## 1

#### Trucker strikes are effectively impossible in the status quo, but the affs ease of unionization changes that

Premack ’19 [Rachel, senior investigations reporter at Business Inside, “There's a stark reason why America's 1.8 million long-haul truck drivers can't strike”, 10-21-2019, Business Insider, https://www.businessinsider.com/trucking-truck-driver-truckers-strike-reasons-2019-10]//pranav

The Motor Carrier Act of 1980 removed many of the cumbersome regulations that the previous law, passed in 1935, had put in place. Most notably, it allowed new trucking companies to open with relative ease and removed many of the route regulations. Companies also had more control over changing their rates. The law was passed by President Jimmy Carter, who declared that the MCA would save consumers as much as $8 billion ($25 billion in 2018 dollars) each year. Following the passing of the MCA, truck drivers' salaries tumbled. From 1977 to 1987, mean truck driver earnings declined 24%, according to research by Wayne State University economics professor Michael Belzer. And from 1980 to the present day, a Business Insider analysis found that median trucking wages have sunk as much as 35.8% in some metropolitan areas. "To be able to be a truck driver used to be quite a good blue-collar, middle-class job, but over the past 40 years, it has kind of dwindled away," Gordon Klemp, principal of the National Transportation Institute, previously told Business Insider. Unions also lost much of their power. Membership in Teamsters, which was once one of the most powerful unions around, has declined dramatically. In 1974, Belzer wrote that there were 2,019,300 truckers in Teamsters. Now, there are 75,000. When truck drivers were largely in Teamsters, work stoppages were common — and sometimes quite dramatic. In 1970, a nationwide trucker strike went on for more than a month, dealing a serious economic blow in cities like Chicago and St. Louis. In Cleveland, Ohio, the impacts even became one of domestic security as rock-throwing protesters drew 3,000 National Guardsmen to the city. "Helmeted troops, armed with M‐1 rifles, were stationed in pairs on some overpasses, while other guardsmen rumbled along on patrol in quarter‐ton trucks," reported The New York Times on May 1, 1970. The strike led to a pay increase of nearly 30% for all Teamsters truckers. The average nationwide hourly pay of $4 got a $1.10/hour bump, the Times reported. Bob Stanton, a longtime truck driver who didn't support the Black Smoke Matters strikes, said it's too challenging to wrangle all of America's truck drivers to strike together. "You can't get enough of trucking to participate," he told Business Insider. Truck driver Lee Epling noted that truck drivers don't have enough time or money to strike. "In order for a movement like (Black Smoke Matters) to actually happen, you need the two things independent owner operators like myself do not have," Epling told Business Insider. "That's the luxury of time, and a whole lot of money." But unionization would ease the barriers to striking. Most strikes are called by labor unions as a last resort while bargaining for a new contract. Even those who might not necessarily agree with the strike are prevented from working, because strikes are called after enough union members vote to stop working.

#### Strikes would devastate chemical industry growth

Meagan Parrish 17, Senior report @ Manufacturing.net, The Chemicals Market Is Taking Off. Can The Transportation Industry Keep Up? 3-15-17, <https://www.manufacturing.net/news/2017/03/chemicals-market-taking-can-transportation-industry-keep>, DOA: 1-28-17, y2k

By most accounts, the chemicals industry is entering a renaissance era.

Thanks to the abundance of cheap natural gas, the industry is poised to see a wave of new plant openings and expansions that will amount to $50 billion of $160 billion in total manufacturing investment that’s been in the works since 2012.

Dow Chemical is on the verge of finishing a $6 billion expansion at its campus in Freeport, Texas. ExxonMobil also recently announced that it plans to invest $20 billion to expand its manufacturing facilities along the Gulf Coast. And this is just the first wave of what analysts say could be many big waves of industry expansion and investment in the coming years.

But there’s one major problem that could steamroll the industry’s growth: transportation delays.

Recently, PricewaterhouseCoopers (PwC) partnered with the American Chemistry Council (ACC) to study transportation logistics and issues in the industry. The results were worse than they expected.

“We were expecting to see some negative results [on how transportation is impacting the industry’s performance], but what we saw was definitely bigger than our hypothesis going in,” Mark Lustig, principal, chemical advisory at PwC, says.

For the report, PwC surveyed 68 leading chemical companies to learn about the challenges they’re facing with moving chemicals via train, truck and the high seas. PwC used these insights to estimate the costs of increasing congestion and the growing gap between chemical demand and infrastructure capacity.

