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### Advantage

#### Resolved: The United States Federal Government should substantially increase prohibitions on anticompetitive business practices by energy companies by

#### expanding the scope of its core antitrust laws to account for “total welfare”

#### establishing a “green antitrust policy” by establishing an upstream carbon fee on greenhouse gas emissions, with all revenue reimbursed as dividends to the population, that rises with the federal estimates of the Social Cost of Carbon.

This means the tax would start at $51, the SCC of the Biden admin and raise at 1-2%/year

#### The consumer welfare relies on a “market failure” approach that is impossible to prove and fails to address systemic risks like climate change. Only expanding the scope of the CWS to account for total welfare can address systematic failure.

Miazad 21 (Amelia Miazad is Founding Director and Senior Research Fellow of the Business in Society Institute at Berkeley Law., “PROSOCIAL ANTITRUST”, Prosocial Antitrust (March 11, 2021). Available at SSRN: https://ssrn.com/abstract=3802194 or http://dx.doi.org/10.2139/ssrn.3802194)

While courts routinely dismiss noneconomic or “non-welfare” justifications, precisely what procompetitive reasons come into play is, as Justice Stevens famously stated, “an absolute mystery”.242 As Professor John Newman points out, the “relevant case law reveals multiple competing approaches and seemingly irreconcilable opinions” on what constitutes “beneficial”.243 After all, whether a particular activity is beneficial necessarily begs the question— beneficial to what end? Professor Newman traces this confusion to the use of three different tests by courts:

Under the “market failure” approach, a valid justification is present if—and only if—the challenged restraint alleviates a market failure. Alternatively, the “competitive process” approach attempts to condemn restraints that harm (and bless restraints that benefit) “competition” itself or the so-called “competitive process”. Lastly, the “type of effect” approach appears to offer a shortcut: simply identify the effects of the challenged restraint, then ascertain whether they align with a pre-approved typology of virtuous marketplace effects (e.g., higher output, lower prices, etc.).244

This Article agrees with Professor Newman’s doctrinal, normative, and practical arguments in favor of the market failure test.245 Most contemporary courts also hold that “alleviating a market failure is an acceptable procompetitive justification.”246 But the market failure test is fundamentally at odds with the market reality of increasing universal ownership. Two limitations explain its inability to account for systematic and portfolio-wide risks. First, the market failure test relies on the prevailing consumer welfare standard.247 That generally means that a particular restraint of trade must alleviate a market failure by increasing consumer surplus in order for courts to deem it a valid procompetitive justification.248 By fastening market failure to consumer welfare, the market failure test becomes indistinguishable from the “type of effect” approach, which also focuses on measurable impacts on consumers including output and price. Second, the market failure test assumes the perspective of a single market, preventing it from capturing portfolio-wide systemic risks like climate change.

To be clear, this Article is not arguing that antitrust law should abandon the consumer welfare standard and expand its purview to encompass noneconomic impacts. Rather, it argues that the consumer welfare standard is too narrow to account for economic impacts on a portfolio-wide level. The total welfare standard is most closely aligned with the market reality of universal ownership, although it has been largely abandoned by courts.249 It seeks to maximize the total surplus of all participants in a market, including consumers and producers. The total welfare test’s aggregate value approach is more closely aligned with universal ownership, but it also analyzes an individual market—as opposed to market-wide impacts— because a so-called “general equilibrium analysis” is impractical. Developing a standard that aligns with the market reality of concentrated ownership is beyond the scope of this Article. This Article does argue, however, that the current consumer welfare standard impedes collaboration to address systematic economic risks, as the next Part explores

#### Climate change is a system disruptor and a risk amplifier---only mitigation prevents biodiversity loss, marine ecosystem collapse, resource wars, global food scarcity, and extreme weather events. Uniquely—has disparate impacts.

Pachauri & Meyer 15 (Rajendra K. Pachauri Chairman of the IPCC, Leo Meyer Head, Technical Support Unit IPCC were the editors for this IPCC report, “Climate Change 2014 Synthesis Report” <http://epic.awi.de/37530/1/IPCC_AR5_SYR_Final.pdf> IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp)

SPM 2.3 Future risks and impacts caused by a changing climate

Climate change will amplify existing risks and create new risks for natural and human systems. Risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development. {2.3}

Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and natural systems, including their ability to adapt. Rising rates and magnitudes of warming and other changes in the climate system, accompanied by ocean acidification, increase the risk of severe, pervasive and in some cases irreversible detrimental impacts. Some risks are particularly relevant for individual regions (Figure SPM.8), while others are global. The overall risks of future climate change impacts can be reduced by limiting the rate and magnitude of climate change, including ocean acidification. The precise levels of climate change sufficient to trigger abrupt and irreversible change remain uncertain, but the risk associated with crossing such thresholds increases with rising temperature (medium confidence). For risk assessment, it is important to evaluate the widest possible range of impacts, including low-probability outcomes with large consequences. {1.5, 2.3, 2.4, 3.3, Box Introduction.1, Box 2.3, Box 2.4}

A large fraction of species faces increased extinction risk due to climate change during and beyond the 21st century, especially as climate change interacts with other stressors (high confidence). Most plant species cannot naturally shift their geographical ranges sufficiently fast to keep up with current and high projected rates of climate change in most landscapes; most small mammals and freshwater molluscs will not be able to keep up at the rates projected under RCP4.5 and above in flat landscapes in this century (high confidence). Future risk is indicated to be high by the observation that natural global climate change at rates lower than current anthropogenic climate change caused significant ecosystem shifts and species extinctions during the past millions of years. Marine organisms will face progressively lower oxygen levels and high rates and magnitudes of ocean acidification (high confidence), with associated risks exacerbated by rising ocean temperature extremes (medium confidence). Coral reefs and polar ecosystems are highly vulnerable. Coastal systems and low-lying areas are at risk from sea level rise, which will continue for centuries even if the global mean temperature is stabilized (high confidence). {2.3, 2.4, Figure 2.5}

Climate change is projected to undermine food security (Figure SPM.9). Due to projected climate change by the mid-21st century and beyond, global marine species redistribution and marine biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem services (high confidence). For wheat, rice and maize in tropical and temperate regions, climate change without adaptation is projected to negatively impact production for local temperature increases of 2°C or more above late 20th century levels, although individual locations may benefit (medium confidence). Global temperature increases of ~4°C or more 13 above late 20th century levels, combined with increasing food demand, would pose large risks to food security globally (high confidence). Climate change is projected to reduce renewable surface water and groundwater resources in most dry subtropical regions (robust evidence, high agreement), intensifying competition for water among sectors (limited evidence, medium agreement). {2.3.1, 2.3.2}

Until mid-century, projected climate change will impact human health mainly by exacerbating health problems that already exist (very high confidence). Throughout the 21st century, climate change is expected to lead to increases in ill-health in many regions and especially in developing countries with low income, as compared to a baseline without climate change (high confidence). By 2100 for RCP8.5, the combination of high temperature and humidity in some areas for parts of the year is expected to compromise common human activities, including growing food and working outdoors (high confidence). {2.3.2}

In urban areas climate change is projected to increase risks for people, assets, economies and ecosystems, including risks from heat stress, storms and extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, water scarcity, sea level rise and storm surges (very high confidence). These risks are amplified for those lacking essential infrastructure and services or living in exposed areas. {2.3.2}

Rural areas are expected to experience major impacts on water availability and supply, food security, infrastructure and agricultural incomes, including shifts in the production areas of food and non-food crops around the world (high confidence). {2.3.2}

Aggregate economic losses accelerate with increasing temperature (limited evidence, high agreement), but global economic impacts from climate change are currently difficult to estimate. From a poverty perspective, climate change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger (medium confidence). International dimensions such as trade and relations among states are also important for understanding the risks of climate change at regional scales. {2.3.2}

Climate change is projected to increase displacement of people (medium evidence, high agreement). Populations that lack the resources for planned migration experience higher exposure to extreme weather events, particularly in developing countries with low income. Climate change can indirectly increase risks of violent conflicts by amplifying well-documented drivers of these conflicts such as poverty and economic shocks (medium confidence). {2.3.2}

#### Climate change is a regressive social inequity

Levy & Patz 15 (Barry S.LevyMD, MPH Jonathan A.PatzMD, MPH, “Climate Change, Human Rights, and Social Justice”, Annals of Global Health Volume 81, Issue 3, May–June 2015, Pages 310-322)

The environmental and health consequences of climate change, which disproportionately affect low-income countries and poor people in high-income countries, profoundly affect human rights and social justice. Environmental consequences include increased temperature, excess precipitation in some areas and droughts in others, extreme weather events, and increased sea level. These consequences adversely affect agricultural production, access to safe water, and worker productivity, and, by inundating land or making land uninhabitable and uncultivatable, will force many people to become environmental refugees. Adverse health effects caused by climate change include heat-related disorders, vector-borne diseases, foodborne and waterborne diseases, respiratory and allergic disorders, malnutrition, collective violence, and mental health problems.

These environmental and health consequences threaten civil and political rights and economic, social, and cultural rights, including rights to life, access to safe food and water, health, security, shelter, and culture. On a national or local level, those people who are most vulnerable to the adverse environmental and health consequences of climate change include poor people, members of minority groups, women, children, older people, people with chronic diseases and disabilities, those residing in areas with a high prevalence of climate-related diseases, and workers exposed to extreme heat or increased weather variability. On a global level, there is much inequity, with low-income countries, which produce the least greenhouse gases (GHGs), being more adversely affected by climate change than high-income countries, which produce substantially higher amounts of GHGs yet are less immediately affected. In addition, low-income countries have far less capability to adapt to climate change than high-income countries.

#### Mitigation is the silver bullet increasing levels of climate change exponentially increase its negative consequences

Letzter 19 (Rafi, Staff writer for Live Science citing – Katharine Mach, a climate scientist at the University of Miami and one of several lead authors of the IPCC report., Lini Wollenberg, a University of Vermont climate researcher and leader of the CGIAR Research Program on Climate Change, Agriculture and Food Security, Colin Carlson, an ecologist at Georgetown University who studies how climate change influences infectious diseases, 9/26/19, “Are We Really Running Out of Time to Stop Climate Change?”, https://www.livescience.com/12-years-to-stop-climate-change.html)

But ultimately, all the researchers Live Science contacted said these problems become less catastrophic with less warming. Holding the world to a 1.5-C warming increase by the end of the century creates much more manageable short- and long-term problems than holding it to 2 C of warming, which is much less harmful to Earth than 3 C, which is much more survivable than 4 C, which is still less catastrophic than 6 C … and so on. None of those possible futures necessarily leads to a charred, lifeless global desert in our lifetimes. But each increase is almost unimaginably more dire for life on this planet than the one preceding it.

"It's always worth it to prevent more warming," Mach said.

With regard to the spread of mosquito-borne diseases, Carlson said, "We can stop it. Mitigating climate change is truly the silver bullet. Sometimes it is as simple as, 'If we stop climate change, we can stop a lot of the bad health impacts that are coming.'" (Though the devil is in the details, he added. The level of disease reduction will depend on how fast the carbon-mitigation project moves, and its effects won't be felt immediately or equally everywhere.)

The science points relentlessly to one reality: The best way to deal with climate change is to start cutting emissions now. It's easier to stop warming by keeping CO2 in the ground now than it is to pull carbon out of the air later. And mitigation makes adaptation much more effective.

#### AND--short term mitigation matters--the impact is exponential and increasing.

Desjardins 13 – member of Concordia university Media Relations Department, academic writer, citing Damon Matthews; associate professor of the Department of Geography, Planning and Environment at Concordia University, PhD, Member of the Global Environmental and Climate Change Center

(Cléa, “Global Warming: Irreversible but Not Inevitable,” http://www.concordia.ca/now/what-we-do/research/20130402/global-warming-irreversible-but-not-inevitable.php)

Carbon dioxide emission cuts will immediately affect the rate of future global warming Concordia and MIT researchers show Montreal, April 2, 2013 – There is a persistent misconception among both scientists and the public that there is a delay between emissions of carbon dioxide (CO2) and the climate’s response to those emissions. This misconception has led policy makers to argue that CO2 emission cuts implemented now will not affect the climate system for many decades. This erroneous line of argument makes the climate problem seem more intractable than it actually is, say Concordia University’s Damon Matthews and MIT’s Susan Solomon in a recent Science article. The researchers show that immediate decreases in CO2 emissions would in fact result in an immediate decrease in the rate of climate warming. Explains Matthews, professor in the Department of Geography, Planning and Environment, “If we can successfully decrease CO2 emissions in the near future, this change will be felt by the climate system when the emissions reductions are implemented – not in several decades." “The potential for a quick climate response to prompt cuts in CO2 emissions opens up the possibility that the climate benefits of emissions reductions would occur on the same timescale as the political decisions themselves.” In their paper, Matthews and Solomon, Ellen Swallow Richards professor of Atmospheric Chemistry and Climate Science, show that the onus for slowing the rate of global warming falls squarely on current efforts at reducing CO2 emissions, and the resulting future emissions that we produce. This means that there are critical implications for the equity of carbon emission choices currently being discussed internationally. Total emissions from developing countries may soon exceed those from developed nations. But developed countries are expected to maintain a far higher per-capita contribution to present and possible future warming. “This disparity clarifies the urgency for low-carbon technology investment and diffusion to enable developing countries to continue to develop,” says Matthews. “Emission cuts made now will have an immediate effect on the rate of global warming,” he asserts. “I see more hope for averting difficult-to-avoid negative impacts by accelerating advances in technology development and diffusion, than for averting climate system changes that are already inevitable. Given the enormous scope and complexity of the climate mitigation challenge, clarifying these points of hope is critical to motivate change.”

#### Antitrust is historically a weapon of the elite, but it can be revitalized for public goods like climate change

V. Sodano 2010. University of Naples Federico II, Department of Agricultural Economics. “Food system and climate change: the false premises of antitrust Policy”

