics, <https://newpol.org/issue_post/problems-with-an-electoral-road-to-socialism-in-the-united-states/>)

Governors control the National Guard and state police. Local governments control local police forces, although the Constitution allows states full discretion to limit the autonomy of localities. While the president may federalize the guard for a period of time, **it is easy to imagine guard generals refusing to obey presidential authority when asked to enforce decisions the courts have ruled unconstitutional**. Of course a president can send the army into states, thus violating the Posse Comitatus Act of 1878, but it is similarly easy to envision generals refusing to execute orders on solid constitutional grounds, or the officer corps dividing amongst itself, in that scenario. In short **there would be no way** of overcoming state recalcitrance **to implement socialist legislation without destroying the legitimacy of the constitutional order.**

In fact, not only can **state authorities** resist**, they can also repress**. Partial socialist victories in the electoral arena would inevitably yield a **fractured state,** with critical parts still in the hands of pro-capitalist officials. The latter would be constitutionally authorized to arrest and terrorize mass movement activists who threaten their rule. They have, after all, done so numerous times in U.S. history. Even today, federal and state authorities are far more likely to arrest someone for the crime of being an immigrant or person of color than for marching with an armed fascist gang threatening the annihilation of the Jews. **Mass movements that are not prepared to physically confront and defeat armed authorities would stand little chance.**

Bureaucracy, the Regulatory Process, and Unelected Authority

While the legislative and executive branches make law and the judicial branch reviews laws, unelected regulatory bodies determine how they are actually interpreted and implemented. Currently, these bodies are staffed by skilled bureaucrats through a combination of patronage, political favoritism, and civil service promotion. Regulatory agencies are typically staffed by and managed by the industries they are designed to regulate. Even lower-level bureaucratic posts often enable employees to audition for far more lucrative private-sector employment. This creates enormous incentives to defer to corporate prerogative, even if the elected authorities have a different agenda. And these regulatory agencies decide what the law means in day-to-day situations that lawmakers can never predict when writing bills.

Bureaucratic and regulatory agencies govern at the local, state, and federal levels. They set zoning policies that largely determine whether housing is affordable and safe for working-class habitation. Their rules indirectly affect how much of their lives working people spend commuting to and from work because where tall buildings are built often determines which neighborhoods are clogged with traffic. As with regulatory agencies, building departments are typically instruments of real estate developers, even if they do protect occupants’ safety to some extent. Unelected bodies, such as public authorities in New York and New Jersey, typically control public transportation and critical infrastructure, and an army of bureaucrats runs the education systems all over the United States. All of these bureaucratic agencies are susceptible to intense pressure from highly paid lobbyists. Conditions of housing, transportation, public health, and education are some of the most powerful forces shaping workers’ daily lives, and it is difficult to imagine how working people would maintain confidence in and enthusiasm for a workers’ government that could not demonstrably improve those aspects of their lives. It is also difficult to see how a government could make significant headway in those areas without breaking apart the relevant bureaucracies and busting up the private-sector lobbying firms that influence them. In short, the very precondition for sustained radical electoral success would require the demolition of most regulatory organizations and their replacement with democratic and accountable bodies.

Unelected bureaucracy also reigns in the area of foreign policy. While major decisions such as going to or avoiding war, or negotiating trade agreements, are in the hands of elected officials, many of the day-to-day details of foreign relations are decided and implemented by career officials who are similarly subjected to substantial corporate lobbying and use foreign service careers as springboards into highly paid private-sector employment. The State Department routinely approves international trade licenses, contacts foreign bureaucrats on behalf of U.S. firms, and utilizes personal relationships with international counterparts to smooth those processes. In a world in which several major capitalist states still rule and the U.S. state is fractured, these bureaucrats could become key links between global and domestic counter-revolution.

While bureaucracy takes different forms in different countries, career civil servants staff the state apparatus in most capitalist states today. They tend to be ideologically committed to the survival of the state. Their career ambitions also depend on the patronage of higher ups in each department and alliances with private capitalists who hold the key to their promotion both inside and outside the public sector.

Can bureaucracy be subordinated to a workers’ government? Yes. In fact the soviet state had no choice but to rely on sectors of the tsarist bureaucracy both to win the civil war and for government administration in the 1920s. In a scenario in which the capitalist class has been fully defeated, disempowered bureaucrats might well decide, one by one, that cooperation with the new workers’ regime represents the only hope for maintaining their careers. However, the “democratic,” or, more accurately, the electoral, road to socialism leads inevitably along a different path. It does not deliver a sudden, decisive defeat to the state or to the ruling class. Quite the contrary, it leads to what might be termed “dual power,” in which socialists rule over substantial sectors of the government but capitalist politicians dominate others and much of the capitalist state bureaucracy remains intact. The police, fearing that their careers are in jeopardy, would likely continue to repress mass movements and fight at all costs to preserve their positions. These institutions of the capitalist state would also have powerful allies in the judiciary, not to mention support from capitalists around the world. Under that scenario it is highly unlikely that the administrative bureaucracies would place themselves at the service of workers’ regimes who have far less to offer them and from whom they have far less to fear.

Throughout U.S. history the labor movement and other **radical reform movements have had to contend with ferocious and violent counterattacks**. After World War I, socialists, anarchists, and labor activists of various stripes faced intense state repression. The **survival o**f U.S. **capitalism was not in question** at this time. **Yet, the federal government responded with mass arrests**, deportations, frame-ups, **and violence.** After World War II, federal and state governments effectively repressed the radical wings of the labor movement with witch hunts and blacklists, while tolerating rampant racist violence. It is important to note that **the Communist Party** **not only**, at this point, **could not have threatened revolution, its orientation was heavily electoral**. But the mere prospect of a more militant labor movement and a radical electoral alternative was something both Democrats and Republicans were determined to repress. In the 1960s the FBI’s Cointelpro program targeted movement activists and even murdered Black Panther leader Fred Hampton.

A workers movement in the United States must prepare for severe state repression or it will succumb to it. At times this may involve operating clandestinely. It may also require active self-defense against legal authorities or fascist paramilitaries. Most importantly, preparation means educating a generation of socialist and labor activists about how and why the state protects capitalist profitability both through its own constitutional mechanisms and often with repressive measures that violate its own legality.