Here’s how it breaks down.

By The Numbers

PwC estimates that growth in chemical shipments could increase by 36 million tons each year by 2020.

(AP Photo)

About 20 million tons of that volume will be olefins and methanol, which are shipped in bulk by pipeline. The remaining 16 million tons — or 1.8 million new shipments annually — will need to be moved by rail or truck, where problems are waiting.

On The Road

Trucks are the main mode of transportation for chemicals and handle about 54 percent of the industry’s shipments. Unfortunately for manufacturers, that industry is in the throes of a major driver shortage. Tight regulations around working hours for drivers coupled with the special training required for handling hazardous materials has made this issue even more acute in the chemicals world.

The situation isn’t likely to improve any time soon. According to one trucking association, the rate of retirement for truckers could mean that the industry may not even be able to maintain the same level of drivers — let alone increase them.

About 70 percent of respondents in the PwC also reported that they’re concerned about trucker shortages hampering business growth.

#### Continued growth unlocks new catalytic reactions---that solves waste

Alex Bissember 17 Senior Lecturer in Chemistry, School of Physical Sciences, University of Tasmania, Green chemistry is key to reducing waste and improving sustainability, 3-26-17, <http://theconversation.com/green-chemistry-is-key-to-reducing-waste-and-improving-sustainability-70740>, DOA: 1-28-18, y2k

The development and evolution of the chemical industry is directly responsible for many of the technological advancements that have emerged since the late 19th century.

However, it was not until the 1980s that the environment became a priority for the chemical industry. This was prompted largely by stricter environmental regulations and a need to address the sector’s poor reputation, particularly due to pollution and industrial accidents.

But the industry is now rapidly improving, and this changing mindset has provided the backdrop for the emergence of green chemistry.

What is green chemistry?

Sustainability is becoming increasingly important in almost every industry and chemistry is no different.

Green chemistry aims to minimise the environmental impact of the chemical industry. This includes shifting away from oil to renewable sources where possible.

Green chemistry also prioritises safety, improving energy efficiency and, most importantly, minimising (and ideally) eliminating toxic waste from the very beginning.

Important examples of green chemistry include: phasing out the use of chlorofluorocarbons (CFCs) in refrigerants, which have played a role in creating the ozone hole; developing more efficient ways of making pharmaceuticals, including the well-known painkiller ibuprofen and chemotherapy drug Taxol; and developing cheaper, more efficient solar cells.

The need to adapt

Making chemical compounds, particularly organic molecules (composed predominantly of carbon and hydrogen atoms), is the basis of vast multinational industries from perfumes to plastics, farming to fabric, and dyes to drugs.

In a perfect world, these would be prepared from inexpensive, renewable sources in one practical, efficient, safe and environmentally benign chemical reaction. Unfortunately, with the exception of the chemical processes found in nature, the majority of chemical processes are not completely efficient, require multiple reaction steps and generate hazardous byproducts.

While in the past traditional waste management strategies focused only on the disposal of toxic byproducts, today efforts have shifted to eliminating waste from the outset by making chemical reactions more efficient.

This adjustment has, in part, led to the advent of more sophisticated and effective catalytic reactions, which reduce the amount of waste. The 2001 Chemistry Nobel Laureate Ryoji Noyori stressed that catalytic processes represent “the only methods that offer the rational means of producing useful compounds in an economical, energy-saving and environmentally benign way”.

A secret to cleaner chemistry

Catalysts are substances that accelerate reactions, typically by enabling chemical bonds to be broken and/or formed without being consumed in the process. Not only do they speed up reactions, but they can also facilitate chemical transformations that might not otherwise occur.

In principle, only a very small quantity of a catalyst is needed to generate copious amounts of a product, with reduced levels of waste.

The development of new catalytic reactions is one particularly important area of green chemistry. As well as being more environmentally friendly, these processes are also typically more cost effective.

Catalysts take many forms, including biological enzymes, small organic molecules, metals, and particles that provide a better surface for reactions to take place. Roughly 90% of industrial chemical processes use catalysts and at least 15 Nobel Prizes have been awarded for catalysis research. This represents a tremendously important and active area of both fundamental and applied research.

What’s the outlook?

In the past 20 years since green chemistry was established, there have been tremendous advances in the industry. Nevertheless, there remains considerable room for improvement.