Introduction

According to recent estimates (IAASTD, 2008), the global food system is currently accountable for at least 30% of the global GHG emissions that cause climate change. Considering also emissions by indirect activities associated with food production and distribution, such as home storage and refrigerators, waste disposal, transportation by final consumers and so on, this estimate may rise dramatically to as high as nearly 50% of total emissions (Grain, 2009). Agribusiness corporations, backing a model of food production and distribution that functions by converting oil into food, are largely responsible for these huge emissions. Influencing the behaviour of food TNCs in such a way as to shift towards a more sustainable food model may greatly contribute to tackling global warming. Actions to induce food corporations to assume a more sustainable form of conduct come from both the private and the public sector. On the private sector side initiatives come from consumers (individuals and consumer associations), environmental associations and non governmental organizations. On the public sector side, there are at least three kinds of intervention: (1) direct regulation, based on a command-and-control approach; (2) ‘soft regulation’, including self-regulation, use of incentives, awards and accreditation systems, market-based initiatives, disclosure obligations and educational campaigns; (3) definitions of duties of corporations, through corporate law and competition policy. The paper stresses that, given that **reducing GHG emissions is comparable to a public good**, only state intervention may be expected to be effective. Moreover, given that corporations cannot be granted the same moral status as natural persons, even soft regulation, which requires some form of corporate social responsibility and therefore of corporate morality, cannot be effective. With regards to state intervention the paper analyzes the role of **competition policy**, showing how it **can help in fighting global warming, provided that it overcomes** the over thirty year lasting dominance of the ‘Chicago paradigm’. Global warming mitigation: the role of public and private sector It is a matter of fact that induced climate change is representative of a tragedy of the commons, a typical collective action problem. Maintaining a stable climate has the structure of a public good exhibiting both the property of non excludability and non rivalry. The free riding problem, i.e. the fact that non contributors can benefit from others’ GHG reductions without taking on costs themselves, prevents private rational actors from engaging in mitigation efforts. Beyond being a public good, the protection of a stable climate that fits human biological and economic needs, can be considered to be a human right. In particular, it is of the kind of second generation human rights, i.e. economic and social rights, grounded in the notion that government has affirmative obligations to protect individuals from deprivation of the basic material necessities of life. In the case of public goods, economic and social theories based on rational choice models hold that the market (i.e. the private sector) fails to supply them. Therefore**,** the only effective provider is the state, as the latter has the precise political mandate to accommodate for general public welfare against scattered private interests. With regards to human rights the general view is that the state has the ultimate duty to uphold them. The state can intervene either directly or indirectly. Direct interventions include: public investments in global warming mitigation; setting compulsory standards in defence of low emission production and consumption activities; imposing human rights duties on corporations for climate change and environmental harm; implementing tort liability laws that make private actors pay for damage to climate and environment. Indirect interventions include: market based incentives aimed at promoting private climate friendly behaviour; embracing a voluntary corporate social responsibility (CSR) approach that shifts the burden of public interest onto corporations, which are deemed to possess other-regarding preferences and moral values. In this paper it is claimed that only direct intervention can be effective because, in the case of market-based instruments, it may apply the same sources of market failure that the intervention seeks to correct. The voluntary CSR approach is not viable because it hinges on the false premise that corporations have the same moral status as natural persons. The moral status of corporations endorsed by scholars like French (French, 1984) is to be rejected when the three necessary conditions for moral agency are examined: the ability to intend an action; the ability to perform an action; the ability to autonomously choose an intentional action. In the case of conglomerate collectives, such as corporations, these conditions are not fulfilled (Ronnegard, 2006: 82) and therefore they do not qualify as moral agents conceived as distinct from their members. Consequently, corporate moral responsibility attributions to collectives as distinct from their corporate members are illegitimate. Competition policy and climate change: the perspective of the Chicago school Given that only direct intervention by the state can assure adequate levels of global warming mitigation, the issue to be addressed is what role competition policy, among other forms of public intervention, can have in promoting corporate climate friendly behaviour. Competition policy originated in the US in 1890 with the Sherman Act. In the European Union the first antitrust regulation was set by the treaty of Rome in 1957. There are commonly described three historical phases of US antitrust law implementation, the first dating from 1890 to 1940, the second from 1945 to 1975 and the third from 1970 to the present (Viscusi et al., 2005). These three phases have been characterized by different economic and political theories incorporating two different ideologies of the market and the state: the evolutionary vision and the intentional vision (Page, 2008). The evolutionary vision views the market, framed solely by laws on property and contracts, as a mechanism for facilitating free exchanges among countless individuals in the pursuit of their best interests. In this vision, the market without state intervention naturally tends to a perfect competition ideal form destroying monopoly. On the contrary, the intentional vision views the market as a mechanism within which powerful interests can coerce consumers, labour and small businesses. In this vision markets tend toward monopoly unless government intervenes. The political economic theories corresponding to these two visions are the laissez-faire and the welfare state theories. The more the intentional vision is preferred to the evolutionary vision, the greater is the scope and the enforcement of antitrust law, and vice versa. The Sherman Act and the first period of antitrust law implementation embodied a compromise between the two visions. Notwithstanding the faith in the market, coherent with a strong liberal theory of the state, it was recognized as a matter of fact that monopolies and extreme economic power concentrations actually occur in the real world, producing social inequalities and injustice. At that time, state intervention was intended as a way to promote social justice and mediate among class conflicts in society. In the second period, the intentional view prevailed. Stemming from the disillusionment with markets during the Great Depression, the New Deal initiated the era of the welfare state based on the idea, supported by the growing economic literature on market failure, that economic state intervention should be legitimated by efficiency more than by equity concerns. The years between 1950 and 1970 are the golden era of antitrust legislation. The view of the markets taken up by the Court was that of recognition that coercion is the reality of market relationships. That is to say that in contrast with the previous ideological faith in the freedom of contracts, it was acknowledged that in a market transaction each party may be forced by the bargaining power of the other to accept unfair payments and obligations. Along with these views, the then prevailing theory of industrial organization, the structure-conduct-performance paradigm, facilitated a strong enforcement of antitrust legislation, holding that the mere measure of market share was sufficient to witness the presence of market power and monopoly inefficiencies. By the mid-1970s the evolutionary view completely dismissed the intentional view with the uprising of the so called Chicago school of antitrust. Chicago scholars applying neoclassical economics maintained that unfettered markets always lead to the best social outcomes. They pointed out that many of the practices that the courts had been viewing as harmful to competition and economic welfare, such as vertical restraints, may instead improve economic efficiency. Moreover they contested the structuralist view by claiming that a firm’s large market share may signal superior efficiency and that, consistently with the contestability theory (Baumol et al., 1982), freedom of entry is the only parameter to be scrutinized by antitrust laws. The general wisdom of the Chicago school was that state intervention and regulation is always harmful to the general interest. The Chicago ‘revolution’ has made competition policy a useless instrument for reaching goals of general interest such as providing public goods and promoting social justice. **In order to make competition policy a useful instrument against global warming,** it is necessary to reject some assumptions of the **Chicago antitrust school** and revive instead the conventional wisdom of the previous approaches in the wake of the intentional view. Among the assumptions to be scrutinized are those related to the three following issues: the theory of the firm; the nature of corporation; the goals of antitrust policy. The Chicago approach endorses a neoclassical theory of the firm where the firm is defined by a technical production function. The neoclassical theory of the firm, even in its modern neo-institutional version that accounts for transaction costs, explains a firm’s behaviour exclusively through the efficiency argument (exploitation of scale and scope economies). According to Chicago scholars, large size and above-normal returns must be due to efficiency differentials between firms. In their world made of equilibria and complete contracts, power-seeking behaviours are not conceivable (Raghuram and Zingales, 1998). Organizational, institutional and cognitive problems addressed by alternative theories (such as managerial, evolutionary, property rights, and behavioural theories) are dismissed as trivial. With regards to the legal debate on the nature of corporations (the latter defined as economic organizations whose members are granted limited liability by incorporation statutes), the Chicago view is consistent with the Nexus-of-Contracts theory, which contrasts the two alternative theories, namely the Legal Fiction and the Real Entity theories (Ronnegard, 2006). The Nexus-of-Contracts theory depicts the corporation as a web of contracts among all the members, which implies that it should not be regarded as a separate legal entity from the shareholders and that rights and duties can be defined only with regards to its members. Because the corporation is the result of a free contract, it is not dependent upon state grants and the same act of incorporation (granted by the state) is only a shorthand way of obtaining a contractual situation equivalent to that which could materialize through the private contracting of individuals. This conception of corporation is based on a libertarian ideology that says that corporations ought to merely be a commercial instrument for furthering the ends of the incorporating parties. Because corporations are not autonomous entities, any moral status (and therefore social responsibility) is ruled out, and because they are not a ‘creature’ of the state but the result of free contracts, they cannot be given rules and duties by the state. Therefore, one cannot expect them to provide public goods, such as climate stabilization, either voluntarily or compulsorily. Finally, as regards the goals of antitrust, the Chicago school states that antitrust policy ought to deal only with consumer losses due to high prices and/or output restrictions (Burns, 2006). Any equity concern about wealth distribution or unfair business practices is dismissed. For instance, in the Chicago view low final prices generally signal efficiency and practices like predatory pricing, reciprocal selling and cross-subsidization by conglomerates, unfair procurement contracts, and so on, are given little attention. All these three sets of assumptions entail that corporations pertain to the private more than to the public sphere and that antitrust pertains to the economic more than to the political sphere. In consequence, corporations should not be required to seek public goals (like providing public goods such as climate stabilization) and antitrust should not be required to seek goals like equity and justice (among which climate justice) but should only pursue economic efficiency in terms of low consumer prices. Competition policy and climate change: reversing the false premises of the Chicago school Stemming from the intentional vision, and in opposition to the evolutionary vision of the Chicago school, **the previous assumptions can be reversed in such a way as to justify a wider scope of antitrust policy** able to encompass the goal of climate stabilization. **The first** hypotheses to be reversed **are those** **concerning** the theory of **the firm** and the nature of the corporation. Firms cannot be described purely as technical production functions but as institutions (as economic theory had to acknowledge after the seminal work of Coase of 1937) that in some way substitute the market with power as means of resource allocation. Like states, firms exercise power in various forms, either inside their organizational boundaries or outside, over their competitors, their suppliers, their customers and the same state, through lobbying and bribing. Modern corporations are firms which, through the limited liability and other rights granted by the state (such as unlimited life span, unlimited asset acquisition, complete flexibility and mobility in business conduct, constitutional rights equal to those of natural persons), possess even superpowers (Nace, 2003; Korten, 2001), i.e. powers that cannot be enjoyed by a single individual and even less (because of territorial limits) by a single state. Because corporations are legal persons, with specific rights granted by the state, their nature cannot be described through the Nexus-of-Contract theory endorsed by the Chicago School. Their nature is better described by the Legal Fiction theory. The Legal Fiction theory essentially says that the corporation is merely an abstract creation of law which is granted to an association of individuals. The corporation is an artificial legal entity with an existence distinct from the incorporating members and exists entirely at the discretion of the state. The Legal Fiction theory differs from the Nexus-of-Contract theory which does not recognize the corporation distinct from its members and does affirm that it is independent from the power of the state because it is the result of free contracts by individuals. The Legal Fiction theory also differs from the Real Entity theory that considers corporations to be real, social organisms that possess a will and life of their own, with characteristics that are distinct from their individual members. Similar to the Nexus-of-Contracts theory, the Real Entity theory rejects the notion that corporation is a creation or grant from the state. However, differently from the Nexus-of-Contracts theory, the Real Entity theory claims that corporations ought to be granted legal rights as natural persons, rights which are owed to the corporation itself as a separate organism and are not derived from the rights of the individual members. The Legal Fiction theory is the only theory on the nature of corporations that is consistent with the advocacy of an antitrust regulation aimed at directly controlling and limiting the scope of activity of corporations. Because corporations are legal persons they can be given rights and duties. Nevertheless, because they are not natural persons, as instead envisaged by the Real Entity theory, they do not automatically enjoy basic rights (like the rights to free speech and due process of law) and do not possess moral responsibility. Because they are creatures of the state, they do not have their own life and in the divide between the private and public sphere they can be put somehow on the public side. Shifting from the idea of corporations as private efficiency-seeking organizations to the idea of corporations as social bodies enjoying large powers by virtue of state grants allows us to recognize that corporations may have an important role in addressing general social problems like global warming. Two arguments must be considered. First, because the power of corporations, including the power to affect global warming, depends on state grants, state regulations and obligations imposed on corporations in order to contribute to climate stabilization cannot be considered as illegitimate limitation to private freedom (as envisioned by Chicago scholars and neo-liberalists). Such regulations and obligations should instead be considered a due act of governance involving subjects (state regulators and corporations) that both pertain to the public sphere. Secondly, obligations imposed on corporations may be of the kind of human rights duties in case of environmental harm (Mabaquiao, 2002). It is worth noticing that rights are, after all, a response to the problem of power; in particular human rights are asserted in order to protect individuals from abuse of power by states. When one recognizes that many TNCs are really as powerful as or more powerful than many states, it does make sense to treat them as duty-holders, with the same obligations as the states to uphold human rights (Sinden, 2007). It is also important to notice that, because according to the Legal Fiction theory corporations do not possess moral responsibility, we cannot rely on CSR or voluntary codes of conducts as ways to protect the public from environmental harm and any power abuse made by corporations. The second set of hypotheses to be reversed is that concerning the definition of the scope of antitrust policy. It is general wisdom that antitrust policy should prevent excesses in exercise of power by large firms. The difference between the Chicago School and alternative approaches based on the intentional view is with the kind of power at stake. The Chicago school only considers market power in the form of high consumer prices. Alternative approaches instead look at different kinds of power: the bargaining power towards suppliers and employees; the power to choose technologies and products with different environmental impacts; the power to influence the political arena; the power to ‘capture’ regulators; the power to influence cultural and social values; and even more. If antitrust policy has to deal with all these kinds of power then it must widen its scope, adding to the economic goal efficiency, social and political goals, such as business fairness, distributive equity, environment protection, enforcement of human rights and so on. In this perspective, **antitrust policy should provide incentives** (either positive or negative) **for business firms to pursue public goals**, **such as global warming mitigation.** Conclusion The global food system is populated by many large TNCs (Etc.Group, 2008). These corporations have de facto become a key part of the fabric of global environmental governance. In their role as investors, polluters, experts, manufacturers, lobbyists and employers, corporations are central players in environmental issues. While necessary, voluntary action on the part of corporations and consumers is not alone sufficient to mitigate the worst effects of global warming. However, in the food sector, voluntary actions have been weak and sparse so far (Cogan, 2006). For instance in the Ceres report (CERES, 2008), which rates firms by their achievements in climate-related corporate governance, there are no companies from the food sector among the top ten firms. Among the bottom twelve there are instead three food giants: ConAgra, Bunge, and PepsiCo. Climate stabilization, as in general environmental protection, is a public good and as such is not provided by the private sector but needs public intervention. Among the many kinds of public intervention, the paper has focused on antitrust legislation. At its origin, antitrust legislation was conceived as a means to mitigate power wielded by large corporations in society. With the spread of neo-liberalism from the mid-1970s, the Chicago School radically changed the meaning and the scope of antitrust laws, with drastic changes in its enforcement (Mueller, 2009). The general claim of this paper is that it is necessary to go back to the original spirit of antitrust legislation which endorses an idea of corporation as an artificial powerful legal entity created by the state in order to serve the public interest. Only in this way can large firms, in particular TNCs in the food sector, **be expected to comply with environmental regulations and guarantee human rights.**

#### It is not enough to come up with answers to the issue of climate change without a possible path towards achieving sustainable development through economic and political means. Strength of integration of economics into climate policy is key.

Polasky 19 (Stephen Polasky, aThe Beijer Institute of Ecological Economics, Royal Swedish Academy of Sciences, SE-104 05 Stockholm, Sweden; Catherine L. Kling, Simon A. Levin, View ORCID ProfileStephen R. Carpenter, View ORCID ProfileGretchen C. Daily, Paul R. Ehrlich, Geoffrey M. Heal, and Jane Lubchenco)

The environmental sciences have documented large and worrisome changes in earth systems, from climate change and loss of biodiversity, to changes in hydrological and nutrient cycles and depletion of natural resources (1⇓⇓⇓⇓⇓⇓⇓⇓⇓⇓–12). These global environmental changes have potentially large negative consequences for future human well-being, and raise questions about whether global civilization is on a sustainable path or is “consuming too much” by depleting vital natural capital (13). The increased scale of economic activity and the consequent increasing impacts on a finite Earth arises from both major demographic changes—including population growth, shifts in age structure, urbanization, and spatial redistributions through migration (14⇓⇓⇓–18)—and rising per capita income and shifts in consumption patterns, such as increases in meat consumption with rising income (19, 20).

At the same time, many people are consuming too little. In 2015, ∼10% of the world’s population (736 million) lived in extreme poverty with incomes of less than $1.90 per day (21). In 2017, 821 million people were malnourished, an increase in the number reported malnourished compared with 2016 (22). There is an urgent need for further economic development to lift people out of poverty. In addition, rising inequality resulting in increasing polarization of society is itself a threat to achieving sustainable development. Eliminating poverty (goal 1) and hunger (goal 2), achieving gender equality (goal 6), and reducing inequality (goal 10) feature prominently in the United Nation’s Sustainable Development Goals (23). A recent special issue in PNAS on natural capital framed the challenge of sustainable development as one of developing “economic, social, and governance systems capable of ending poverty and achieving sustainable levels of population and consumption while securing the life-support systems underpinning current and future human well-being” (24).

The discipline of economics arguably should play a central role in meeting the sustainable development challenge. The core question at the heart of sustainable development is how to allocate the finite resources of the planet to meet “the needs of the present, without compromising the ability of future generations to meet their own needs” (25). A central focus of economics is how to allocate scarce resources to meet desired goals; indeed, a standard definition of economics is the study of allocation under scarcity. More specifically, economics studies the production, distribution, and consumption of goods and services, which are both a key driver of development (increasing standards of living through providing food, housing, and other basic human requirements) and a main cause of current changes in earth systems. Economics, combined with earth system sciences, is crucial for understanding both positive and negative impacts of alternatives and the trade-offs involved. Economics, combined with other social and behavioral sciences, is crucial for understanding how it might be possible to shift human behavior toward achieving sustainable development. Economics has well-developed fields in development economics, ecological economics, environmental economics, and natural resource economics, with large bodies of research relevant to the sustainable development challenge. The application of economic principles and empirical findings should be a central component in the quest to meet the aspirations of humanity for a good life given the finite resources of the earth.

Indeed, an extensive body of work by economists provides key insights into aspects of sustainable development. At its best, this work integrates work by other natural and social sciences into a policy-relevant framework and demonstrates the rich potential for collaborations among economists, natural scientists, and other social scientists on sustainable development challenges. For example, economists have developed integrated economic and climate models to address important climate change policy questions, such as how much and how fast greenhouse gas emissions should be reduced (26⇓⇓⇓⇓–31). In 2018, William Nordhaus shared the Nobel Prize in economics, in large part for his seminal work on such models. These models have sparked large debates within economics over fundamental issues such as the proper discount rate (32⇓⇓–35), and with the natural sciences over the likely scale of damages from climate change (36, 37). Another Nobel Prize winner in economics, Elinor Ostrom, used economic models to highlight the importance of governance and institutions for sustainable use of common property resources (38⇓–40). Another important area of work by economists directly relevant to sustainable development defines and measures inclusive wealth (13, 41⇓⇓⇓⇓⇓⇓⇓–49). Ken Arrow, yet another Nobel Prize winner in economics, was a leader in this field. It is also notable that the intellectual roots of inclusive wealth trace to work in the 1970s of two Nobel Prize winners in economics, William Nordhaus and James Tobin (50). Inclusive wealth is a measure of the aggregate wealth of society, including the value of natural capital along with the values of human capital, manufactured capital, and social capital. Inclusive wealth is a sufficient statistic for showing whether or not global society is on a sustainable trajectory. For the past two decades, the Beijer Institute of Ecological Economics, part of the Royal Swedish Academy of Sciences, has held annual meetings bringing together leading economists and ecologists to discuss issues at the intersection of ecology and economics, which have resulted in a number of high-impact papers (51). The idea for a forum to highlight work in economics on environment and sustainable development originated at one of these meetings.

Despite these examples and many others, the center of gravity in the analysis of sustainable development remains in the natural sciences, and the center of gravity in economics remains far removed from the challenge of sustainable development. The natural sciences that form the core of earth systems science, including ecology, geology, climatology, hydrology, and oceanography, are a logical place to start to build understanding of the current state and the evolution of earth systems. Natural scientists have taken the lead in prominent analyses of pathways to achieve sustainable development. For example, Pacala and Socolow (52) outline feasible methods using existing technology to reduce greenhouse gas emissions to secure a livable climate. Foley et al. (53) analyze how to meet growing food demand without expanding the footprint of agriculture. Costello et al. (54) suggest how extensive fishery reform could result in improved productivity and ecosystem health. Tallis et al. (55) analyze how to improve material standard of living for a growing population in ways that simultaneously sustain biodiversity, reduce greenhouse gas emissions, and reduce water use and air pollution. These works show that it is feasible to achieve multiple sustainable development goals with existing technology. The harder challenge is combining what is feasible in a biophysical sense with the difficult economic, political, and social hurdles that prevent society from getting to sustainable outcomes (55). In other words, natural science understanding is necessary but not sufficient to achieve sustainable development.

While natural science understanding is insufficient on its own to achieve sustainable development, the same is true of economics. Economists alone do not have the knowledge base supplied by the natural sciences necessary to understand the complex ecological systems within which the economic system operates and on which economic activity causes impacts. Progress in sustainable development requires collaboration between social scientists, including economists and natural scientists. Of course, achieving sustainable development requires institutions and political alignment that go well beyond assembling the science knowledge arising from integrated scientific knowledge.

Numerous examples show the incomplete nature of collaboration between economists and other disciplines engaged in the analysis of sustainable development. To take one recent example, there were no economists involved in a special section on “Ecosystem Earth” published in Science in April 2017 that contained discussions of population, consumption, agricultural production, land use, human behavior, collective action, and policy (56). The lack of involvement by economists in ongoing discussions of sustainable development leads to gaps in understanding production and consumption decisions, the resulting market outcomes that drive global environmental change, and how to regulate or reduce negative environmental impacts from economic activities.

The incomplete engagement of economists mirrors the structure of the economics discipline. The fields of ecological, environmental, and resource economics are not core fields within economics. There are few ecological, environmental, or resource economics publications in flagship journals within economics. For example, in 2018 only two papers published in the American Economic Review listed classification codes for renewable resources and conservation, nonrenewable resources and conservation, energy economics, or environmental economics (57, 58). Only a small minority of the top economics departments have fields in ecological, environmental, or resource economics. In contrast, virtually every top economics program offers fields in labor economics, industrial organization, and international trade. Ecological, environmental, and resource economics programs often are in schools of the environment or natural resources, schools of public policy, or in departments of agricultural economics. In addition, economics is notable among academic disciplines for its relative isolation: “Though all disciplines are in some way insular…this trait peculiarly characterizes economics” (59). Compared with other social scientists, economists have far lower citation rates for work in other disciplines. Jacobs (60) found that the percentage of within-field citations in economics was 81%, versus 59% for political science, 53% for anthropology, and 52% for sociology. In addition, the core of the economics discipline is relatively isolated from the natural sciences that have played a large role in sustainability science to date, ecology, geology, climatology, hydrology, and marine biology. Network maps of disciplines using citations patterns often show economics and fields, such as ecology and geosciences, at opposite ends of the spectrum (figure 3 in ref. 61).

Given the large role of economic activity in causing rapid change in earth systems, and the scale of the sustainable development challenge, there is an urgent need for more rapid integration of economics into the core of sustainable development, and for more rapid integration of sustainable development into the core of economics.

#### The plan is necessary—corporations are driven by profit incentives and allowing mergers and monopolies make solving the climate change impossible—they maintain perverse incentives that need to be reigned in. Any alternative leads to collusion!

Schinkel and Treuren 21. Maarten Pieter Schinkel and Leonard Treuren. “Green Antitrust: Friendly Fire In The Fight Against Climate Change” <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3749147>

4 Not less but more competition leads to greater sustainability The central question of whether it should be expected that firms will produce more sustainably in an anticompetitive agreement than in competition squarely falls on economics to answer. It is reasonable to base the analysis on two standard premises. The first is that (potential) consumers care about sustainability. Eichholtz et al. (2010) document a higher willingness to pay for office buildings with sustainability labels. Casadesus-Masanell et al. (2009) report a higher willingness to pay for T-shirts made with organic cotton. In a survey of the literature Kitzmueller and Shimshack (2012) conclude that willingness to pay depends in general positively on the degree of corporate social responsibility a firm engages in.23 More recently, Aghion et al. (2020) find that green innovation is positively correlated with consumers’ stated sustainability preferences.

A second premise is that, no matter how noble the initiatives may appear, firms are ultimately driven by profit motives. Rate of return incentives can certainly lead to intricate and forward-looking firm behavior, for instance investing in a good public image in order to attract more consumers. Running up short term losses with a CEO passionate about corporate social responsibility can therefore still be consistent with long term profit maximization. Yet under pressure of shareholders and investors, firms are interested in sustainability initiatives first and foremost to increase their profitability, in particular through buyers’ higher willingness to pay.24 The latter are the revenue returns to sustainability investments, which are costs. Therefore, companies will strive for profit-maximizing price increases and sustainability advances, for which cost-minimization is a necessary condition. That these incentives lead to little green is reflected in the literature on greenwashing. Firms certainly like to have a “green” public image, but when consumers cannot assess the true extent of their sustainability investments, they only undertake the minimum.25 In general, we should expect no less, and no more, from for-profit enterprises, both in competition and in coordination.

The relationship between competition and sustainability is studied in a limited but recently growing literature. The current consensus is that competition increases investments in sustainability, with firms investing in sustainability because it lowers their costs or allows them to stand out to consumers. Green, in other words, is a dimension of product differentiation. Bansal and Roth (2000), Porter and Kramer (2006), and Roulet and Bothello (2020) point out that corporate social responsibility (CSR) can be a strong competitive advantage. Graafland (2016) finds in survey data that price competition does not influence companies’ environmental performance ratings. Simon and Prince (2016) show that a reduction in industrial concentration in the United States is associated with a reduction in toxic releases at the factory level. Fernández-Kranz and Santaló (2010) and Flammer (2015) find that competition has a positive effect on CSR at the firm level, in studies of variation in import duties and concentration. Aghion et al. (2020) show that the positive relation between consumers’ stated sustainability preferences and the probability that a firm engages in green innovation increases with the degree of product market competition. This suggests that as pro-environment attitudes become more common over time, the role of competition in fostering green innovation will only increase. Ding et al. (2020) link antitrust policy to sustainability by showing that stricter competition law regimes are positively associated with CSR, and that this link is stronger in countries where consumers indicate stronger pro-environment attitudes.

Few papers study the relationship between horizontal agreements and sustainability directly. They relate to the literature on exempting research joint-ventures, which can increase R&D investments above competitive levels if spillovers of innovations are so large that unilateral investments are discouraged.26 For this reason, there is a broad exemption clause available for R&D joint-ventures, including for research into more sustainable production methods. However, with limited spill-overs, competition is the stronger driver of R&D. There is concern, therefore, that mergers reduce innovation.27 Importantly, sustainability initiatives of the kind considered for exemption, such as investments in cleaner technology or better quality of live for farm animals, have little or no spillover from one company to another. These cases, and the current green antitrust debate about advancing a transition to more sustainable ways of manufacturing, are primarily about the implementation of existing cleaner technologies, rather than about innovation.

Schinkel and Spiegel (2017) analyze the link between anticompetitive agreements and sustainability in a two-stage duopoly model where firms first select investments in sustainability and subsequently compete on the product market. They find that allowing the firms to coordinate their sustainability efforts leads to the lowest sustainability levels. Sustainability is a product attribute that consumers care about, and hence is used by firms to compete and attract each other’s customers. Treuren and Schinkel (2018) generalize these findings to more firms and remaining competition. Note that when firms coordinate prices and sustainability investments, sustainability levels are still lower than in competition. This means that if coordinating their sustainability investments allows the companies to collude on prices as well, a risk we noted above, sustainability does not benefit from coordination.

#### Even a total shift in individual attitudes about climate change would benefit from a more competitive economic environment.

Schinkel and Treuren 21. Maarten Pieter Schinkel and Leonard Treuren. “Green Antitrust: Friendly Fire In The Fight Against Climate Change” <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3749147>

Proponents of green antitrust policy point out that today’s corporate leadership increasingly pledges allegiance to take responsibility for stakeholders more widely, including for their environment.28 They view profit-driven firm analysis as outdated, and Friedman’s appeal to it as an ancient belief.29 Green CEO’s may not even be controllable by shareholders anymore if they wanted to. Importantly, however, if firms operate with an intrinsic motivation to produce more sustainably too, investments typically remain higher in competition than with sustainability agreements, and the difference may even become larger. In Schinkel and Treuren (2021), the level of sustainability investments features directly in each firm’s objective function, besides in the profits part. Since intrinsically motivated investments are independent of the competitive regime, they are higher in absolute value in both competition and coordination. Moreover, coordination reduces the additional intrinsically motivated green investments, since the loss of profit due to increasing sustainability beyond the normal profit maximizing level is larger for firms who jointly decide on sustainability. That an intrinsic motivation to do green makes anticompetitive agreements not more, but rather even less suitable to promote sustainability investments underlines our warning not to lean too far in sympathies for initiatives to take corporate social responsibility jointly.

#### AND it’s sufficient – Establishing a basis for “green anit-trust” creates government leverage for large-scale climate action – the plan propels a series of policy solutions that

Schinkel and Treuren 21. Maarten Pieter Schinkel and Leonard Treuren. “Green Antitrust: Friendly Fire In The Fight Against Climate Change” <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3749147>

7 Green antitrust excuses government failure to regulate In the classical economic approach, damaging side-effects of market interactions are seen as externalities. **The solution is to force market participants to internalize these externalities.** The social costs of pollution, for example, then become part of the production costs to be expressed in the product prices. Higher prices decrease demand and thereby environmental damage, while higher costs incentivize firms to look for more sustainable production methods. This way, market forces are harnessed to benefit the environment. Through competition, an optimal allocation of production and consumption will result, based on a society’s preferences for the climate relative to consumption goods. The efficient allocation of scarce resources over alternative means then remains firmly based on consumer sovereignty, i.e. the preferences of the people.36 Care for the future has a prominent place in this framework. Welfare of future generations is taken into account, for instance through the intergenerational altruism and bequest motives of the current population.37 **This is** also **how the future can** consistently enterinto **competition authorities’ assessments** of green efficiencies. It is first and foremost a government task to ensure that the social costs of production are reflected in the private costs of manufacturers. This can be done through taxation, or by ensuring that private property rights for climate-related issues are well defined, such that private parties will ensure that the costs of their use will be priced in. **Where this is hard to achieve,** for instance because the source of pollution remains disputed, **governments** can use direct regulation **to force firms to produce in a more sustainable way**. Unsustainable production, like under-provision of public goods, is a well-understood market failure, but it is a government failure that well-known solutions have only been sparingly used in the last several decades. Trying to remedy this government failure by creating a market failure – market power – seems a response that is itself doomed to fail. To begin with, trying to have private market power advance public interests is orthogonal to key lessons of classical public economic theory. **One way of seeing this green antitrust policy is as mandating private companies to increase their prices by an overcharge, i.e. “tax” a private good**, **and to use that money to finance a compensating public good**; sustainability. Samuelson’s rule prescribes that public good provision should be increasing with the utility that people derive from the public good. But for an anticompetitive sustainability agreement, the higher the willingness to pay for sustainable products, the less sustainability the corporate cooperative needs to deliver to compensate consumers for a given product price increase. After all, consumers with a high appreciation for green can be made indifferent with less of it, compared with consumers that appreciate green little. There is no reason for a green corporate cooperative to invest more of its extra revenue in sustainability than it is minimally required to do: the rest it can pocket as profit. Government, though certainly imperfect, at least strives for optimal taxation and break-even public good provision. Companies with market power instead have an incentive to maximize their margin. In addition, green antitrust policy runs the risk of exacerbating government failure. That governments keep failing to live up to their **mandate to guarantee the public interest** has many reasons, including public choice incentives ranging from regulatory laziness to outright corruption. Being able to point to industry self-regulation, in the form of sustainability agreements in restriction of competition, is another perfect excuse for governments not to take up their regulatory responsibility. Why the effort to regulate, after all, if government officials can simply rely on private initiatives to help meet sustainability goals? This is exactly how Chicken (2015) entered the stage: the Dutch cabinet did not want to improve by regulation the abysmal circumstances in which poultry is reared, because it would apply to all chicken, including the vast majority bred for export purposes. Yet there was strong public pressure to act. The problem was conveniently redirected towards the ACM, which was subsequently reproached for refusing to exempt the meagre initiative. The green antitrust movement therefore insists on a turn that, once taken, risks leading us down a path where competition authorities are accused of standing in the way of sustainability initiatives, behind which accusations firms can hide as an excuse for not becoming more sustainable. That is barking up the wrong tree: where there is a need for coordinated implementation of more sustainable production, government should regulate it, and firms with such green initiatives should lobby the designated public authority for effective regulation, rather than the competition authorities for protection from competition.

#### Emissions mitigation policy as an early mover is key to future abatement and preventing lock-in – solves leakage and green paradox.

Arroyo-Currás et al 15 (Tabaré Arroyo-Currás, Potsdam Institute for Climate Impact Research, Nico Bauer, Elmar Kriegler, Valeria Jana Schwanitz, Gunnar Luderer, Tino Aboumahboub, Anastasis Giannousakis, Jérôme Hilaire, “Carbon leakage in a fragmented climate regime: The dynamic response of global energy markets’, Technological Forecasting and Social Change Volume 90, Part A, January 2015, Pages 192–203)

5. Conclusions

Given the challenges to international cooperation on mitigating climate change, a number of climate policies have been implemented by various countries and regions, while others remain on the sideline. The heterogeneity of climate policy approaches has given rise to an internationally fragmented climate policy regime. Subsequently, global emission externalities such as carbon leakage have emerged as an important topic within the climate change mitigation debate.

This study illustrates the incidence and consequences of carbon leakage as an effect of early action in a fragmented climate policy regime. For this analysis, the REMIND integrated assessment model of the global economy, energy sector and the climate system is used to evaluate the environmental effectiveness and economic implications of unilateral and joint mitigation efforts. Overall, the main scope of this paper is to examine the role of carbon leakage via the energy channel, i.e. the increase in fossil fuel use in regions with weaker or non-existent climate policies due to more stringent mitigation action in other regions. The study also includes the capital market channel of carbon leakage.

We derive four main findings from our study. First, a reference policy scenario extrapolating fragmented action at current levels of ambition into the future will reduce emissions only modestly compared to the idealized case of immediate cooperative action on reaching a 450 ppm CO2e stabilization target (compare Blanford et al. [35]). Therefore, a pioneering region adopting more stringent emission reductions may be needed to strengthen climate mitigation. We show that the main impact on additional emission reductions does not come from the early mover action itself, but from the rest of the world following up with strengthening their abatement effort post 2030. Thus, a pioneer in adopting more stringent mitigation action needs to be particularly concerned with its ability to induce others to follow.

Second, the carbon leakage rate via the energy channel is limited to below 16% of the additional emission reductions from more stringent abatement action by pioneering regions. This result holds for different sizes and compositions of the early mover coalition. The carbon leakage mechanisms include the reduction of coal use in pioneering regions, or indirectly in other regions via knock-on substitution effects from reduced gas use in abating regions, leading to increased coal consumption in the rest of the world. While the type of mechanism and the regions that increase their fossil fuel consumption vary with the early mover coalition, the general result of limited leakage stands. This implies that carbon leakage, at least via the energy channel investigated here, is not strongly impacting the emission reduction gains from early mover action, and does not permanently increase the lock-in into fossil fuel infrastructure in other regions. It therefore does not provide a strong counter-argument against adoption of more stringent mitigation efforts by pioneering regions.

Compared with the scientific literature that mainly focused on the competitiveness channel the upper limit of 16% carbon leakage rate due to the energy market channel is small (Babiker [36]; Babiker [37]; Bernstein et al. [38]; Bollen et al. [39]; Burniaux and Oliveira-Martins [40]; Burniaux and Truong [41]; Gerlagh and Kuik [42]; Kuik and Gerlagh [43]; Light et al. [44]; Manne and Richels [45]; McKibbin et al. [19]). In the REMIND model the representation of international fossil fuel markets is highly flexible and fossil based energy conversion technologies can easily replace alternatives. Hence, fossil fuel suppliers can, in principle, find new demands easily, if demand is reduced due to unilateral climate policies. Carbon leakage via the energy market channel is mainly limited due to trade costs of fossil fuels and demand for final energies in non-abating countries. In the present study also the carbon prices of the moderate climate policies dampen the carbon leakage. Studies focusing on the competitiveness channel usually depend on the choice of trade elasticities with higher elasticities implying larger carbon leakage rates. In this study fossil energy trade is not limited in a similar way, and therefore limitations should imply even smaller carbon leakage rates.

Third, we observe that the re-allocation of emissions due to carbon leakage depends mostly on the energy system structure of the region that takes abatement action i.e. whether the region is a fossil resource importer (e.g. Europe), exporter (e.g. the United States) or de facto carbon intensive economy (e.g. China). We conclude that carbon leakage is a dynamic effect that mostly depends on (i) demand response of fuel importers to price changes, (ii) inter-fuel substitution possibilities and (iii) transportation cost barriers in the fossil fuel market.

Regarding the economic implications of fragmented climate action we confirm the assertion that early mitigation action leads to short-run GDP losses for the first movers, but delayed implementation of the carbon tax can lead to larger losses after the introduction of the tax. The larger tax shock can act as a significant barrier to take more stringent action and therefore delaying action might further impede the adoption of more ambitious carbon tax levels in the long run. We also find reallocation of GDP between early mover and late-comer regions triggered by the international capital market, but this is not a major driver of carbon leakage. This result is, however, different to the result of McKibbin et al. [19] who identified the converse effect on carbon leakage for the US.

Several caveats apply to the analysis here. First, the REMIND version used for this study does not take into account bilateral fossil fuel trade, but assumes a global pool trading scheme. Considering bilateral (or multilateral) trading reduces the flexibility of fossil fuel owners to redirect their supplies as some regions reduce their demand. Hence, this improvement might lead to lower leakage rates. Second, the study focused only on the energy channel of carbon leakage, although macro-economic substitution effects between energy, capital and labor were accounted for. Expanding the analysis of dynamic leakage in staged accession scenarios to a larger set of leakage channels, particularly including the re-allocation of energy intensive industries, would help to better constrain the full carbon leakage effect. It is worth mentioning that technology spillovers related to technology learning are not observed in this study.

We conclude from the results that the value of individual regions or coalitions adopting more stringent climate action rises or falls with their ability to induce others to follow suit. Thus, while global cooperation on climate mitigation may prove illusory in the short run, credible and strong mitigation action by major countries can help to keep the door open for future global action to stabilize climate change as carbon leakage effects are limited.

#### Even small carbon price increases impact behavior—changes consumption patterns

Hsu 11 (Shi-Ling Hsu, Professor of Law at University of British Columbia – previously Associate Prof at George Washington School of Law, Senior Attorney & Economist for the Environmental Law Institute The Case for a Carbon Tax: Getting Past our Hang-ups to Effective Climate Policy, Island Press Page 139-142)

While curmudgeons may grudgingly concede that a high carbon tax like that in Sweden would reduce emissions, a smaller one like the British Columbia carbon tax is a different matter. When the British Columbia government introduced its carbon tax in 2008, it admitted that its modest price effects would not have a substantial effect on car- bon dioxide emissions in the province. 41 More action was needed, and was in fact contemplated as the British Columbia government also en- acted a companion program laving the foundation for a cap-and-trade program as part of British Columbia's participation in the California- led Western Climate Initiative. But the carbon tax is indeed so small that one wonders if it really was meant to accomplish anything. The BC carbon tax was designed to ramp up from about $9 per ton of C02 in 2008 to about $30 in 2012. This translates into about 2.4 cents per little of gasoline, up to about 7.2 cents per liter in 2012. Gasoline prices fluctuate a great deal more than that, spiking in 2005 in the aftermath of Hurricane Katrina to more than $1.12 per liter, only to see a higher spike in the summer of 2008 to nearly $1.50, fol- lowed by a dip just a few months later to below 80 cents. 42 In Vancou- ver, gas stations even commonly lower the price by three and a half cents at nighttime. Does an extra 2.4 cents—or even 7 cents—per liter really change behavior very much?

It is a fair question. The standard economic answer is that a price increase will lead to a decline in consumption. It could take a while, but higher prices always lead to lower consumption, all other things being equal. So for the household wondering if it will drive less be- cause of a small increase in the price of gasoline, the answer could well be no, but there are many, many other consumers that could be right at the margins of making a consumption decision. Price elasticity is the term that economists use to denote how much of an adjustment con- sumers, in the aggregate, can be expected to make in response to a price change. Consumption of commodities respond not only to changes in the price of the commodity itself—measured by the own- price elasticity—but also changes in the prices of other goods that may be substitutes or affect the economic environment some other wav— measured by the cross-price elasticities. Finally, consumption of com- modities can change to varying degrees as income changes— measured by the income elasticity. Bread and milk have low income elasticities. Sports cars and cosmetic surgery have high income elasticities.

Most energy analysis is conducted on own-price elasticities, al- though income also figures very prominently in energy consumption. There are short-term and long-term elasticities—adjustments that are made in the relatively short term—on the order of a few months—and those that are made for the longer term. Long-term elasticities are in- variably greater, since at any given time, the timing may or many not be right for any individual household to make an adjustment. Over a longer period of time, there arise more and more times during which an adjustment—some decision that might be affected by a price— seems appropriate. For example, a family that has just purchased a new sport-utility vehicle would not contemplate replacing it even if gaso- line prices rose sharply. One would expect very few adjustments of that sort. However, over a five- or ten-year period, as the sport-utility vehi- cle starts to age and incur more maintenance costs, and as it nears the end of its useful life, a replacement decision is more likely to take into account gasoline prices. As the same family contemplates what they will buy to replace that sport-utility vehicle, the family has a wider ar- ray of options available than it does when it has a brand-new shiny SUV. And in the aggregate, over a longer period, more and more households are likely to arrive at that decision point at which they con- template replacing an aging vehicle, and more adjustments are likely to be made. As long-term elasticity takes into account this greater number of adjustments, it would naturally be larger than short-term elasticities.