The chemical industry faces a number of significant challenges, from reducing its dependence on fossil fuels to playing its part in addressing climate change more generally.

Specific challenges include: capturing and fixing carbon dioxide and other greenhouse gases; developing a greater range of biodegradable plastics; reducing the high levels of waste in pharmaceutical drug manufacture; and improving the efficiency of water-splitting employing visible light photocatalysts.

History suggests that society can develop creative solutions to complex, intractable problems. However, success will most likely require a concerted approach across all areas of science, strong leadership, and a willingness to strategically invest in human capital and value fundamental research.

#### Waste destroys biospheric nutrient cycle---extinction

Rob Hengeveld 12, Dutch biogeographer and ecologist, Wasted World: How Our Consumption Challenges the Planet, pg xii-xiv, DOA: 1-28-18, y2k

Because there are no organisms on Earth that can use much of our waste as their food, we are not just straining - breaking the biospheric nutrient cycles, we are bypassing them. Ultimately, we will be unable to eat other species further down in the cycle, because our resources have turned into unusable waste. The plants and animals on which we rely for our energy and food are dying out or becoming toxic because of the toxicity of our waste. Our resources are being exhausted, - our waste is beginning to pollute our environment and food on a large scale.

So, we are polluting our agricultural land - turning other land into salty desert. We are turning mountains into deep pits by mining for metal or coal and are lowering the groundwater level over vast tracts of surrounding land. And we are forcing species to shift, extend, or reduce the geographic area they inhabit. We are turning some species into weeds or pests and causing others beneficial to us to die out. We are wasting ever-larger parts of Earth-for ourselves for thousands of other life-forms around us: species that feed us, that recycle our waste, - that used to clothe our environment -make it comfortable for us to live in. Unless we take countermeasures, our planet will become uninhabitable for us and all the other species on which we depend. We are browning our blue - green Earth.

## 2

#### Reconciliation passes now - Biden PC is key to getting democratic skeptics on board, but it’s tentative

Cochrane & Weisman 11/05 [Emily Cochrane - correspondent based in Washington. She has covered Congress since late 2018, focusing on the annual debate over government funding and economic legislation, ranging from emergency pandemic relief to infrastructure, Jonathan Weisman - congressional correspondent, veteran Washington journalist and author of the novel “No. 4 Imperial Lane” and the nonfiction book “(((Semitism))): Being Jewish in America in the Age of Trump.” His career in journalism stretches back 30 years, “Live Updates: House Democrats Push Toward Votes on Biden’s Agenda”, 11-05-2021, https://www.nytimes.com/live/2021/11/05/us/biden-spending-infrastructure-bill]//pranav

At the White House, Mr. Biden called on lawmakers to pass the legislation. “I’m asking every House member, member of the House of Representatives, to vote yes on both these bills right now,” the president said. Spooked by Tuesday’s electoral drubbing, Democrats labored to overcome concerns among moderates about the cost and details of a rapidly evolving, $1.85 trillion social safety net and climate plan and push it through over unified Republican opposition. They also hoped to clear a Senate-passed $1 trillion bipartisan infrastructure bill — the largest investment in the nation’s aging public works in a decade — for Mr. Biden’s signature. Top Democratic officials said they were confident they could complete both measures by day’s end, but Speaker Nancy Pelosi of California and her team continued to haggle with holdouts. Several moderates were pushing for more information about the cost of the sprawling plan, including a nonpartisan analysis from the Congressional Budget Office, the official scorekeeper responsible for calculating the fiscal impact of the 2,135-page legislation. “I think everyone’s waiting for the C.B.O. to do their job,” said Representative Jared Golden, Democrat of Maine, speaking to reporters on Friday morning as he left Ms. Pelosi’s office, where White House officials were also meeting on next steps. But Representative Steny H. Hoyer of Maryland, the majority leader, said the cost estimate would not be ready by the end of the day, and a person familiar with the discussions said a score from the budget office was weeks away from completion. “We’re working on it,” Mr. Hoyer said. Ms. Pelosi spent much of the day on Thursday buttonholing lawmakers on the House floor to try to corral support for the social policy bill, which includes monthly payments to families with children, universal prekindergarten, a four-week paid family and medical leave program, health care subsidies and a broad array of climate change initiatives. Mr. Biden and members of his cabinet worked the phones to win over Democratic skeptics. With Republicans united in opposition, Democrats could afford to lose as few as three votes from their side. As Democrats labored to unite their members behind the bill, Republicans sought to wreak procedural havoc on the House floor, forcing a vote to adjourn the chamber that leaders held open for hours to buy time for their negotiations. While the Senate approved the $1 trillion infrastructure bill in August, the measure has stalled as progressives have repeatedly refused to supply their votes for it until there is agreement on the other bill.