Among commodities, fossil fuel usage is one of the more studied phenomena, and the likelihood that people adjust to even small price changes in fossil fuel price is so well-established that it almost rises to the level of an economic maxim. While one might ask oneself whether a family might change their mind about anything if the carbon price is as small as $9 per ton of C02 (translating into 2.4 cents per liter at the gas pump), there are a myriad of other decision makers that could well change their behavior. As argued above, the University of British Columbia is just such an entity. Facing a tax liability that would be consid- ered small by industrial standards, but significant to an academic institution or a medium-sized business or industry, it set about finding ways to reduce its reliance on fossil fuels for powering the campus.

For decades, economists have been studying the aggregate responses to change in energy prices. The range of estimates can be quite large, as some studies are limited to certain regions or countries, and some ate limited in time, so the economic environment in which price changes are studied can be quite varied. As an empirical matter, it is safe to say that long-term elasticities are indeed greater than short- term elasticities. It is also likely that industrial and commercial consumers have larger long-term elasticities than residential consumers. 43 So it might be misleading for individuals to examine their own personal situation and ask themselves, "would I turn down my thermo- stat if the price of natural gas went up by 5 percent?" The point is how much, in the aggregate, all consumers of energy change their behavior, and on this score, industrial and commercial consumers, which ac- counted for half of all energy consumption in the United States in 2008 (with residential accounting for 22 percent), 44 would provide a different answer.

#### Pragmatism is better than purity

Frederic C. RICH, J.D., University of Virginia School of Law, practiced at Sullivan & Cromwell LLP (1981-2014), Vice Chair of the Land Trust Alliance, head of the Environmental Leaders Group in New York State, 16 [*Getting to Green*, 2016, p. 196-198]

Bill Clinton recently said of the U.S. Constitution, "[I]t ought to be subtitled: 'Let's make a deal.'"10 He's right. But the Green movement has for decades been led by policy experts who are confident that their policies present the best solutions to environmental issues and who often are unwilling to consider alternatives, or accept incremental progress when a comprehensive solution is not possible. Green advocates have appeared to many to prefer confrontation to compromise, and Green colleagues are often harsh in criticizing others [END PAGE 196] who accept partial solutions or show willingness to deviate from the movement's ask in order to show some progress.11

Even after the fact, Green orthodoxy often paints landmark compromises as failures. David Brower, longtime head of the Sierra Club, came to regret the deal that saved Dinosaur National Monument because it involved a compromise that permitted a single dam at the spectacular Glen Canyon.12 Rejection of compromise is deeply embedded in the DNA of the more radical part of the movement. Earth First!, for example, has as its slogan "No compromise in the defense of Mother Earth." And although the rest of the movement does not share the approach of these more radical groups, their rhetoric echoes in the consciences of mainstream Greens. As a result, among Greens purity too often is prized above pragmatism. The former president of the Izaak Walton League complains bitterly about some of his colleagues in the Green movement, where, he says, "people often want to be viewed as the most holy defender of the faith, rather than the most effective at making progress."13

The Green movement has had a particular problem accepting incrementalism, although recent history is filled with examples, such as the gradual tightening of fuel efficiency and auto emissions standards, that are successful models of exactly this approach. In some cases opposition to incremental gain is strategically sound, or is simply a tactic designed to improve and broaden the scope of a law or rule. But when it results in positive legislation or regulation being stalled or killed, with no realistic hope of anything better replacing it, then it is a mistake. When motivated by pure politics, such as the desire to deny the Republicans an environmental victory, then it is a betrayal of our environmental mission for partisan gain.

Greens also sometimes seem to take pride in spewing out "big thinking" without regard to its political feasibility. Gus Speth, for example, wrote, "If someone says these proposals are impractical, [END PAGE 197] or politically naïve, then I would respond that we need impractical answers."14 These habits—reluctance to compromise, distrust of incrementalism, and insufficient attention to pragmatism—have contributed to the movement's failures and resulted in missed opportunities to make at least some progress on climate change. Any well-managed organization should insist that results define success. If the perfect policy is dead on arrival as a political matter, then compromise. The environmental movement is funded by its supporters to make a difference in the environment. So figure out what is achievable and go for that, even if it means you are negotiating with yourself, compromising before you sit down at the table with the other side, or "thinking small," all of which have been cardinal sins in many NGO cultures. Incremental progress is progress, and progress is what is urgently needed.

#### Working within the system is necessary to solve particular instances of climate change—there’s no guarantee revolution will solve

-It’s too late to solve the whole environmental crisis, but can work to mitigate the damage

-No guarantee the alternative’s regression to socialism won’t have same environmental problems

Christian PARENTI, professor of sustainable development at the School for International Training, Graduate Institute, 13 [“A Radical Approach to the Climate Crisis,” *Dissent*, Summer 2013, http://www.dissentmagazine.org/article/a-radical-approach-to-the-climate-crisis]

Several strands of green thinking maintain that capitalism is incapable of a sustainable relationship with non-human nature because, as an economic system, capitalism has a growth imperative while the earth is finite. One finds versions of this argument in the literature of eco-socialism, deep ecology, eco-anarchism, and even among many mainstream greens who, though typically declining to actually name the economic system, are fixated on the dangers of “growth.”

All this may be true. Capitalism, a system in which privately owned firms must continuously out-produce and out-sell their competitors, may be incapable of accommodating itself to the limits of the natural world. However, that is not the same question as whether capitalism can solve the more immediate climate crisis.

Because of its magnitude, the climate crisis can appear as the sum total of all environmental problems—deforestation, over-fishing, freshwater depletion, soil erosion, loss of biodiversity, chemical contamination. But halting greenhouse gas emissions is a much more specific problem, the most pressing subset of the larger apocalyptic panorama.

And the very bad news is, time has run out. As I write this, news arrives of an ice-free arctic summer by 2050. Scientists once assumed that would not happen for hundreds of years.

Dealing with climate change by first achieving radical social transformation—be it a socialist or anarchist or deep-ecological/neo-primitive revolution, or a nostalgia-based localista conversion back to a mythical small-town capitalism—would be a very long and drawn-out, maybe even multigenerational, struggle. It would be marked by years of mass education and organizing of a scale and intensity not seen in most core capitalist states since the 1960s or even the 1930s.

Nor is there any guarantee that the new system would not also degrade the soil, lay waste to the forests, despoil bodies of water, and find itself still addicted to coal and oil. Look at the history of “actually existing socialism” before its collapse in 1991. To put it mildly, the economy was not at peace with nature. Or consider the vexing complexities facing the left social democracies of Latin America. Bolivia, and Ecuador, states run by socialists who are beholden to very powerful, autonomous grassroots movements, are still very dependent on petroleum revenue.

A more radical approach to the crisis of climate change begins not with a long-term vision of an alternate society but with an honest engagement with the very compressed timeframe that current climate science implies. In the age of climate change, these are the real parameters of politics.

#### Strategic use of market mechanisms to politicize the inequalities of the status quo is possible – radical system change alone is a demand for a clean slate we don’t have

Hoffman 16 (Andrew, Professor and director of the Erb Institute for Global Sustainable Enterprise at the University of Michigan, 2/15/2016, The Invisible Hand Won’t Solve the Climate Crisis. Capitalism Must Evolve., Evonomics, http://evonomics.com/the-invisible-hand-wont-solve-the-climate-crisis-capitalism-must-evolve/)

This binary framing masks the real questions we face, both what we need to do and how we are going to get there. Yet there are serious conversations within management education, research and practice about the next steps in the evolution of capitalism. The goal is to develop a more sophisticated notion of the role of the corporation within society. These discussions are being driven not only by climate change, but concerns raised by the financial crisis, growing income inequality and other serious social issues.¶ The market’s rough edges¶ Capitalism is a set of institutions for structuring our commerce and interaction. It is not, as some think, some sort of natural state that exists free from government intrusion. It is designed by human beings in the service of human beings and it can evolve to the needs of human beings. As Yuval Levin points out in National Affairs, even Adam Smith argued that “the rules of the market are not self-legislating or naturally obvious. On the contrary, Smith argued, the market is a public institution that requires rules imposed upon it by legislators who understand its workings and its benefits.”¶ And, it is worth noting, capitalism has been quite successful. Over the past century, the world’s population increased by a factor of four, the world economy increased by a factor of 14 and global per capita income tripled. In that time, average life expectancy increased by almost two-thirds due in large part to advances in medicine, shelter, food production and other amenities provided by the market economy.¶ Capitalism is, in fact, quite malleable to meet the needs of society as they emerge. Over time, regulation has evolved to address emergent issues such as monopoly power, collusion, price-fixing and a host of other impediments to the needs of society. Today, one of those needs is responding to climate change.¶ The question is not whether capitalism works or doesn’t work. The question is how it can and will evolve to address the new challenges we face as a society. Or, as Anand Giridharadas pointed out at the Aspen Action Forum, “Capitalism’s rough edges must be sanded and its surplus fruit shared, but the underlying system must never be questioned.”¶ These rough edges need be considered with the theories we use to understand and teach the market. In addition, we need to reconsider the metrics we use to measure its outcomes, and the ways in which the market has deviated from its intended form.¶ Homo economicus?¶ To begin, there are growing questions around the underlying theories and models used to understand, explain and set policies for the market. Two that have received significant attention are neoclassical economics and principal-agent theory. Both theories form the foundation of management education and practice and are built on extreme and rather dismal simplifications of human beings as largely untrustworthy and driven by avarice, greed and selfishness.¶ As regards neoclassical economics, Eric Beinhocker and Nick Hanauer explain:¶ Behavioral economists have accumulated a mountain of evidence showing that real humans don’t behave as a rational homo economicus would. Experimental economists have raised awkward questions about the very existence of utility; and that is problematic because it has long been the device economists use to show that markets maximize social welfare. Empirical economists have identified anomalies suggesting that financial markets aren’t always efficient.¶ As regards principal-agent theory, Lynn Stout goes so far to say that the model is quite simply “wrong.” The Cornell professor of business and law argues that its central premise – that those running the company (agents) will shirk or even steal from the owner (principal) since they do the work and the owner gets the profits – does not capture “the reality of modern public corporations with thousands of shareholders, scores of executives and a dozen or more directors.”¶ The most pernicious outcome of these models is the idea that the purpose of the corporation is to “make money for its shareholders.” This is a rather recent idea that began to take hold within business only in the 1970s and 1980s and has now become a taken-for-granted assumption.¶ If I asked any business school student (and perhaps any American) to complete the sentence, “the purpose of the corporation is to…” they would parrot “make money for the shareholder.” But that is not what a company does, and most executives would tell you so. Companies transform ideas and innovation into products and services that serve the needs of some segment of the market. In the words of Paul Pollman, CEO of Unilever, “business is here to serve society.” Profit is the metric for how well they do that.¶ The problem with the pernicious notion that a corporation’s sole purpose is to serve shareholders is that it leads to many other undesirable outcomes. For example, it leads to an increased focus on quarterly earnings and short-term share price swings; it limits the latitude of strategic thinking by decreasing focus on long-term investment and strategic planning; and it rewards only the type of shareholder who, in the words of Lynn Stout, is “shortsighted, opportunistic, willing to impose external costs, and indifferent to ethics and others’ welfare.”¶ A better way to gauge the economy¶ Going beyond our understanding of what motivates people and organizations within the market, there is growing attention to the metrics that guide the outcomes of that action. One of those metrics is the discount rate. Economist Nicholas Stern stirred a healthy controversy when he used an unusually low discount rate when calculating the future costs and benefits of climate change mitigation and adaptation, arguing that there is a ethical component to this metric’s use. For example, a common discount rate of 5% leads to a conclusion that everything 20 years out and beyond is worthless. When gauging the response to climate change, is that an outcome that anyone – particularly anyone with children or grandchildren – would consider ethical?¶ Another metric is gross domestic product (GDP), the foremost economic indicator of national economic progress. It is a measure of all financial transactions for products and services. But one problem is that it does not acknowledge (nor value) a distinction between those transactions that add to the well-being of a country and those that diminish it. Any activity in which money changes hands will register as GDP growth. GDP treats the recovery from natural disasters as economic gain; GDP increases with polluting activities and then again with pollution cleanup; and it treats all depletion of natural capital as income, even when the depreciation of that capital asset can limit future growth.¶ A second problem with GDP is that it is not a metric dealing with true human well-being at all. Instead, it is based on the tacit assumption that the more money and wealth we have, the better off we are. But that’s been challenged by numerous studies. ¶As a result, French ex-president Nicolas Sarkozy created a commission, headed by Joseph Stieglitz and Amartya Sen (both Nobel laureates), to examine alternatives to GDP. Their report recommended a shift in economic emphasis from simply the production of goods to a broader measure of overall well-being that would include measures for categories like health, education and security. It also called for greater focus on the societal effects of income inequality, new ways to measure the economic impact of sustainability and ways to include the value of wealth to be passed on to the next generation. Similarly, the king of Bhutan has developed a GDP alternative called gross national happiness, which is a composite of indicators that are much more directly related to human well-being than monetary measures. ¶ The form of capitalism we have today has evolved over centuries to reflect growing needs, but also has been warped by private interests. Yuval Levin points out that some key moral features of Adam Smith’s political economy have been corrupted in more recent times, most notably by “a growing collusion between government and large corporations.” This issue has become most vivid after the financial crisis and the failed policies that both preceded and succeeded that watershed event. The answers, as Auden Schendler and Mark Trexler point out, are both “policy solutions” and “corporations to advocate for those solutions.”¶ We can never have a clean slate¶ How will we get to the solutions for climate change? Let’s face it. Installing efficient LED light bulbs, driving the latest Tesla electric car and recycling our waste are admirable and desirable activities. But they are not going to solve the climate problem by reducing our collective emissions to a necessary level. To achieve that goal requires systemic change. To that end, some argue for creating a new system to replace capitalism. For example, Naomi Klein calls for “shredding the free-market ideology that has dominated the global economy for more than three decades.”¶ Klein is performing a valuable service with her call for extreme action. She, like Bill McKibben and his 350.org movement, is helping to make it possible for a conversation to take place over the magnitude of the challenge before us through what is called the “radical flank effect.”¶ All members and ideas of a social movement are viewed in contrast to others, and extreme positions can make other ideas and organizations seem more reasonable to movement opponents. For example, when Martin Luther King Jr first began speaking his message, it was perceived as too radical for the majority of white America. But when Malcolm X entered the debate, he pulled the radical flank further out and made King’s message look more moderate by comparison. Capturing this sentiment, Russell Train, second administrator of the EPA, once quipped, “Thank God for [environmentalist] Dave Brower; he makes it so easy for the rest of us to be reasonable.”¶ But the nature of social change never allows us the clean slate that makes sweeping statements for radical change attractive. Every set of institutions by which society is structured evolved from some set of structures that preceded it. Stephen Jay Gould made this point quite powerfully in his essay “The Creation Myths of Cooperstown,” where he pointed out that baseball was not invented by Abner Doubleday in Cooperstown New York in 1839. In fact, he points out, “no one invented baseball at any moment or in any spot.” It evolved from games that came before it. In a similar way, Adam Smith did not invent capitalism in 1776 with his book The Wealth of Nations. He was writing about changes that he was observing and had been taking place for centuries in European economies; most notably the division of labor and the improvements in efficiency and quality of production that were the result. ¶ In the same way, we cannot simply invent a new system to replace capitalism. Whatever form of commerce and interchange we adopt must evolve out of the form we have at the present. There is simply no other way. ¶ But one particularly difficult challenge of climate change is that, unlike Adam Smith’s proverbial butcher, brewer or baker who provide our dinner out of the clear alignment of their self-interest and our needs, climate change breaks the link between action and outcome in profound ways. A person or corporation cannot learn about climate change through direct experience. We cannot feel an increase in global mean temperature; we cannot see, smell or taste greenhouse gases; and we cannot link an individual weather anomaly with global climate shifts. ¶ A real appreciation of the issue requires an understanding of large-scale systems through “big data” models. Moreover, both the knowledge of these models and an appreciation for how they work require deep scientific knowledge about complex dynamic systems and the ways in which feedback loops in the climate system, time delays, accumulations and nonlinearities operate within them. Therefore, the evolution of capitalism to address climate change must, in many ways, be based on trust, belief and faith in stakeholders outside the normal exchange of commerce. To get to the next iteration of this centuries-old institution, we must envision the market through all components that help to establish the rules; corporations, government, civil society, scientists and others. ¶ The evolving role of the corporation in society¶ At the end of the day, the solutions to climate change must come from the market and more specifically, from business. The market is the most powerful institution on earth, and business is the most powerful entity within it. Business makes the goods and services we rely upon: the clothes we wear, the food we eat, the forms of mobility we use and the buildings we live and work in. ¶ Businesses can transcend national boundaries and possess resources that exceed that of many countries. You can lament that fact, but it is a fact. If business does not lead the way toward solutions for a carbon-neutral world, there will be no solutions.

#### Economic valuation is key to the environment

Polasky 12 (Stephen, Professor of Ecological/Environmental Economics, University of Minnesota, Seth Binder, Summer 2012, Valuing the Environment for Decisionmaking, http://issues.org/28-4/polasky/)

Virtually all important environmental management and policy decisions have a wide range of effects. For example, zoning or development decisions about land use can have a variety of environmental impacts (for example, on local water and air quality, the potential for flooding downstream, carbon sequestration, and habitat for wildlife) as well as economic and social effects (on economic development, jobs, and income). Similarly, decisions on limits on emissions of air pollutants or greenhouse gases can affect a range of environmental, economic, and social concerns. These results affect multiple groups who often have very different views about desired outcomes (for example, developers versus environmentalists). Effects differ across geography (upstream versus downstream) and time (current versus future impacts). Choosing among management or policy options that differ in terms of environmental, economic, and social outcomes with spatial and temporal components may at first glance seem overwhelmingly complex, with dimensions that seem incomparable. Good environmental management and policy decisionmaking, however, necessitates systematic evaluation and consideration of the effects of management and policy on the affected public. Even though the quantitative valuation of these effects will never be perfect, the outcome of attempts to assess value provides important information to help guide decisionmaking.¶ ¶ Decisions, decisions¶ ¶ Management and policy decisions typically involve difficult tradeoffs that bring improvements in some dimensions and declines in others. Ultimately, deciding whether to choose management or policy alternative A or B requires an evaluation of whether A or B is “better,” where better is determined by the objectives of the decisionmaker. It is easy to conclude that one alternative is better than another if it is better in all dimensions. But making comparisons in which one alternative is better in some dimensions but worse in others requires making difficult value judgments. For example, clearing land for housing development may result in higher incomes and more jobs but reduce habitat for species and worsen local water quality. Whether land clearing is the right decision will depend on whether an increase in incomes and jobs is valued more highly than maintaining habitat and water quality. But how can one really compare income versus habitat for species or jobs versus water quality? Comparing across these different dimensions seems like comparing the proverbial apples and oranges. Reaching an environmental management or policy decision, though, requires the decisionmaker to compare apples and oranges, either explicitly or implicitly.¶ ¶ For an individual, deciding which college to attend, where to live, or what job to take is often a hard choice to make, in large part because it involves changes in multiple dimensions simultaneously. Moving to a new job in a new city may be a better professional opportunity and offer a new set of cultural amenities, but is it worth disrupting family life, moving away from friends, and making adjustments to a new community? Though it is difficult to compare such alternatives, people do make these decisions all the time. In choosing an option, taking account of all the factors, people make a determination that one option is better than the other available options.¶ ¶ As difficult as such choices can be for an individual, making environmental management and policy decisions adds yet another level of complexity. Such decisions affect many people simultaneously and thus require finding a way to aggregate values across different people to reach a decision. Management and policy decisions can make some groups better off while making others worse off, requiring a different sort of apples-and-oranges comparison.¶ ¶ Two methods used in such multidimensional, multiperson decisionmaking contexts are economic benefit/cost calculations and multicriteria decision analysis (MCDA). Each of these methods transforms a complex multidimensional problem involving multiple people into a single dimension that can be used to rank alternatives. These methods act like a blender that mixes apples and oranges to produce a fruit smoothie. Decisionmakers can then decide which fruit smoothie they like the best.¶ ¶ Economics reduces multidimensional problems to a single dimension by measuring the value of changes in each dimension with a common metric, which is typically, but not necessarily, a monetary metric. Economist8s tend to prefer a monetary metric because it is a pervasive, intuitive, and easily observable measure of the values that people attribute to an array of everyday goods and services. In wellfunctioning markets, the price of a good or service reflects its marginal value to the buyer measured in terms of the common monetary metric: what the buyer is willing to pay to have the good or service. This fact makes the marginal values of many very different goods and services commensurable. The concept extends even to environmental attributes that do not have a market value, such as clean air, as long as people are willing to make tradeoffs in their consumption of some market goods in order to obtain other nonmarket attributes.¶ ¶ The ability to measure values with a common monetary metric rests on two key premises. First, individual willingness to pay for an item is assumed to accurately represent the value of that item to the individual: that is, how much better off the individual is with the item than without the item, measured in monetary terms. Second, the aggregation of values to the societal level requires that the correspondence between willingness to pay and well-being be comparable across individuals, so that a measure of societal value is equal to the (appropriately weighted) sum of values across all individuals in society. This comparability is necessary in order to do benefit/cost analysis resulting in a single number that summarizes social net benefits.¶ ¶ With the ability to produce an aggregate social net benefit calculation for any policy option, the economic benefit/cost decision rule is simple: Choose the option that maximizes social net benefits. This simple rule can be extended to account for uncertainty by maximizing expected social net benefits, where net benefits for individuals can include risk aversion (that is, a willingness to pay to avoid being subjected to uncertain outcomes). The decision rule can also incorporate constraints that restrict outcomes, so that they do not violate minimum environmental standards or basic human rights. As noted, however, the social net benefit calculation requires that individuals evaluate multiple dimensions with a single monetary metric of value and that these values be comparable across individuals. Without such interpersonal comparability, management or policy changes resulting in both winners and losers cannot be evaluated. In this case, only alternatives in which everyone is better off are clearly superior, and such alternatives are extremely unlikely to emerge.¶ ¶ Benefit/cost calculations have been applied to a wide variety of environmental policies. All recent presidents, both Democratic and Republican, have required agencies to evaluate the benefits and costs of regulations, including environmental regulations. Executive Order 12866 signed by President Clinton in 1993 states that agencies “shall assess both the costs and the benefits of the intended regulation” and “in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits” The Environmental Protection Agency (EPA) has done extensive benefit/cost calculations of regulations, particularly regulations under the Clean Air Act. The EPA estimated that the 1990 Clean Air Act would provide benefits of $2 trillion between 1990 and 2020 while imposing costs of $65 billion, a benefit-to-cost ratio of approximately 30-to-1. A prior study of the benefits and costs of the Clean Air Act from 1970 to 1990 found a similarly large benefitto-cost ratio.¶ ¶ The economic benefit/cost approach to maximizing social net benefits may be thought of as belonging to the broader class of MCDA methods, all of which require explicit or implicit weighting of various attributes of expected outcomes of management or policy decisions. Although some MCDA methods accommodate only quantitative attributes, others also permit qualitative attributes. Given attributes and weights, different MCDA methods take different approaches to evaluating alternatives. Some methods seek to identify the best alternative, similar to the economic approach of maximizing social net benefits, while others, such as goal programming, seek to identify alternatives that meet certain thresholds of performance. In goal programming, aspirational or minimally acceptable thresholds are set for each criterion, and alternatives are evaluated according to the priority-weighted distances by which criteria fall short of these thresholds. In general, MCDA methods seek to maximize a social welfare function of a particular, often implicit, form.¶ ¶ Setting relative values¶ ¶ To be operational, benefit/cost and MCDA methods require information on relative values (weights) for different dimensions of value affected by environmental management or policy. Economics and decision sciences tend to take different approaches to assembling information about values. In economics, the values of different management or policy options are derived from aggregating the net benefits to individuals in society for that option. In decision sciences, a variety of methods are used to assemble information on weights to assign to different dimensions.¶ ¶ The task of the economist in understanding relative values for an individual is far easier for marketed goods and services than for nonmarketed environmental attributes. For marketed goods and services, economists use observations on how much is purchased at a given price over a range of different prices to construct a demand function. The demand function summarizes information on the willingness to pay of the individual for the good or service. In competitive markets, the supply function reflects the marginal cost of producing the good or service. Demand and supply can be used to define economic surplus, which is the difference between the (marginal) willingness to pay given by demand and the marginal cost of production given by supply. Summing up this difference over the entire quantity traded is equal to economic surplus; that is, the value generated from the production and consumption of the good or service.¶ ¶ Some environmental changes directly affect marketed goods and services, and the value of these effects can be evaluated by assessing the net change in economic surplus in the affected markets. Take, for example, the potential effects of excess nutrients in a body of water that cause dead zones (areas of low oxygen), resulting in lowered fish and shellfish populations and reduced commercial harvests. With basic information about consumer demand and the costs of supply, economists can estimate the expected loss in economic surplus from the reduction in harvests. Adjustments to economic surplus calculations are necessary when market imperfections, such as monopoly pricing, taxes, or subsidies, result in price distortions so that prices are not a true reflection of the value of marketed goods and services.¶ ¶ The concept of economic surplus (value) also applies to environmental attributes, such as clean air or access to natural areas, for which there is no market. Valuing nonmarket goods and services is more difficult, because there is no readily observable signal of value that is comparable to a marke8t price. Economists have devised a suite of nonmarket valuation tools that can be applied to value nonmarketed environmental attributes. Some nonmarket valuation methods use observable expenditure on a different marketed good or service to draw an inference about the value of the nonmarketed environmental attribute of interest. For example, housing prices may reflect the increased willingness to pay for housing in locations with better environmental amenities, such as access to lakes and parks or better air quality. The choice of where to recreate can reveal information about the relative value of environmental amenities that vary across recreation sites. Other methods of estimating value record changes in expenditures, such as changes in the cost to treat drinking water with changes in water quality.¶ ¶ Economists cannot use observed expenditures to value all important changes to the environment. For example, if all of the lakes in a region are polluted and no one uses them for recreation, it will be difficult to assess the value of reducing pollution on recreational value, unless one is willing to make inferences from other regions. More fundamentally, there are limited or no directly observable expenditures or other behavioral clues for some environment attributes, particularly non-use benefits such as knowing that species exist. In Antonio Briceño, Overfishing, from the Millions of Pieces: Only One Puzzle Project, Digital c-print on Fuji Crystal Archival paper, 21 x 60 inches, 2010. the absence of observable behavior, economists use survey questions to ask people about values for changes in environmental attributes. Such “stated preference” methods include contingent valuation and conjoint analysis. The contingent valuation method presents survey respondents with a hypothetical change in the environment, such as a 10% increase in the size of humpback whale populations, and asks whether they would be willing to pay a specified amount for the change. Varying the specified amount and observing the proportion of people saying yes generates information analogous to a demand curve for marketed goods and services. In conjoint analysis, people are asked to rank a series of outcomes that differ in the quantities of various attributes. Conjoint analysis allows direct evaluation of how people trade off one attribute versus another, such as an improvement in air quality versus greater access to open space. If one of the attributes is income or expenditure, then the analyst can also estimate willingness to pay.¶ ¶ Some actions, such as emissions of greenhouse gases, cause changes in multiple dimensions that occur over extended periods. For example, a change in carbon storage in ecosystems that reduces atmospheric concentrations causes changes in climate forcing and ocean acidification, which in turn affect myriad other environmental attributes, including precipitation patterns, with effects on agricultural production, the probability and severity of flooding, and the health of marine resources, among others. Summarizing the value of all these changes into a single estimate of the social cost of carbon (SCC) requires complex integrated assessment models that predict both environmental and economic outcomes and attach estimates of the value of those outcomes. Further complicating matters, SCC estimates depend on levels of emissions that can be affected by the very policy choice that SCC is meant to inform. For this reason and others, such as the choice of social discount rate, the estimates of the SCC range from near zero to hundreds of dollars per ton of carbon.¶ ¶ Instead of the often-complex process of economic valuation, MCDA typically relies on a set of alternative methods for establishing relative values or weights on different criteria, to be chosen by the decisionmakers. The identification of weights may be done by introspection, deliberation, or negotiation—or some combination of the three—among stakeholders. Setting relative weights may also be done as part of an iterative process in which alternatives are evaluated, weights reassessed in light of the evaluation, and new criteria weights applied.¶ ¶ One example of how relative weights for different criteria are set in MCDA is through application of the analytical hierarchy process. In this process, decisionmakers are asked to determine a set of top-level criteria, and within each of these to determine the subcomponent criteria. They are then asked to rank the relative importance of criteria at each level of the hierarchy. For example, suppose a decisionmaker is evaluating policies aimed at controlling non–point-source pollution from agriculture with two overarching criteria of water quality and economic effects. If these criteria are assigned equal importance, then each receives a weight of 0.5. At the next level of hierarchy, suppose that the water quality criteria include water clarity, dissolved oxygen content, and temperature, and that the economic criteria include farm income and jobs. If the decisionmaker believes that water clarity is twice as important as dissolved oxygen, and dissolved oxygen is twice as important as temperature, their weights at this level of hierarchy are 4/7, 2/7, and 1/7, respectively. Suppose that jobs are ranked as twice as important as farm income, then the weights would be 2/3 and 1/3. The overall weights in the analysis would then be 0.5 times these values: 2/7 for water clarity, 1/7 for dissolved oxygen content, 1/14 for water temperature, 1/3 for jobs, and 1/6 for farm income.¶ ¶ A potentially important difference between economic and MCDA approaches to valuation is in whose values are incorporated. In principle, valuation in benefit/cost assessments includes the value of everyone affected by management or policy choices, though in practice there may be questions about whether economic valuation methods accurately reflect societal values. In MCDA, it is typically a smaller subset of people that is involved in setting relative weights. For local-scale problems, MCDA methods could include all affected parties in a deliberative process, but as the scale of the problem grows, this will not be possible. For larger-scale environmental problems, ranging up to global concerns such as climate change, there is the question of representation and whether those present adequately reflect the views of the wider public. In addition, relative weights in MCDA should not be treated as constant but should reflect changes in circumstances, something that is typically captured in economic valuation methods.¶ ¶ Weighty issues¶ ¶ Any environmental management or policy decision is likely to entail winners and losers. How should the distribution of benefits and costs across groups be treated in environmental management and policy decisions? Critics of benefit/cost analysis contend that reliance on economic valuation systematically disadvantages those with less money. Greater wealth means greater ability (and thus willingness) to pay, so benefit/cost analysis effectively gives more weight to those with more money (“voting with dollars”). One way to answer this criticism is to give a higher weight to the values of those with less wealth. Economists have found considerable evidence of diminishing marginal utility of income, meaning that the value of an additional dollar to a poor person is greater than to a rich person. This fact can be used to justify “equity weights” based on differences in wealth. For example, an equity weight argument would mean that otherwise equal damages from future climate change should be given greater weight in low-income countries than in high-income countries. In addition, if society is committed to protecting the interests of particular groups, it can constrain consideration of options to those that achieve specified distributional goals.¶ ¶ Since the effects of alternative environmental management and policy options will differ across generations, a fundamental challenge in valuing environmental management and policy decisions is how to aggregate benefits and costs that accrue to current and future generations (inter-generational distribution). For example, more aggressive climate change mitigation strategies impose costs on the current generation but generate benefits for future generations.Economists typically use discounting to aggregate benefits and costs over time. The standard economic rationale for discounting is that investments yield a positive expected real rate of return, so that having a dollar today is worth more than having a dollar in the future. Costs and benefits realized at different points in time are thus commensurable in present value terms after discounting.¶ ¶ The standard discounting approach works well for nearterm private investment decisions, but what about for longterm social decisions affecting the welfare of future generations? If one accepts the principle of equal moral standing of all generations, there would seem to be little ethical justification for discounting future welfare. Frank Ramsay, the father of economic approaches to discounting and growth theory, maintained that it was “ethically indefensible” to treat the welfare of current and future generations differently. However, to the extent that future generations are expected to be better off than the current generation, discounting can be justified as an intergenerational application of equity weights. By the same principle, if environmental conditions worsen significantly and future generations are expected to be less well off than the present generation, this would imply a negative discount rate; that is, discounting of present benefits relative to future benefits. As recent debates on climate change policy aptly illustrate, there is little agreement among economists, or between economists and others, on discounting.¶ ¶ Uncertainty is a central issue in environmental management and policy. Uncertainty enters at various steps in the link between management and policy choices and eventual effects on the value of outcomes. There can be uncertainty about how changes in management or policy affect choices made by individuals and businesses (behavioral uncertainty), how changes in human actions affect the environment (scientific uncertainty), and how consequent changes in the environment will affect human well-being (value uncertainty). Recent work on the value of ecosystems services illustrates each of these uncertainties. For example, the Conservation Reserve Program, which pays landowners for taking land out of production and restores perennial vegetation, can shift patterns of land use and, in turn, result in changes in carbon sequestration, water quality, and habitat provision. Program participation and the provision of services depend on the choices of individual landowners, which are uncertain. There are key gaps in the science linking land use to service provision, such as how changes in land use will affect changes in carbon storage in soil or populations of particular species, making provision uncertain even when behavioral uncertainty is ignored. There are also key gaps in information pertaining to the link between services and benefits, making value uncertain even if provision is known. The value of water quality improvement, for example, depends as much on who uses the water and for what purpose as on the water quality itself.¶ ¶ Economic approaches typically use an expected utility framework to deal with uncertainty, where the value of each potential outcome is weighted by its probability of occurrence. This approach summarizes expected social net benefits across dimensions, as discussed above, but also across all possible outcomes that could occur given a management or policy choice. Using the expected utility framework, however, requires information about probabilities as well as values under all potential outcomes. For environmental issues involving complex system dynamics, such as climate change or the provision of ecosystem services, the list of possible outcomes in the future may be unknown, much less how to specify probabilities or likely values for each of these outcomes. Beyond the challenge of scientific uncertainty, there may also be uncertainty about the preferences of future generation and how they will value various outcomes. Inability to objectively quantify probabilities or values requires modifying expected utility, such as by using subjective judgments to establish probabilities or values, or setting bounds on decisions thought to pose unacceptable risks (for example, safe minimum standards). A particular challenge to making decisions under uncertainty arises from consideration of catastrophic outcomes. It is difficult to set probabilities on such events because they are rare, but small changes in assumptions about these probabilities can lead to large changes in policy advice.¶ ¶ People make mistakes, often in systematic and predictable ways. They tend to be overly optimistic, biased toward the present, and averse to losses. They have trouble thinking through complex problems, especially those with uncertainty. Given these facts, some analysts question the validity of using valuation studies that rely on observed choices, survey responses, or even deliberative processes among affected parties as an important input for setting environmental policy. The alternative, however, would be to delegate judgments about the relative value of outcomes to political leaders or scientific experts. Elected leaders, at least in theory, should reflect public values. Environmental scientists, however, have no special claim to understanding public values. In either case, there is no guarantee that top-down decisions will reflect the underlying values of the public at large any better than an imperfect reflection of values gathered through valuation exercises.¶ ¶ In principle, economic valuation methods can estimate value for all environmental attributes, either through inferences from observable behavior or responses in stated preference surveys. In practice, however, it is generally not possible to get a complete economic assessment of all environmental values. Some values connected with the environment are notoriously difficult to assess in monetary terms. For example, what is the monetary value of conserving species with important spiritual or cultural value? Some critics contend that individuals are cognitively incapable of evaluating tradeoffs between utilitarian goods (such as commodities and ecosystem services) and moral goods (such as the existence of a species). There are sharp disagreements between psychologists and economists—and among economists themselves—on this point. Even when it is possible in principle to estimate monetary values, there may be insufficient data to do so. Nevertheless, economic methods can provide evidence about the value of many important environmental attributes.¶ ¶ The value of valuation¶ ¶ Though difficult, collecting information about the relative values of alternative potential outcomes, in all of their multiple dimensions, is vital to good environmental management and policy decisionmaking. Setting environmental policy is not simply a matter of applying the best science, as important as that is. Environmental management and policy typically involve making decisions about tradeoffs among multiple objectives about which society cares. Making decisions about such tradeoffs involves making value judgments. If these judgments are to improve human wellbeing, they should reflect the underlying values of individuals affected by the policy.¶ ¶ Economic valuation methods applied in the context of environmental management and policy seek to inform decisionmaking by collecting information about the value of alternatives to affected individuals and then aggregating these values to determine an estimate of social net benefits. In simple benefit/cost analysis, the management or policy option with the highest social net benefits should then be the preferred option. The great advantage of the simple benefit/cost approach is that it incorporates economic valuation methods to represent values of the affected public, summarizes this information into a single ranking, and uses this ranking to help guide policy. Valuation information can also be combined with other decisions rules, such as those that minimize the risk of bad outcomes occurring.