#### Business lobbying backlash ensures Sinema flips – empirics prove she doesn’t like similar bills

Duda ’21 [Jeremy, Prior to joining the Arizona Mirror, he worked at the Arizona Capitol Times, where he spent eight years covering the Governor's Office and two years as editor of the Yellow Sheet Report, “Business groups urge Kelly, Sinema to oppose pro-union PRO Act”, 08-30-2021, https://www.azmirror.com/2021/08/30/business-groups-urge-kelly-sinema-to-oppose-pro-union-pro-act/]//pranav

Business groups publicly called on Democratic U.S. Sens. Mark Kelly and Kyrsten Sinema to oppose a sweeping piece of pro-organized labor legislation that would wipe out Arizona’s “right-to-work” law that prohibits mandatory union membership. At a press conference at the office of the Arizona chapter of the Associated General Contractors near the state Capitol on Monday, leaders of several business groups warned that the Protecting the Right to Organize Act — or PRO Act, as it’s more commonly known — would undermine Arizona’s recovery from the economic slump it faced last year due to the COVID-19 pandemic, undermine the “gig economy,” jeopardize secret ballots in union organization votes, give unions access to confidential employee information and strip Arizonans of their right not to join a union. The bill would allow unions to override right-to-work laws and collect union dues from non-members who still benefit from collective bargaining. It would also prohibit company-sponsored meetings to urge employees against unionizing, define most independent contractors as employees, protect employees who are attempting to unionize from being fired and allow unions to engage in secondary strikes in support of other striking workers, among other provisions. “We want to thank and tell Senator Sinema and Senator Kelly that we appreciate them for not signing on as co-sponsors to the PRO Act, because if they were to change their opinions, New York Sen. Chuck Schumer will put this up for a vote,” said Danny Seiden, president and CEO of the Arizona Chamber of Commerce and Industry. Kelly and Sinema are two of only three Senate Democrats, along with Virginia’s Mark Warner, who haven’t co-sponsored the bill or thrown their public support behind it. Kelly last month told the Huffington Post that he opposes the independent contractor provision, but that he supports the “overall goals” of the legislation. Sinema is widely known as a holdout on the Democratic side and hasn’t supported the PRO Act, but spokesman Pablo Sierra-Carmona indicated that she hasn’t made up her mind, and that she won’t do so unless and until it comes up for a vote in the Senate.

#### They lash out against Reconciliation – it includes similar provisions

FURCHTGOTT-ROTH 10/09 [Diana, former acting assistant secretary for economic policy at the U.S. Department of the Treasury, is adjunct professor of economics at George Washington University, “Democrats can't pass the PRO Act, so it's buried in the reconciliation bill”, 10-09-2021, https://thehill.com/opinion/white-house/575992-dems-cant-pass-the-pro-act-so-its-buried-in-the-reconciliation-bill]//pranav

Union membership has been declining for decades as workers find better uses than union dues for their hard-earned dollars. But union bosses and their supporters are trying to change the law to force hard-working Americans into unions. How? Through the Protecting the Right to Organize Act (PRO Act), a bill that would expand the power of union leaders at the expense of workers. After sailing through the House, the PRO Act now appears stalled in the Senate and Democrats are trying to slip some PRO Act provisions into a massive reconciliation bill. American workers are wise to turn down union membership. Union pension plans are in trouble. In 2020, the Labor Department listed 121 union plans in critical status, defined as less than 65 percent funded, and 61 in endangered status, with less than 80 percent funded. Unions desperately need new workers to join, because they pay contributions for many years without withdrawing money. Most recently, Amazon workers in Alabama resoundingly rejected efforts by the Retail, Wholesale and Department Store International Union to organize their plant, with more than 70 percent of workers voting against the union. The union’s plan was in critical status between 2015 and 2019, and the Labor Department informed the plan’s administrators that it had to be reorganized by reducing benefits and increasing contributions. Union leaders and their allies on Capitol Hill believe the way to increase membership after decades of decline is to pass elements of the PRO Act through reconciliation. Unlike the PRO Act, which needs 60 votes in the Senate to enable it to move to President Biden’s desk for signature, the reconciliation bill, which deals with taxes and spending, needs only a simple majority. So via a massive reconciliation bill, congressional Democrats are trying to move some labor union provisions of the PRO Act by arguing they are actually revenue raisers.

#### Reconciliation is k2 stopping existential climate change – warming is incremental and every change in temperature is vital

Higgins 8/16 [Trevor, Senior Director, Domestic Climate and Energy, “Budget Reconciliation Is the Key to Stopping Climate Change”, 08-16-2021, https://www.americanprogress.org/issues/green/news/2021/08/16/502681/budget-reconciliation-key-stopping-climate-change/]//pranav

The United States is suffering acutely from the chaotic changes in climate that scientists now directly attribute to the burning of fossil fuels and other human activity. The drought, fires, extreme heat, and floods that have already killed hundreds this summer across the continent and around the world are a tragedy—and a warning of worsening instability yet to come. However, this week, the Senate initiated an extraordinary legislative response that would set the world on a different path. Enacting the full scope of President Joe Biden’s Build Back Better agenda would put the American economy to work leading a global transition to clean energy and stabilizing the climate. A look at what’s coming next through the budget reconciliation process reveals a ray of hope that is easy to miss amid the fitful negotiations of recent months: At long last, Congress is on the verge of major legislation that would build a more equitable, just, and inclusive clean energy economy. This is our shot to stop climate change. Building a clean energy future must start now Until the global economy stops polluting the air and instead starts to draw down the emissions of years past, the world will continue to heat up, blundering past perilous tipping points that threaten irreversible and catastrophic consequences. Stemming the extent of warming at 1.5 degrees Celsius rather 2 degrees or worse will reduce the risk of crossing such tipping points or otherwise exceeding the adaptive capacity of human society. Every degree matters. Stabilizing global warming at 1.5 degrees Celsius starts with cutting annual greenhouse gas emissions in the United States to half of peak levels by 2030. This isn’t about temporary offsets or incremental gains in efficiency—it’s about the rapid adoption of scalable solutions that will work throughout the world to eliminate global net emissions by 2050 and sustain net-negative emissions thereafter. Building this better future will tackle climate change, deliver on environmental justice, and create good jobs. It will give us a shot to stop the planet from continuously warming. It will alleviate the concentrated burdens of fossil fuel pollution, which are concentrated in systemically disadvantaged, often majority Black and brown communities. It will empower American workers to compete in the global clean energy economy of the 21st century. There is no time to lose in the work of building a clean energy future.

## Case

### Framing

ROJ: Evaluate direct consequneces of the plan – anything else is infinitely regressive, self seriving and arbitrary.

1] objectivity

2] debatability

3] presumption – discussions good – reading of 1ac suff

4] no debate key warrant – ev is ab diff kinds of debate not the ones we have her

6] debate not key

5] extinction first

### Solvency

**[1] Materiality DA – workers with 4 children can’t afford to join these long-term movements – they need relief – the plan trades off with material violence that decimates the working class.**

**[2] Co-option DA – anti-capitalist movements empirically get co-opted – Occupy Wall Street turned into a hash tag and a label – no ground-breaking revolution will occur.**

**Revolutions get crushed by right wing militias**

**Lewis 92.** Martin W., Associate Research Professor of Geography, Co-director of Comparative Area Studies – Duke University, Green Delusions, p. 170-171