#### Radical alternatives pave the way for authoritarian environmentalism.

Simon HAILWOOD, Philosophy @ Liverpool, ‘4 [*How to be a Green Liberal*, 2004, p. 155-156]

For me, the main worry emerging from such considerations is not that liberal societies are incapable of embracing meaningful change towards "eco-sanity", such that anarchism is the only hope. That hope seems more unrealistic - more utopian in that sense - than that of liberal reform. The main worry is that those from the authoritarian end of the spectrum will convince people that the liberal mainstream is inherently incapable of reform, and so must be replaced by more coercive forms of green politics, and people from the radical left will help with the critique, provide no realistic, non-utopian alternative themselves, thus leaving the door open for the "Leviathan or oblivion" school: nakedly authoritarian, radically hierarchical programmes regarding substantive political equality as an obstacle to progress. 10) Sometimes the point about the practical need to oppose the state is made with impatience about philosophy and abstract theorizing. This does not apply to Carter. But it does to Sale, for example, who denounces abstract philosophical discussion of ethical responses to the "environmental crisis", mainly because dithering over abstruse conceptual matters is to ignore the simple practical issue of scale. '°4 It would be better if those with such powerful rhetorical skills used them to further the green cause as continuous with furthering the liberal cause against more reactionary elements. Perhaps this is particularly true in the USA, clearly the main player in the scientific-industrial-capitalist global order and, in terms of environmental policy agenda, in various ways a beacon of unreconstructed unreason. That would probably be of greater practical benefit than giving fellow citizens of the modern world a collection of quasi-religiose blueprinting ideas coloured with the dismal tinge of an anxious instrumentalism. That is, it seems more practically feasible to seek to work with the flow of modernity in order to help channel it on to a course more respectful of nature. That it is, in principle, possible to do this within the terms of what is often taken to be the main political philosophy of modernity, has been the point of this book.

#### Command and control and regulations don’t set a price signal – invites litigation not innovation

Hsu 11 (Shi-Ling Hsu, Professor of Law at University of British Columbia – previously Associate Prof at George Washington School of Law, Senior Attorney & Economist for the Environmental Law Institute The Case for a Carbon Tax: Getting Past our Hang-ups to Effective Climate Policy, Island Press] Page 33-34)

In the United States, command-and-control regulation of green- house gas emissions would fall under the ambit of the Clean Air Act. The EPA, having issued the finding that greenhouse gas emissions,"18 "endanger" the "public health and welfare, is empowered to issue regulations, industry by industry, pertaining to greenhouse gas reduction measures that will be requited as a condition of a permit under the Clean Air Act. The Canadian counterpart to EPA, Environment Canada, issued an analogous finding far earlier (in 2005), that green- house gases fell within a statutory definition of "toxic substances," in that they, among other effects, "have or may have an immediate or long-term harmful effect on the environment or its biological diver- sitv."19 Environment Canada is thus also positioned to issue command- and-control-style greenhouse gas regulations, although other forms of regulation are possible under the Canadian statute.

One might think that command-and-control regulation, by potentially imposing the highest price on emitters, would be the most effective in re-ordering economies to be lower-carbon. The mistake is to equate an administrative price with a market price. Under command- and-control regulation, an administrative price is imposed by an agency. This price need not bear any relation to greenhouse gas emissions. Most often, the key consideration in setting standards is the state of technology of pollution abatement. If abatement technology seems "cheap" or "feasible," then it likely factors into the setting of an administrative standard. This is, in very rough measure, an agency's at- tempt to balance costs and benefits: if requiring abatement technology seems somehow "worth it," by an eyeball estimate of the compliance costs and environmental benefits, then it becomes law.

Over the past several decades, command-and-control regulation has been continuously and successfully attacked on efficiency grounds. The most common arguments ate that: (i) command-and-control regulation is clumsy, its uniformity of standards sometimes too stringent and sometimes too lenient, resulting in wasteful over-abatement m some cases and missed opportunities to abate more in other cases, (ii) fails to strike a correct balance between costs and benefits as administrative agencies make poor guesses about compliance costs, (iii) being a fixed administrative price, fails to offer incentives for emitters to find innovative ways of reducing emissions, and (iv) provides fodder for delay and litigation by well-funded and disgruntled industry groups.

These well-rehearsed criticisms are thoroughly treated elsewhere. I argue here that, in addition to these arguments, command-and- control regulation sends an uneven price signal to greenhouse gas emitters. While there is controversy over the amount of damages from greenhouse gas emissions, it is still worth making the price proportional to greenhouse gas emissions. Command-and-control regulation, be- cause it imposes a different requirement for each industry, imposes a different price for each industry. A price signal that is different from one industry to another is no price signal at all

, if the goal is to sort industries by carbon emissions. If the price wanes from industry to industry, then the sorting is not accomplished by carbon emissions, but by an administrative agency. Moreover, command-and-control regulation has in the past generated so much litigation, the administrative "price" often does not emerge at all. Because the locus of so much decision making and adjudication is at the administrative agency, and be- cause these decisions and adjudications invariably invite comparisons with those that affect other industries, perceptions of unfairness (accurate or not) run rampant through command-and-control regulation. So not only does an uneven price signal frustrate greenhouse gas reduction objectives, but sometimes litigation or just the threat of litigation erases the price signal completely.

## 2ac

### 2ac – Amerika

#### Markets are key to address free-rider problems—only markets can address individual incentives.

Stern 06 (Nicholas, Professor of Economics and Government and the Chair of the Grantham Research Institute on Climate Change and the Environment at the London School of Economics, “What is the Economics of Climate Change?” WORLD ECONOMICS • Vol. 7 • No. 2 • April–June 2006)

From basic game theory, we know that, for example, policy requires the promotion of a collaborative solution to games with ‘free-rider’ problems: in other words, the international community, if it is to act effectively, must find a collective global way forward, building clear long-term international agreements within which markets and entrepreneurs can function. Building such agreements will require a shared understanding of their consequences, including what the agreements ask of each interested party and the equity issues involved. It will also require finding incentive structures to foster economic, social and political perspectives that can make collaboration more likely.

The nature of the problem in terms of its causes and effects implies that a broad range of ethical perspectives are likely to be involved, including issues of consequentialism, equity, fairness, justice, freedom, rights, sustainability and stewardship. There are fundamental ethical differences among these approaches, but each would point towards a focus on similar measurable outcomes such as incomes, forms of capital and wealth, including the environment, health, education and ways of life.

There is much learning to be done about both the science and the economics. But the risks of severe outcomes and destabilising dynamics from the physical processes involved generate a powerful argument for strong and urgent action.

#### Sustainability arguments are wrong—can’t create sustainable reform without the 1AC

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Closely allied with the notion that economic growth is the main enemy of a sustainable environment is the conviction that capitalism, so good at producing growth, is a social and economic framework inconsistent with environmental goals. It is tempting but wrong to think of this as a fringe position. This anticapitalist bias arises from a longstanding Green focus on market failure, and has been promoted by some of the most mainstream figures in environmentalism, such as former Yale School of Forestry and Environmental Studies dean Gus Speth, who—not mincing words or evidencing any concern for conservative sensibilities—asserts, "The planet cannot sustain capitalism as we know it."" The rapturous reception accorded by many Greens to Naomi Klein's 2014 anticapitalist polemic, This Changes Everything: Capitalism vs. The Climate, demonstrates the continuing strength of this bias within the Green movement.

There are few Green books that do not at some point mention Garrett Hardin's 1968 article in Science, "The Tragedy of the Commons."12 This is because most Green engagement with market capitalism starts with the proposition that people acting only as economic animals in their own rational self-interest will be free riders. Free riders take advantage of any opportunity to use (to and past the point of abuse) public or ecological resources (as in the grazing rights on the commons or fish stocks in the ocean). Free riders also impose costs on others or society at large (e.g., through pollution, where the free rider imposes an "externality," or cost, on society that should properly be priced into its own cost of production). This predisposition and ability to abuse public resources and impose externalities in a laissez-faire market system is at the heart of much Green discomfort with leaving everything to the free-market economy.

A similar market failure arises on the value side of the equation: Greens observe that the market prices resources such as timber and minerals, but fails to value "ecological services" (like the role [END PAGE 88] of forests in protecting aquifers or of wetlands in buffering storm surges). These failures are related to the market's difficulty in valuing things that are as intricate as ecological systems, or in accounting for deferred consequences (such as the flood-buffering effects of wetlands over time in the face of sea level rise). As Speth puts it, "The result is that our market economy is operating on wildly wrong market signals, lacks other correcting mechanisms, and is thus out of control environmentally."13 This much is true. The solution, of course, is not to throw out the market system but to correct the market failures by, for example, a carbon tax that shifts the costs of the externality to the producer.

Market failures are not, however, the exclusive cause of the anti-capitalist tendency among Greens. Parts of the Green movement are influenced by a broad leftist distrust of markets and capitalism. This distrust was exacerbated after the debacle of 2008 and the rise among progressives generally of severe doubts about the particular risks attached to unfettered financial markets. These doubts can, I think, be excused, given the damage done in the last decade by irrational excess, both on Wall Street and in corporate America. The distinction between rational self-interest (good) and excessive greed (bad) is also a critical one for some on the right, as illustrated by Russell Kirk's worrying in 1953 that the withering of religion, with its prohibition against avarice, and "the decay of the old aristocratic prejudices against greedy speculation," could lead to "a vast and voracious concentration upon profits."14 This sense that "a vast and voracious concentration upon profits" may not be a good thing is shared both by traditional conservatives and the left.

Nonetheless, when Greens like Gus Speth take aim at capitalism, hostile conservatives shine a spotlight on the antimarket rhetoric and use it to paint the movement as socialistic. These old fault lines between socialism and capitalism have been revived by the virulent debate around capping carbon emissions, where forces on the right argue that confronting climate change threatens the free-market [END PAGE 89] system as we know it, and certain forces on the left agree, admitting that lowering global carbon emissions to the levels required to stabilize the climate will indeed be achieved "only by radically reordering our economic and political systems in ways antithetical to [the] 'free market' belief system." Canadian journalist and author Naomi Klein argues that this is a good thing, and that "the real solutions to the climate crisis are also our best hope of building a much more enlightened economic system-one that closes deep inequalities, strengthens and transforms the public sphere, generates plentiful, dignified work and radically reins in corporate power.”15 Her new book calls frankly for redistribution of wealth, what she calls “managed de-growth.” She writes that rightist ideologues who argue that action to limit climate change would spell the doom of capitalism actually have a better understanding of what is really required than mainstream environmentalists.

The anticapitalist flavor of "deep ecology" also provides an easy target for conservative critics such as Dinesh D'Souza, who wrote, "(S]ome environmentalists hold that the whole premise of modern technological capitalism, which is to supply the ever-increasing wants of man, is based on the false premise that the biosphere is ours for the ransacking. In the view of 'deep ecologists,' technological capitalism is a vicious, predatory enterprise because nature does not belong to us, we belong to nature.”16

Finally, despite the current Green movement's broad embrace of "environmental economics" and market-based solutions, thoughtful Greens understand that there remains an apparent disconnect between the deepest values of the Green movement and the mechanistic determinism of the market. The market deals with things that can be priced, and uses their prices to determine their values. When nature is looked at in terms of its values as a resource, as genetic information, and/or as provider of “ecological services,” prices can be fixed, and used to set priorities and maximize efficiency. But the idea of a transcendent value to nature is deeply [END PAGE 90] embedded in Green thinking. Simply put, some of environmentalism is about saving things whose value just cannot be priced. Aldo Leopold asked, "Do economists know about lupines?" and the question resonates deeply with many Greens, myself included. This sensibility, even if it highlights the limits of the market, does not require that market economics should be replaced with socialism or anything else. And, importantly, it provides a vital bridge to conservatives, who also recognize that certain values lie in a realm outside of the reach of the market.

#### Capitalism is sustainable and self-correcting---alternatives are a false diagnosis and the wrong solution.

Allison Schrager 20, an economist and senior fellow at the Manhattan Institute, 1/15/2020, "Why Socialism Won’t Work," https://foreignpolicy.com/2020/01/15/socialism-wont-work-capitalism-still-best/, Marsh

Capitalism is still the best way to handle risk and boost innovation and productivity.

With increasingly ubiquitous iPhones, internet, central air conditioning, flat-screen TVs, and indoor plumbing, few in the developed world would want to go back to life 100, 30, or even 10 years ago. Indeed, around the world, the last two centuries have brought vast improvements in material living standards; billions of people have been lifted from poverty, and life expectancy across income levels has broadly risen. Most of that progress came from capitalist economies.

Yet those economies are not without their problems. In the United States and the United Kingdom, the gap between the rich and poor has become intolerably large as business owners and highly educated workers in urban areas have become richer while workers’ wages in rural areas have stagnated. In most rich countries, more trade has brought a bigger, better variety of goods, but it has also displaced many jobs.

With social instability in the form of mass protests, Brexit, the rise of populism, and deep polarization knocking at the capitalist economies’ doors, much of the progress of the last several decades is in peril. For some pundits and policymakers, the solution is clear: socialism, which tends to be cited as a method for addressing everything from inequality and injustice to climate change.

Yet the very ills that socialists identify are best addressed through innovation, productivity gains, and better rationing of risk. And capitalism is still far and away the best, if not only, way to generate those outcomes.

Today’s socialism is difficult to define. Traditionally, the term meant total state ownership of capital, as in the Soviet Union, North Korea, or Maoist China. Nowadays, most people don’t take such an extreme view. In Europe, social democracy means the nationalization of many industries and very generous welfare states. And today’s rising socialists are rebranding the idea to mean an economic system that delivers all the best parts of capitalism (growth and rising living standards) without the bad (inequality, economic cycles).

But no perfect economic system exists; there are always trade-offs—in the most extreme form between total state ownership of capital and unfettered markets without any regulation or welfare state. Today, few would opt for either pole; what modern socialists and capitalists really disagree on is the right level of government intervention.

Modern socialists want more, but not complete, state ownership. They’d like to nationalize certain industries. In the United States, that’s health care—a plan supported by Democratic presidential candidates Elizabeth Warren (who does not call herself a socialist) and Bernie Sanders (who wears the label proudly). In the United Kingdom, Labour Party leader Jeremy Corbyn, who was trounced at the polls in mid-December, has set his sights on a longer list of industries, including the water, energy, and internet providers.

Other items on the socialist wish list may include allowing the government to be the primary investor in the economy through massive infrastructure projects that aim to replace fossil fuels with renewables, as Green New Deal socialists have proposed. They’ve also floated plans that would make the government the employer of a majority of Americans by offering guaranteed well-paid jobs that people can’t be fired from. And then there are more limited proposals, including installing more workers on the boards of private companies and instituting national rent controls and high minimum wages.

For their part, modern capitalists want some, but less, state intervention. They are skeptical of nationalization and price controls; they argue that today’s economic problems are best addressed by harnessing private enterprise. In the United States, they’ve argued for more regulation and progressive taxation to help ease inequality, incentives to encourage private firms to use less carbon, and a more robust welfare state through tax credits. Over the past 15 years, meanwhile, capitalist Europeans have instituted reforms to improve labor market flexibility by making it easier to hire and fire people, and there have been attempts to reduce the size of pensions.

No economic system is perfect, and the exact right balance between markets and the state may never be found. But there are good reasons to believe that keeping capital in the hands of the private sector, and empowering its owners to make decisions in the pursuit of profit, is the best we’ve got.

One reason to trust markets is that they are better at setting prices than people. If you set prices too high, many a socialist government has found, citizens will be needlessly deprived of goods. Set them too low, and there will be excessive demand and ensuing shortages. This is true for all goods, including health care and labor. And there is little reason to believe that the next batch of socialists in Washington or London would be any better at setting prices than their predecessors. In fact, government-run health care systems in Canada and European countries are plagued by long wait times. A 2018 Fraser Institute study cites a median wait time of 19.8 weeks to see a specialist physician in Canada. Socialists may argue that is a small price to pay for universal access, but a market-based approach can deliver both coverage and responsive service. A full government takeover isn’t the only option, nor is it the best one.

Beyond that, markets are also good at rationing risk. Fundamentally, socialists would like to reduce risk—protect workers from any personal or economywide shock. That is a noble goal, and some reduction through better functioning safety nets is desirable. But getting rid of all uncertainty—as state ownership of most industries would imply—is a bad idea. Risk is what fuels growth. People who take more chances tend to reap bigger rewards; that’s why the top nine names on the Forbes 400 list of the richest Americans are not heirs to family dynasties but are self-made entrepreneurs who took a leap to build new products and created many jobs in the process.

Some leftist economists like Mariana Mazzucato argue that governments might be able to step in and become laboratories for innovation. But that would be a historical anomaly; socialist-leaning governments have typically been less innovative than others. After all, bureaucrats and worker-corporate boards have little incentive to upset the status quo or compete to build a better widget. And even when government programs have spurred innovation—as in the case of the internet—it took the private sector to recognize the value and create a market.

And that brings us to a third reason to believe in markets: productivity. Some economists, such as Robert Gordon, have looked to today’s economic problems and suggested that productivity growth—the engine that fueled so much of the progress of the last several decades—is over. In this telling, the resources, products, and systems that underpin the world’s economy are all optimized, and little further progress is possible.

But that is hard to square with reality. Innovation helps economies do more with fewer resources—increasingly critical to addressing climate change, for example—which is a form of productivity growth. And likewise, many of the products and technologies people rely on every day did not exist a few years ago. These goods make inaccessible services more available and are changing the nature of work, often for the better. Such gains are made possible by capitalist systems that encourage invention and growing the pie, not by socialist systems that are more concerned with how the existing pie is cut. It is far too soon, in other words, to write off productivity.

Here, it is worth considering the lessons of a previous productivity boom: the Industrial Revolution. As the economist Joel Mokyr has shown, it took new innovations like the steam engine more than 100 years to appear in productivity estimates. The same could be happening today with smartphones and the internet. Meanwhile, even as that upheaval transformed the human experience, creating a more comfortable existence for most everyone, it was also messy and disruptive. The early part of that innovative cycle—like others since—displaced existing workers while the gains flowed to the owners of capital first, causing social instability.

This time around, the effects may end up being less wrenching: The divisions between owners of capital and workers are not as clear as they used to be. More Americans than ever own stock through their workplace retirement accounts. Stock ownership is on the rise in many non-U.S. capitalist economies, too. And several other countries, such as Australia and the United Kingdom, also offer retirement accounts, making their citizens shareholders as well. Unlike 200 years ago, workers’ interests are already more aligned with those of management.