**The** extreme **left**, for all its intellectual strength, **notably lacks the** kind of **power necessary to emerge victorious from a real revolution**. A few old street radicals may still retain their militant ethos, but today’s college professors and their graduate students, **the core marxist contingent, would be ineffective. The radical right, on the other hand, would present a very real threat.** Populist **right-wing paramilitary groups are well armed and** well **trained, while establishment-minded fascists** probably **have links with the** American **military**, wherein lies the greatest concentration of destructive power this planet knows. Should a crisis strike so savagely as to splinter the American center and its political institutions, we could well experience a revolutionary movement similar to that of Germany in the 1930s. Marxists, however, would likely counter this argument by citing the several cases of successful socialist revolutions. Successful though they were, none makes a compelling analogue. First, **no marxist revolution has ever come close to occurring in an advanced capitalist nation**. Triumphant leftist revolutions have only taken place in economically backward countries, and generally only after an unrelated war had demoralized the old guard. More importantly, as Hamerow (1990) clearly shows, **all successful marxian revolutions have relied on the strategic cooperation of the bourgeoisie** against the aristocracy; only after the old regime is toppled are the fractionated moderates cut out of power. Considering the fate that has generally befallen them under such circumstances, **it is unlikely that the business classes**—even in the world’s more feudal countries—**would** again **be tempted by** the promises of **a mixed economy offered** to them **by** would-be leftist **revolutionaries**. Except perhaps in El Salvador and Peru, contemporary marxist revolutionary movements are irritants to the ruling elites rather than real threats. **In** contemplating **the likely future of a revolutionary** **U**nited **S**tates, **we encounter the ultimate paradox of contemporary marxism**: the unintended collusion of the radical left and the radical right. Even during periods of normality, the opposing ends of the political spectrum feed strongly on each other—in sardonic fashion, they are each other’s best allies. **The marxian left is extraordinarily frightening to the vast majority** **of the** **populace, and the stronger it becomes, the more seductive the** propaganda of the radical **right grows**. The equation can also be reversed; leftist rhetoric draws its real power in opposition to the radical right, not the accommodating center. With every KKK outrage, with every atrocity committed by the Los Angeles Police Department, the marxian message grows ever more convincing to horrified progressives. The broad center of responsible conservatives, moderates, and liberals may attempt to remain dispassionate and to refute both extremes, but in a deteriorating political environment, marked by inflamed passions, such a stance will seem to many increasingly inadequate. **If, in the event of** extraordinary **crisis, the center does fold,** I must conclude that **most Americans would follow the far right rather than the far left. American society has simply been too prosperous, and the majority of its citizens too accustomed to owning property, to be willing to risk** everything on a communist experiment. Alexander Cockburn of The Nation has repeatedly pleaded with liberals not be afraid to endorse socialism—a fine position indeed if one would like to see reactionaries gain uncontested power throughout the United States. If truly concerned about social justice and environmental protection, I would counter liberals should not be afraid first to embrace, and then seek to reform, capitalism. American Marxism is thus intrinsically paradoxical; not only is it self-defeating, but it actually reinforces (in a perverse antidialectic) its own antithesis. **And if that antithesis ever gains power, it will not merely retain the status quo, but rather pull society fiercely backward, leading** it **into a truly nightmarish world**.

AT: Robinson

#### US climate reform causes global corporate follow-on, benefits the economy & is key to US leadership.

Baker et al. ’20 [JAMES A. BAKER III is Honorary Chair of Rice University’s Baker Institute for Public Policy and served as U.S. Secretary of the Treasury from 1985 to 1988 and U.S. Secretary of State from 1989 to 1992. GEORGE P. SHULTZ is Thomas W. and Susan B. Ford Distinguished Fellow at the Hoover Institution and served as U.S. Secretary of the Treasury from 1972 to 1974 and U.S. Secretary of State from 1982 to 1989. TED HALSTEAD is Chair and CEO of the Climate Leadership Council. He is a co-author (with Michael Lind) of The Radical Center: The Future of American Politics. “The Strategic Case for U.S. Climate Leadership”, May/June 2020, Foreign Affairs, <https://www.foreignaffairs.com/articles/united-states/2020-04-13/strategic-case-us-climate-leadership#author-info]//pranav>

* Answers dedev
* Solvency deficit to states cp
* Heg, econ, climate internal links

Consider first the relationship between national climate policy and international competitiveness. Contrary to the traditional perception that more action on climate change would undermine American competitiveness, the lack of a coherent national climate policy now poses a significant risk to U.S. firms. That is because the current rules of global trade effectively subsidize carbon-intensive production overseas and prevent the United States from reaping the economic benefits of its competitive advantage in low-emission manufacturing. The chief competitors to U.S.-based firms in China, India, Russia, and other countries generally operate under lax environmental standards and produce goods in a more carbon-intensive manner. Yet they currently pay no penalty for this. For example, China is now the world’s largest steel manufacturer, even though its average production of steel is more than twice as carbon intensive as the United States’. A similar pattern emerges in a variety of industries: motor vehicles, chemicals, even solar panels and agricultural products. In each case, U.S.-based firms compete on an unlevel playing field because the current rules of the game put them at a competitive disadvantage. Rather than lower U.S. climate ambitions, a better response would be to encourage U.S. trading partners to raise their standards or penalize them for their polluting ways. Further misconceptions exist about technology. Republicans are right to focus on clean energy innovation as the key to reducing carbon emissions. Yet some conservatives seem not to realize that the United States is falling behind in the clean energy race. The innovation coming out of U.S. universities, national labs, and businesses is impressive, but too few of the results are being produced in the United States and too little of it is making its way into commercial applications. Here, too, a comparison with China is revealing. China is now the world’s top producer, exporter, and user of wind turbines, solar panels, and batteries—the essential building blocks of a clean energy economy; the United States is in fourth place, trailing Germany and Japan. China also accounts for 60 percent of global electric vehicle sales, and the country has long-range plans in place to turn itself into the global leader in developing the fuels and cars of the future. The United States cannot remain the world’s foremost power if it is not also its leading energy innovator. Another common misconception is that climate action in the United States is too expensive or risks undermining the U.S. economy. Thanks largely to the shale and fracking revolution pioneered in the United States, market prices for natural gas have fallen by 70 percent since 2008, so the cleanest fossil fuel is now also the cheapest fossil fuel. During roughly the same period, the cost of solar power dropped by nearly 90 percent, and the price of wind power dropped by 70 percent. By capitalizing on efficiency gains and replacing coal with natural gas and solar and wind energy, the United States has cut its greenhouse gas emissions by 12 percent since 2005, all while maintaining a vibrant economy. Although the United States and its trading partners have a long way to go in reducing emissions, a fundamental paradigm shift is occurring. Climate action and economic growth, far from being mutually exclusive, are not only compatible but also increasingly interdependent.

### Impact

**Capitalism is inevitable and has adapted and survived similar shocks – this one is no different**

**Emmott 9** (Bill Emmott is an English journalist, author and consultant best known for his period as Editor-in-Chief of The Economist. “The future of capitalism,” billemmott.com, http://billemmott.com/article.php?id=250)//SL