#### Cap is good and sustainable – cycles of innovation and massive improvements in QoL prove

Cooper 16 – (2016, Mark, PhD from Yale, former Fullbright Fellow, Senior Research Fellow for the Institute for Energy and the Environment, Vermont Law School “Energy Justice in Theory and Practice: Building a Pragmatic, Progressive Road Map,” T. Van de Graaf et al. (eds.), The Palgrave Handbook of the International

Political Economy of Energy, pp. 687-92)

The Immense Leap in Material Well-Being Global Energy Justice provides important data on several key energy-intensive activities that deeply affect daily life (heat, light, power and transportation). In Fig. 28.1 , I augment that data with measures on population, income and total energy consumption, as well as technological change and developments in the state. Figure 28.1 identifies rates of growth in key activities that define the material conditions in which people live. I use a 100-year view to calculate the rate of improvement, which is consistent with eff orts to analyze distributive justice. *\*\* Fig. 28.1 Indicators of progress in human material conditions ( Sources : Based on data from: Benjamin, K. and Michael H. Dworkin, Global Energy Justice (Cambridge University Press, 2014, pp. 48, 312), heat, light transportation, power; Douglas North, Understanding the Process of Economic Change (Princeton, Princeton University Press, 2005), p. 89 US Bureau of the Census, https://www.census.gov/ populaton/international/data/worldpop/table\_history.php , UN 1999 where available, average of lower and upper summary elsewhere. Wikipedia for 2000, https://en.wikipedia.org/wiki/World\_population\_estimates ; J. Bradford De Long, Estimates of World GDP, One Million BC–Present, Standard Chartered, Technology: Reshaping the Global Economy, January 19, 2015, p. 11, technologies. https:// en.wikipedia.org/wiki/Westphalian\_sovereignty )* Lighting, heating, power and transportation are energy-intensive activities that receive a great deal of attention in the discussion of energy poverty and justice. Light, heat and power are central to defining the standard of living and, hence, the energy justice analysis. The direct link between energy consumption and income is also central to that discussion. Starting with the emergence of capitalism and accelerating in the industrial era, these four services exhibited a dramatic decline in cost, which made them affordable for an ever increasing number of people. I include three measures of the overall outcome of the economic development process—population growth, output per capita and energy consumption per capita. North ( 2005 , p. 89) points to population for an obvious reason: Statistical data … can get us part way in describing the magnitude of changes in the landscape. They provide dramatic evidence of the revolutionary changes in the human condition. Man’s subjugation of the uncertainties related to the physical environment is most clearly manifested in the explosive increases in population since the beginning of the modern age in the eighteenth century …. [T]his dramatic change along with major development in knowledge, technological progress, and scientifi c breakthroughs that contributed to this explosive development. The close correlation between GDP per capita and population is clear. GDP per capita and its growth have been the primary focal point of the analysis of economic growth and development for quite some time. The close correlation between GDP per capita and energy consumption per capita has also been a focal point of analysis. 12 The graph also identifi es several technologies that are widely seen as ushering in fundamental shifts in economic activity. An important and obvious point to be made is that these involve power and transportation technologies. Three of the recent examples involve energy—steam, internal combustion engine and electricity. Substituting mechanical power for human and animal power constitutes a major leap. The shift to electricity, considered a General Purpose Technology (Jovanovic and Rousseau 2005 ), 13 was one of the key factors in the second industrial revolution. Finally, at the bottom, the graph shows key developments in the structure of policy making. The nation-state was a key development that enabled the process of economic growth to gain traction (Acemoglu and Robinson 2012 , Figure 5). The Westphalian state was a key development. Eff orts to organize relations between states were the subject of a stream of treaties, but the graph shows the major eff orts to organize multilateral relations in the twentieth century. It is important to keep in mind that the graph is truncated. Prior to the year 1400, the rate of growth in the factors that affect material well-being was virtually nil. The data underscore the immense progress made in the material condition of society in the past three centuries. The dramatic change in the rates of progress is coincident with the emergence of capitalism and, in particular, the industrial revolution. The key message for the purpose of this analysis is strikingly clear. If we accept the proposition that human civilization dates back about 12 millennia, then the capitalist era is about 4% of human history. The industrial era covers the second half of that period. Measured by population, per capita income, heat, power, transportation, lighting, about 90 % of human progress has taken place in the most recent 2 % of human history, the very short period of capitalist industrialization. 14 The Virtuous Cycle of Progress and the Potential for Justice The progressive capitalist frame for a theory of justice launches from this dramatic change in the human condition. Obviously, it postdates much of the thinking of the ancient philosophers and early modern (preindustrial) political theorists who naturally make up a large part of the intellectual and cultural heritage of the Western concept of justice, as discussed at length the Global Energy Justice . There has been a dramatic transformation of the terrain of justice in three ways. • The capitalist industrial revolution has not only produced a dramatic improvement in the human condition, it has also created the possibility/ hope/expectation that there will be a massive and continuing improvement in the material well-being of people. Mankind has been freed from endless poverty and expects continuous economic growth and improvement in material conditions. • The improvement in material well-being comes with (and is in part dependent on) an increasing interdependence of economic activity (a refined division of labor and globalization). • Increasing wealth and improvements in communications (which are made possible by changes in energy technology, i.e. electrifi cation) have allowed more and more people to engage and participate more directly and forcefully in self-governance. In the capitalist industrial era we no longer have to treat human history as a kind of zero-sum, depleting resource story. The current generation should not be chastised for overconsuming scarce resources as long as it produces the means to maintain and improve the prospects of future generations. For the past quarter of a millennium, the groundwork for a much higher standard of living has been laid by each successive generation. Perez ( 2002 ) argues that capitalist development needs to be progressive in the sense I use the term. Technology is the fuel of the capitalist engine (Perez 2002 , p. 155). The potential for production and productivity grow this considerable. What is needed for its realization is a new space for the unhindered expansion of markets, favoring economics of scale and fostering a new wave of investment. this essentially means that adequate regulation … has to be established and an institutional framework favoring the real economy over the paper economy needs to be put in place … So the rhythm of potential grow this modulated by the qualitative dynamics of eff ective demand (Perez 2002 , pp. 114–116). Since market saturation is one of the main limits encountered in deploying the growth potential of a technology revolution, ensuring consistent extension of markets is the way to facilitate the pursuit of those goals. Consequently, it is progressive distribution and worldwide advances in development that can best guarantee a continued expansion of demand (Perez 2002 , p. 124). The impact of progressive capitalism on the terrain of justice involves more than simple progress. It also reflects the structure and process by which capitalism creates progress. Two key processes are involved. A discussion of these broad issues is beyond the scope of this chapter and has been off ered elsewhere (Cooper 2015 ). Here I emphasize two points that are central to the discussion of energy justice. • First, the explanation asserts that capitalism has given birth to recursive feedback loops, virtuous circles and cycles, of creative destruction and construction that creates a spiral of progress. • Second, the division of labor advances relentlessly, which ultimately increases human capital and promotes democratic equality. The stark contrast between the twenty-fi rst-century digital mode of production that is emerging and the twentieth-century mode of production described by Perez ( 2004 , 2009 ) underscores this process in several ways. First, the mass market production of the twentieth century was very much driven by fossil fuel consumption. The digital mode of production is much more dependent on electricity. Second, technologies are emerging to power more and more activity with electricity. Third, the heterogeneity of products creates niche markets. Fourth, the new division of labor is much more global and complex, shifting a great deal of activity and autonomy to the edge of the networks. The virtuous cycles of economic progress are interconnected in the sense that they tend to produce the key ingredients to solve the next great challenge that faces the economic system. Perez builds this into her model of capitalism by linking Schumpeter’s concept of creative destruction to the equally powerful process of creative construction. The result is a spiral of development. While analysis of this process is also beyond the scope of this chapter, one aspect of the current phase of development is critical to the discussion of energy justice. Industrial revolutions produce the ingredients necessary to solve the challenges that they faced. ^his is certainly true of the third industrial revolution in the energy sector, the electricity sector in particular. Dynamic technological development has produced the tools for the transformation of the energy sector that can solve the problem of climate change, while dealing with the challenge of energy justice. The central station model of base-load facilities combined with high cost peaking power and massive amounts of pollution, including greenhouse gas emissions, has been undercut by dramatically declining cost for distributed renewables and storage. The Information and Communications Technologies revolution has now made it possible to integrate and manage demand and supply rather than build central station, fossil-fuel-based powered facilities that passively follow load. Economic analyses of the cost of addressing energy justice that were off ered as it became a topic of increasing attention a decade ago are obsolete as a result of dramatic innovation and competition (Cooper 2014b ). An electricity sector centered on smaller scale, more flexible resources should facilitate and lower the cost of addressing both energy poverty and climate change. this technological revolution not only delivers aff ordable electricity, but it also does so in a manner that utilizes local resources and fosters local autonomy. As has always been the case, however, there is a struggle between the incumbent and the new entrant technologies over the speed and ultimate confi guration of the new system and which values will be expressed by the system. In short, the energy sector, in general, and the electricity sector, in particular, are at the “turning point” (Perez 2002 ) or “critical juncture” (Robinson and Acemoglu 2012 )\ of the “quarter-life crisis of the digital mode of production” (Cooper 2013b ). Political economy is about driving the economy in the right direction with policy. While the outcome is uncertain, the technological progress suggests that prospects are good for a successful deployment of the third industrial revolution. 3 A Broad Frame for Justice Building on the intense discussion of energy justice presented in the two books noted in the introduction, the theory of distributive justice off ered below is intended to provide a framework that makes the inclusion of progressive values and the policies that address energy poverty more compelling in the process of institutional recomposition that is taking place. Needless to say, this was the purpose of the Encyclical on climate change. The analysis makes several basic points that lead to an important conclusion— distributive justice is not an afterthought to a dynamic economic system, it is an indispensable, core ingredient of success: • Markets have a critical role as the driver of progress. • The state plays an equally critical role with policies to guide the economy toward a stable growth trajectory and in a progressive direction by placing constraints on property and the accumulation of power. • Egalitarian relationships are consistent with the need to advance the division of labor. • Autonomy and choice for individuals plays a critical role in promoting effi ciency and democracy. • The convergence and synergy between an inclusive market and an inclusive state is necessary for progress to continue.

#### Business as usual approaches are adapting to climate change through militarism and authoritarianism. Only the aff’s political and social challenge can confront this emerging ‘climate fascism’.

Parenti 16 (teaches liberal studies at NYU and is a contributing editor at the Nation Magazine, Christian “The Catastrophic Convergence: Militarism, Neoliberalism and Climate Change” in *The Secure and the Dispossessed*, ed. by Buxton and Hayes, 2016, p. 34-36)

The watchwords of the climate discussion are mitigation and adaptation. We must mitigate the causes of climate change, while adapting to its effects. Mitigation means drastically cutting our production of carbon dioxide and other greenhouse gases – such [END PAGE 34] as methane and chlorofluorocarbons – that prevent the sun’s heat from radiating back out to space. Mitigation means moving towards clean energy sources such as wind, solar power, geothermal and tidal kinetics. It means closing coal-fired power plants, weaning our economy off oil and building a smart electrical grid.

Adaptation, on the other hand, means preparing to live with the effects of climatological changes, some of which are already underway, and some of which are inevitable, that is, ‘in the pipeline’. Adaptation is both a technical and a political challenge.

Technical adaptation means transforming our relationship to nature as nature transforms: learning to live with the damage we have wrought by building seawalls around vulnerable coastal cities, giving land back to mangroves and everglades so they may act to break tidal surges during giant storms, opening wildlife migration corridors so species can move north as the climate warms and developing sustainable forms of agriculture that can function on an industrial scale, even as weather patterns gyrate wildly.

Political adaptation, on the other hand, means transforming humanity’s relationship to itself, transforming social relations among people. Successful political adaptation to climate change will mean developing new ways of containing, avoiding and de-escalating the violence that climate change fuels. That will require economic redistribution and development. It will also require a new diplomacy of peace building.

But the military-led strategy for dealing with climate change suggests another type of political adaptation is already under way, which might be called the ‘politics of the armed lifeboat’: responding to climate change by arming, excluding, forgetting, repressing, policing and killing. One can imagine a green authoritarianism emerging in rich countries, while the climate crisis pushes the Third World into chaos. Already, as climate change fuels violence in the form of crime, repression, civil unrest, war and even state collapse in the Global South, the North is responding with a new authoritarianism. The Pentagon and its European allies are actively planning a militarised adaptation, which emphasises the long-term, open-ended containment of failed or failing states – counterinsurgency forever.

This sort of ‘climate fascism’ – a politics based on exclusion, segregation and repression – is horrific and bound to fail. The struggling states of the Global South cannot collapse without eventually taking down wealthy economies with them. If climate change is allowed to destroy whole economies and nations, no amount of walls, guns, barbed wire, armed aerial drones and permanently deployed mercenaries can save elites from a planet in collapse.

Conclusion

The catastrophic convergence offers a way to think about climate change that can help reveal its more obscured political impacts. The catastrophic convergence also has implications for how we should adapt and mitigate. If climate change acts through and by exacerbating pre-existing crises, then it is imperative that climate adaptation [END PAGE 35] and mitigation act upon those same crises. Proper adaptation requires addressing the pre-existing crises – militarism and neoliberalism – through planning and socially necessary investment.

Societies suffering from continued neoliberal austerity measures, and a new round of counter-insurgency now delivered under the framework of the war on terror, cannot be expected to address the implications of climate change. Real mitigation likewise requires moving away from an unbridled free market economic orthodoxy that is only hindering our attempts to cope with climate change.

#### Social costs are key--starting low and increasing quickly CAUSES warming.

Jensen 15 (Svenn Jensen 15, assistant professor at the Norwegian University of Life Sciences; Kristina Mohlin, Economist at the Environmental Defense Fund; Karen Pittel, professor at the University of Munich and heads the Center for Energy, Climate and Exhaustible Resources at the Ifo Institute of Economic Research; Thomas Sterner is a professor at the University of Gothenburg and senior advisor to the Environmental Defense Fund; Summer 2015, “An Introduction to the Green Paradox: The Unintended Consequences of Climate Policies,” Review of Environmental Economics & Policy, Vol. 9, No. 2, p. 246-265) \*\*itallics in original

The green paradox refers to an outcome in which climate policies such as carbon taxes, which are aimed at reducing carbon emissions, instead have the opposite effect: emissions increase, at least for some period of time. The recent debate about the green paradox was initially triggered by Sinn (2008), who focused on one specific reason for this paradoxical outcome: the effect of climate policies on the long-run profits (more specifically, scarcity rents) that owners of fossil resources expect to earn from selling their resources *over time*. More recently, the term green paradox has been used to more broadly describe unintended consequences of climate policies.

For economists, the solution to environmental problems like climate change is a Pigovian tax (i.e., a tax that is equal to the social marginal damage from emissions) or an equivalent policy. However, for political reasons, it is likely that a carbon tax will not be set according to the Pigovian principle but rather will start low and then rise over time. A green paradox arises if this policy backfires and the environmental problem worsens. The culprit here is the reaction on the *supply side* of the fossil fuel market. Because fossil fuels are nonrenewable resources, their prices reflect not only the cost of production but also their scarcity. Thus, owners of fossil fuels enjoy scarcity rents and maximize their profits by deciding when to extract their coal, oil, or gas reserves. If a future tightening of climate policy threatens to decrease future scarcity rents, then to maximize profits, fossil fuel owners will decide to extract less in the future and extract more today instead. This forward shift in extraction is known as the weak green paradox. If, despite climate policy, resource owners can still extract almost all of their resources profitably, then the forward shift in extraction might actually increase cumulative damages—an outcome known as a strong green paradox.

#### Law driven social change is empirically proven—but ethical confrontation is necessary.

Karl S. COPLAN, Professor of Law, Pace University School of Law and Co-Director, Pace Environmental Litigation Clinic, 16 [“Fossil Fuel Abolition: Legal And Social Issues,” *Columbia Journal of Environmental Law*, 41 Colum. J. Envtl. L. 223, June 28, 2016, Accessed Online through Emory Libraries]

Law-driven social changes of this magnitude are not unprecedented, but seem relatively few. Climate activists in the United States consciously draw on the civil rights movement of the 1960s in both their rhetoric and their tactics, hoping to repeat the relatively successful social change accomplished by 1960s civil rights legislation. n240 However, the civil rights struggle is not the only paradigm for fundamental social and economic change driven by law. Other examples of such fundamental change include abolition, prohibition, gender equality, school desegregation, and to a lesser extent, the twentieth century development of the administrative state, the New Deal, and the 1970s environmental law revolution. At least one of these social change initiatives (prohibition) was an abject failure, another (abolition) was a complete success. The others have had moderate--but incomplete--success at achieving the degree of social restructuring.

[\*273] While climate activism has begun to take on the mantle of the "New Abolitionism," climate activists and law reform advocates have yet to adopt the implication of this sobriquet--that the proper response to human induced climate change is a total ban on the burning of fossil fuels. n241 Rather, climate law reform advocates argue for putting a price on carbon, effectively converting the problem from one of moral and ethical responsibility for destruction of the planetary ecosystem to one of proper economic allocation of a limited resource. n242 It is the premise of this Article that such a ban is the logical and rhetorically consistent response to human-induced climate change, and that the abolition movement of the eighteenth and nineteenth centuries provides the most promising analogue for successful law-induced cultural reform. Conversely, prohibition serves as a cautionary example of a failed law reform movement; the civil rights movement may be a flawed analogue. In short, the climate movement (at least in the United States) consciously models itself on the civil rights movement, but bears some unfortunate similarities to the temperance movement of the nineteenth and twentieth centuries, and needs to become more like the globally successful movement for the abolition of slavery of the eighteenth and nineteenth centuries.

#### Reducing consumption is devastating for billions dependent on high levels of global demand.

Karlsson 9 (Rasmus, Political Science at Lund, “A global Fordian compromise?—And what it would mean for the transition to sustainability” Envt’l Science and Policy 12 p. 191)

Taking this provocative statement as a starting point, I will now turn my attention to three different problems related to the anatomy of such a possible future reduction. 2.1. Unintended consequences Witnessing how the subprime mortgage fallout has spread around the world over the last year, it is easy to see that not only is the world economic system highly interdependent, its foundations may also be somewhat shakier than commonly understood. The very capitalistic system as we know it (with stock markets, interest rates and government treasury bonds) is built around the single premise of long-term economic growth. Any politically motivated reduction in consumption, especially of the more dramatic kind envisaged by radical Greens, is likely to have numerous and probably even **disastrous consequences** for the world economy. Unfair as the current terms of trade may be, the **livelihood of billions of people** depend on that there is a global demand for textiles, food and a whole range of other consumer goods. Only if very carefully orchestrated can that demand be scaled back piece by piece, yet Arne Næss is not alone in arguing, ‘‘the longer we wait the more drastic will be the measures needed’’ (Næss, 1989, p. 31). Most likely, any such urgency would come at a high human toll. Remembering how notoriously difficult it was to plan the economy from above in the communist countries (Ericson, 2006), dismantling global chains of commerce appears to be like a **gigantic Mikado game** in which we cannot easily tell what should go first. It is not certain that what appears as the luxury of some is not intricately connected to the provision of the daily bread of others.

#### Climate change is regressive, the plan’s tax and dividend policies allow rebates to provide adaptation--only the plan’s multi-prongong approach to remedying climate change regressivity

**Durning 10** – Director at Sightline Institute, a sustainability center (Alan, “Climate and Race,” Grist.org, January 20, 2010, http://grist.org/article/climate-and-race/)

Because the vagaries of the fossil fuel economy and of climate change penalize people of color, the clean-energy economy is especially beneficial for people of color. Getting off the fossil-fuel rollercoaster prevents price spikes that hurt them and reduces the frequency of recessions, which hurt them even more.

Furthermore, well-designed climate pricing compensates for the regressive and racially disproportionate toll of climate disruption and of the fossil fuel economy. In this chart, Hoerner and Robinson model the net financial effect of a [cap-and-dividend](http://daily.sightline.org/resolveuid/5b5960975c26f67f8fc9c86a7283d70e) climate policy, in which authorities auction all carbon permits and distribute the proceeds in equal payments to all residents. The chart shows the net effect of higher energy prices and carbon dividend payments to households, expressed as a percentage of household expenditur  
es.

(Well, actually, the chart is an even better illustration of a [tax-and-dividend policy](http://daily.sightline.org/resolveuid/16bcced07c0112ed54062665c355e615) with a charge of $50 per metric ton of carbon dioxide. But the difference between a $50 carbon tax and a carbon permit auction that happens to settle on a $50 carbon price is immaterial for this case.)

As the chart shows, the policy approach of cap and dividend, recently [proposed in an imperfect form by Senator Maria Cantwell](http://daily.sightline.org/resolveuid/81cd3d5870ec9c9787e0397ff0c7b248) and the [endpoint by 2030 of the Waxman-Markey ACES bill that passed the US House in June of 2008](http://daily.sightline.org/resolveuid/96b57ad6f4afb6f0575470858116190d), yields substantial net gains for all Americans below the 70th percentile and only small losses for those above that level. African Americans gain more (or lose less) than whites, according to Hoerner and Robinson’s estimates.

Unfortunately, no one has yet estimated the household budget impacts of climate policy on other racial and ethnic groups, especially Hispanics. My hunch is that the results would look similar to those for African Americans, but more research is needed.

Furthermore, these figures are for the entire United States. The specific distributional impacts in the Pacific Northwest—including in British Columbia—are likely to be somewhat different. Still, the general pattern would likely hold.

Hoerner and Robinson model the impacts of one more policy approach. They call it a “Climate Asset Plan.” Assuming the same $50/ton carbon dioxide price, they modeled the results for a combination of equal per-person dividends and substantial public investments in a clean-energy transition such as energy efficiency, building weatherization, and renewable energy programs. (The Climate Asset Plan, in fact, is full of the kinds of things we’ve been writing about in our[Green Jobs series](http://daily.sightline.org/resolveuid/088587ad86e672c01e9e5f647ef6cd23) and that are written into both [House](http://daily.sightline.org/resolveuid/96b57ad6f4afb6f0575470858116190d)and [Senate](http://daily.sightline.org/resolveuid/befb903183487bcf176721c9d3c145f2) [versions](http://daily.sightline.org/resolveuid/81cd3d5870ec9c9787e0397ff0c7b248) of federal climate legislation.)

The upshot: Hoerner and Robinson conclude that the best kind of climate policy for African Americans’ household budgets—as for those of non-Hispanic whites—is a combination of citizen rebates and public investments in the clean-energy transition. They believe that such a plan would not only slow catastrophic climate change, start getting us off the fossil fuel rollercoaster, and cushion us from job-killing recessions but also boost spending power for households at every income level. And it would help most those who have done the least to cause—and stand to lose the most from—climate disruption: people of color.

All of which I take as exceptionally good news: [efficient, fair, and effective climate policy](http://daily.sightline.org/resolveuid/2c504b2b4d71d6cc3eb592cda4532341) is not only an economic and environmental imperative. It would mark a singular victory for civil rights.

#### Pragmatism is key—sacrificing the short term gains of the 1AC in search for purity fails

Pielke 19 (Roger, faculty of the University of Colorado, “The Yawning Gap Between Climate Rhetoric and Climate Action”, https://www.forbes.com/sites/rogerpielke/2019/09/19/the-yawning-gap-between-climate-rhetoric-and-climate-action/?sh=289ce2e2ec46)

A better explanation for the gap between action and calls for action is the absence of workable policy proposals at the scale of what is needed to start making progress on accelerating decarbonization. Much of what we will see tomorrow with the planned climate strike and next week at the United Nations will represent a victory of exhortation over workable policy.

Demands for action cannot lead to actual action in the absence of viable options. Viability has technical, political, social elements, and more. Scientists have done their job in calling attention to the problems posed by climate change now and in the future. Political advocates, including youth activists, have also done their job in helping to raise the salience of the issue among the public. The job now sits with politicians and those who support them.

But demanding “action” is not enough. Politicians need policy options in order for action to occur. Climate policy is incredibly complex, and options won’t simply emerge from legislative halls. More effort is needed from policy experts to develop, propose, debate and test new paths forward.

Some climate advocates seem to believe that we simply need to get new politicians who can better support the policies that have been tried – and repeatedly failed – for the past generation. Perhaps a better option is to open up the climate discussion to a broader set of voices and views in order to generate options that can be implemented and show results in the short term, based on the politicians we have rather than the ones climate advocates might prefer.

PwC tells us that we need to average a greater than 11% rate of decarbonization for the remainder of this century to achieve deep decarbonization. No one knows how to do this. We are currently at a 1.6% annual rate of decarbonization. If we are to ever get close to 11%+ we will have to learn how to achieve 2%, 3% 4% and so on. It is far more important to figure out how to start meeting the decarbonization challenge, than it is to know how it will end.

The gap between words and deeds on climate policy exists – at least in part – because we have failed to prioritize the short term and the next steps we should take to start what will be a journey of this century. So long as we favor exhortation to act in the absence of practical actions that can meet real-world tests of policy and politics, climate change will continue to be a potent political symbol, but with little connection to actual decarbonization of the global economy.

## 1ar

### 1ar – Amerika

#### Renewables are inevitable in the long-term—only transition now solves climate change

Timmons 14 - Assistant Professor of Environmental Economics at the University of Massachusetts, Boston, Massachusetts (David, “The Economics of Renewable Energy,” Global Development And Environment Institute @ Tufts)

**Renewable energy will be adopted when fossil fuels have become scarce**∂ **enough that they are more expensive than renewables, i.e. when fossil fuels are**∂ **economically depleted**. In Figure 8, increasing fossil-fuel extraction cost is indicated by∂ the upward-sloping price path for fossil fuel (MCfossil). Economic depletion of fossil fuels∂ could take a very long time. There is still a large stock of liquid oil in the ground, and∂ new technologies make it cheaper to extract oil from shale formations. We also have∂ close substitutes for oil from oil wells, like oil from tar sands and synthetic oil made from∂ coal. Greater supplies of natural gas are also available using hydraulic fracturing∂ (“fracking”) technologies, and extensive reserves of coal remain to be exploited. But∂ many of these new technologies do involve higher costs, so **an upward trend in fossil**∂ **fuel prices over time is likely**.∂ 0∂ 2∂ 4∂ 6∂ 8∂ 10∂ 12∂ 14∂ 16∂ Cents per kilowatt-hour∂ 32∂ Figure 8. Renewable energy transition dynamics∂ Declining Renewable Energy Costs∂ **At the same time fossil fuel prices rise, new technology will likely reduce**∂ **renewable energy costs, as indicated by the downward-sloping price path for renewable**∂ **energy** (MCrenewable) in Figure 8. At time t1, the supply paths for fossil fuels and∂ renewable energy cross and costs are equal. After time t1 renewable energy will be less∂ expensive than fossil fuels, and market forces will then accomplish the renewable∂ transition with little or no assistance.∂ Where this has already happened, renewables are prevalent. For example, in∂ Iceland geothermal hot water is less expensive than coal or oil for heating buildings, and∂ most buildings are now heated with geothermal water (though government assistance∂ was necessary to develop the needed district heating systems). Similarly, hydropower is∂ already widely employed where it is cheaper than alternatives, for example in the U.S.∂ Pacific Northwest.∂ While there are success stories for renewable energy technology, the timing of∂ improvements needed for renewables to displace fossil fuels is uncertain. For example,∂ better ways to produce solar photovoltaic panels are lowering panel production cost, but∂ we still have costs of daily and seasonal intermittency. Cellulosic ethanol technology∂ allows ethanol production from switchgrass rather than corn, but land availability still∂ places constraints on switchgrass production. Better technology can lower renewable∂ energy costs to some extent, but cannot change fundamental characteristics of energy∂ sources.∂ This is particularly obvious at the margin: while large-scale hydropower and∂ biomass have the potential to deliver energy near current prices for fossil fuels,∂ quantities of these energy sources are very limited compared to current usage, and are∂ not expandable in many locations. Solar PV and offshore wind may be the only∂ renewable sources abundant enough to displace fossil fuels. While costs of these∂ technologies are declining, they are decreasing at a decreasing rate, as shown in Figure∂ P∂ MCrenewable∂ Time∂ MCfossil∂ SMCfossil∂ t1 t2∂ 33∂ 3. It is unclear when solar PV and offshore wind energy prices will reach parity with∂ fossil fuels.∂ As shown in Figure 9, global use of solar and wind power has grown rapidly, with∂ accelerating growth in recent years. According to a recent report by the U.S.∂ Department of Energy, “the installed capacity of global and U.S. photovoltaic (PV)∂ systems has soared in recent years, driven by declining PV prices and government∂ incentives. The U.S. Department of Energy’s SunShot Initiative aims to make PV cost∂ competitive without incentives by reducing the cost of PV-generated electricity by about∂ 75% between 2010 and 2020.” (DOE 2012)∂ Figure 9: Growth of Solar PV and Wind Installations (2003-2012)∂ Source: Worldwatch Institute (2014).∂ According to the 2014 report of the Intergovernmental Panel on Climate Change,∂ since 2007 “Many renewable energy (RE) technologies have demonstrated substantial∂ performance improvements and cost reductions, and a growing number of RE∂ technologies have achieved a level of maturity to enable deployment at significant∂ scale” (IPCC 2014). Innovative methods for consumer financing of solar installation are∂ also being widely promoted (see Box 6).∂ 34∂ Box 6: Financing Solar Installation∂ Declining costs for solar energy systems, combined with federal tax incentives,∂ have brought them within reach of many consumers. But some barriers remain. Solar∂ photovoltaic power is still not competitive at the wholesale level (see Figure 2). A huge∂ concentrating solar power plant in the Mojave Desert of southern California opened in∂ 2014, but despite its optimal location the prospects for future development of such∂ plants is limited:∂ “The Ivanpah solar power plant stretches over more than five square miles of the∂ Mohave Desert. Almost 350,000 mirrors the size of garage doors tilt toward the sun∂ with an ability to energize 140,000 homes. The plant, the first electric generator of its∂ kind, could also be the last. Since the project began, the price of rival technologies has∂ plummeted, incentives have begun to disappear, and the appetite among investors for∂ mammoth solar farms has waned. Although several large new projects have been∂ coming online in recent months, experts say fewer are beginning construction and not∂ all those under development will be completed” (Cardwell and Wald 2014).∂ At the same time, solar has been making great strides at the retail level. The∂ economic advantage of installing a solar system on an individual residence or business∂ is that distribution costs, which can be about half the final costs of electricity, are∂ avoided.3 This means that, as shown in Figure 2, solar PV is entering the competitive∂ range at the retail level. Shared community solar arrays are providing a means for∂ residential customers whose own property is not suitable for solar installation:∂ “Like many consumers, David Polstein had already done much to reduce energy∂ use in his large Victorian home in Newton, Massachusetts. He replaced his appliances∂ with energy-efficient models, installed better heating and put in new insulation. But he∂ was unable to get a solar system to reduce his utility bill because his roof is too small∂ and shady. . . Now, that could be changing. Mr. Polstein is considering joining a∂ community solar garden that is one of many similar new arrangements now available in∂ Massachusetts. Through the approach—largely pioneered in Colorado and spreading∂ across the country—customers buy into a solar array constructed elsewhere and∂ receive credit on their electricity bills for the power their panels produce. . . it is among∂ the profusion of financing mechanisms meant to encourage the development of solar∂ energy, from residential leasing programs to crowdfunding. The combination of∂ plummeting prices for solar equipment and installation and generous federal and state∂ incentives has widened their appeal” (Cardwell 2014).∂ Solar installations involves high upfront costs, but consumers are rewarded with∂ lower—often zero—electric bills. If electric costs rise in future, either due to limits on∂ other supply sources or policies such as carbon taxes, the installed systems would∂ become even more beneficial in terms of avoided electric costs∂ 3 If residential systems are set up to sell power back to the grid during sunny periods and buy grid power∂ at night, distribution costs are involved, but these are often offset by feed-in tariffs that provide a favorable∂ rate to home solar systems – a form of subsidy (see section on renewable transition policies below). ∂ 35∂ Accounting for Fossil Fuel Externalities∂ **If the only issue were fuel availability, it would not necessarily be a problem for**∂ **society to take a long time transitioning to renewable energy. But of course there is**∂ **another issue: combustion of fossil carbon creates carbon dioxide, which causes**∂ **climate change**. Most scientists believe it is already too late to avoid significant damage∂ from climate change, and **waiting until fossil fuels are exhausted to deploy renewable**∂ **energy sources could be catastrophic for civilization**. **This creates a strong argument for**∂ **internalizing the expected costs of climate change into the price of fossil fuels**.

#### Renewables can scale up without being bad.

Magill 14—Science writer [Bobby, “Renewables Are as Green as You'd Expect,” *Scientific America*, 8 Oct, <https://www.scientificamerican.com/article/renewables-are-as-green-as-you-d-expect/>, accessed 7 Jan 2017]

So just how green are these sources of low-carbon renewable electricity? Pretty green, it turns out.

Rolling out wind and solar power projects across the globe through 2050 will probably have a very low climate and environmental impact and even reduce air pollution despite the need for extracting pollution-intensive raw materials for those wind, solar and hydropower projects, according to new research published Monday.

As part of the new Norwegian University of Science and Technology study, researchers conducted the first-ever lifecycle analysis of a wide-scale global rollout of new wind, hydro and solar power plants, asking whether shifting from coal and natural gas power generation to renewables would increase or decrease certain types of pollution.

Generally, there isn’t much known about the environmental and climate costs of a global shift from fossil fuels to renewables and how that shift affects pollution from producing raw materials used in solar panels and wind turbine blades such as copper, concrete, aluminum, indium and other materials, according to the study.

Wind turbines require up to 14 times the iron needed for fossil fuel power generation, and solar photovoltaics require up to 40 times the copper than traditional coal, oil or natural gas-fired power plants, according to the study.

But over time, the environmental impact of extracting those raw materials declines, pollution decreases and the total quantity of those materials likely needed for renewables is a fraction of the volume of those materials being mined today,

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the study says.

The researchers assumed that solar, wind and hydropower will make up 39 percent of total global power production in 2050, up from 16.5 percent in 2010, requiring 1.5 gigatons of bulk raw materials for construction.

“I was surprised that all the pollution went down for renewables,” the study’s lead author, Edgar Hertwich, an energy and process engineering professor at the Norwegian University of Science and Technology, told Climate Central. “I expected some of the toxics might be rising because of the materials used. Metal ores contain a lot of heavy metals. I expected that to be significant. I was really surprised it didn’t show up.”

When compared to coal-fired power plants, renewables come out on top because wind and solar power generation requires no additional raw material over the lifespan of the turbine or solar panel. Coal-fired plants, on the other hand, require continued mining of coal, he said.

The study, published Monday in the journal Proceedings of the National Academy of Sciences, concludes that new renewable power installations would increase the demand for iron and steel by 10 percent by 2050, and the copper that would be needed for photovoltaic systems are equivalent to two years of current global copper production.

“The amount of material having to move for coal is more than metal moved for renewables,” he said.

Even when solar and wind power generators need to be rebuilt, raw materials can be recycled from older power generators, he said.

#### No financial collapse – reforms solve – crises only reinforce resilience of capitalism

Foroohar 16 (Rana, assistant managing editor at TIME and the magazine’s economics columnist, “American Capitalism’s Great Crisis,” May 12, http://time.com/4327419/american-capitalisms-great-crisis/)//cmr

It's a depressing state of affairs, no doubt. Yet America faces an opportunity right now: a rare second chance to do the work of refocusing and right-sizing the financial sector that should have been done in the years immediately following the 2008 crisis. And there are bright spots on the horizon. Despite the lobbying power of the financial industry and the vested interests both in Washington and on Wall Street, there's a growing push to put the financial system back in its rightful place, as a servant of business rather than its master. Surveys show that the majority of Americans would like to see the tax system reformed and the government take more direct action on job creation and poverty reduction, and address inequality in a meaningful way. Each candidate is crafting a message around this, which will keep the issue front and center through November. The American public understands just how deeply and profoundly the economic order isn't working for the majority of people. The key to reforming the U.S. system is comprehending why it isn't working. Remooring finance in the real economy isn't as simple as splitting up the biggest banks (although that would be a good start). It's about dismantling the hold of financial-oriented thinking in every corner of corporate America. It's about reforming business education, which is still permeated with academics who resist challenges to the gospel of efficient markets in the same way that medieval clergy dismissed scientific evidence that might challenge the existence of God. It's about changing a tax system that treats one-year investment gains the same as longer-term ones, and induces financial institutions to push overconsumption and speculation rather than healthy lending to small businesses and job creators. It's about rethinking retirement, crafting smarter housing policy and restraining a money culture filled with lobbyists who violate America's essential economic principles. It's also about starting a bigger conversation about all this, with a broader group of stakeholders. The structure of American capital markets and whether or not they are serving business is a topic that has traditionally been the sole domain of "experts"—the financiers and policymakers who often have a self-interested perspective to push, and who do so in complicated language that keeps outsiders out of the debate. When it comes to finance, as with so many issues in a democratic society, complexity breeds exclusion. Finding solutions won't be easy. There are no silver bullets, and nobody really knows the perfect model for a high-functioning, advanced market system in the 21st century. But capitalism's legacy is too long, and the well-being of too many people is at stake, to do nothing in the face of our broken status quo. Neatly packaged technocratic tweaks cannot fix it. What is required now is lifesaving intervention. Crises of faith like the one American capitalism is currently suffering can be a good thing if they lead to re-examination and reaffirmation of first principles. The right question here is in fact the simplest one: Are financial institutions doing things that provide a clear, measurable benefit to the real economy? Sadly, the answer at the moment is mostly no. But we can change things. Our system of market capitalism wasn't handed down, in perfect form, on stone tablets. We wrote the rules. We broke them. And we can fix them.