Writing as he was in the mid 19th century, Marx could not have envisaged a third potential capitalist contradiction, or cause of crises, namely environmental degradation. In that era, with the industrial revolution only just getting under way, the filthy air and water of the great industrial cities of London and Manchester was just thought to be inevitable, and probably unimportant compared with all the other causes of disease, death and misery that existed at the time. Yet a modern Karl Marx would certainly include the environment. He would argue that the logic of capitalist profit-seeking requires companies to deplete the world´s finite resources, to keep on filling the planet´s atmosphere with carbon dioxide and other "greenhouse gases" and to exploit society by imposing the environmental costs of capitalist production on the lives of ordinary people. The whole idea of "sustainable development", which is so popular now with environmentalists, is based on the idea that if capitalism is left to proceed on its own course then planet´s development will not be sustainable: it will collapse, in a series of crises, just as Marx foresaw. Fortunately for all of us, Karl Marx was a better theorist than he was a forecaster. Today, many economists are criticized for having failed to predict the global financial crisis that began in August 2007, or the global economic crisis that began with the collapse of the Lehman Brothers investment bank in September 2008. During the past 150 years, there have been many such crises, most notably the crisis of the 1930s and its Great Depression, or the bursting of Japan´s bubble economy in 1990-92. Karl Marx, however, forecast a much bigger, more fundamental crisis that has never yet occurred: the complete collapse of capitalism under the weight, as he wrote, of its own contradictions. Despite that failure, the ideas of Marx still have some resonance with economists and other thinkers today. Memories of communism in the Soviet Union and Mao Zedong´s China are still fresh, but also fears of a capitalist collapse remain strong. Capitalism, based as it is on greed and selfishness, has never actually been popular. That may well be why the events of 2007-09 have not just been described as a recession, or even just a financial or banking crisis: they have been described as a crisis of capitalism itself. Karl Marx lives on, at least in our minds. The reason why Marx has been proved wrong, so far, is that capitalism is a very adaptive and resilient system. After each crisis, after each dramatic change in the circumstances of the world or of any specific country, capitalism has been able to find new forms, to find new ways to prosper and make progress. The ingenuity and ambition of entrepreneurs and corporate managers enables them not just to invent new technologies and products but also whole new ways of organizing themselves and, in particular, new ways of positioning themselves in relation to government and society. They have been assisted in finding those new forms by government itself, the growth of which in all the rich, developed economies has softened the impact of capitalism´s crises. Government spending now is much larger compared with overall Gross Domestic Product (GDP) than it was during the 1930s, for example, in America, Europe and Japan, allowing that spending to help dampen the severity of economic cycles. That is exactly what governments have been doing since the current economic crisis began in 2007-08, with their big fiscal stimulus packages. Central banks, too, play a bigger role in economies than before, and their expansionary monetary policies have also helped to prevent the 2007-08 crisis from turning into a catastrophe. From the point of view of capitalism, government fiscal and monetary policies help to buy time for companies to plan their own adaptations, their own restructuring in response to the recession. But the adaptation still has to occur. Another economist, Joseph Schumpeter, writing in the 20th century, called this adaptation process "creative destruction". He was describing the way in which old and inefficient companies and even whole industries may be destroyed, especially during recessions, and are replaced by new companies and new industries, with new ideas and with balance sheets that were not so encumbered by debts. In fact, Schumpeter believed, without the destruction of the old, the process of creation and adaptation could not happen properly or vigorously. Now, amid our current global economic troubles, it has become common to ask what will be, what can be, the future of capitalism after this crisis. The first assumption behind this question is that the events surrounding the collapse of Lehman Brothers can, in truth be considered as a true crisis for capitalism as a system, rather than just a normal part of the economic cycle. Capitalism must change, following this crisis: that is the underlying thought. The second assumption, however, is a more positive one: it is that capitalism will adapt to its new circumstances, to the new rules governments may lay down for it, to the new attitudes people will hold towards it, even to the new balance of economic and political power in the world. After the destruction, there will be creation. But creation of what? That is what everyone is wondering. Inequality, stability, sustainability Let us be clear: **capitalism is the only successful system** yet invented **for organizing human beings to achieve** economic and technological **progress**. The idea that somehow we could **move beyond capitalism is pure fantasy**. To believe that we could do so would require us to ignore the fact that competition is inherent in the human species, even if we are also able to co-operate when it is in our interests to do so. And the period of human history during which capitalism has been most free to operate—basically, the past two centuries—has also been the period during which humanity has achieved the most rapid and sustainable advances in living standards and life-opportunities. But let us also be clear about the weaknesses of capitalism. During these past two highly successful centuries, capitalism has shown that it has a tendency to increase levels of inequality inside societies and between different societies in different parts of the world. That rising inequality can lead to social tension and even to conflict, which ends up disrupting capitalism itself. Moreover, as Karl Marx said, capitalism has always been unstable. It produces booms and busts, periods of growth and recession, bubble economies and then times of stagnation or even depression. And finally it does cause environmental damage, because the essence of industrial activity is the conversion of resources, using energy, into newly manufactured goods, and because the direct costs born by companies making those goods do not include any price for pollution or other environmental consequence. Most of all, the vast increase in humanity´s use of fossil fuels—mainly oil, gas and coal—has led to the rise in global temperature that we now know as global warming. Until recently, the scientific evidence on this point was unclear: now it has been proven beyond any reasonable scope for doubt. We can and should debate about what would be the appropriate policies to try to reduce the quantity of carbon dioxide emissions and to control the rise in global temperature. But there is no longer any point is disputing whether the rise has been influenced by human industrial activity. Following the shocks of the past two years, these weaknesses of capitalism have come sharply back into focus. It has been popular, since the collapse of Lehman Brothers, to attack something the critics call "market fundamentalism": Yukio Hatoyama made just such an attack in the pages of Voice magazine when he was campaigning to become prime minister. It is also popular for politicians to claim that an era of free-market, neo-liberal capitalism that began with Ronald Reagan and Margaret Thatcher at the start of the 1980s has now come to an end. A new direction is needed. But no one seems to agree on what it is. Well, perhaps that is unfair. Some commentators have argued that they have seen the future of capitalism and that they know it works: for the future, in their view, lies in Chinese-style capitalism, led and controlled by the state. Ian Bremmer, the owner and president of a Washington-based political-risk consultancy, the Eurasia Group, argued in an article in the journal Foreign Affairs in May/June 2009 (which he is now expanding into a book) that American-style capitalism is going to face fierce competition from state capitalism, and that many countries will now be tempted to try to emulate China. Previously, they tried to emulate the United States, but the global economic crisis has discredited that effort. Can that be correct? Does China now offer the new model, a "Beijing Consensus" to replace the "Washington Consensus" that became dominant in the 1990s? Is that the future of capitalism? Personally, I think this is very unlikely to be true. Certainly, capitalism needs to change. But not as drastically as this idea of a Chinese model would suggest. After all, the "Chinese model" of capitalism is not so very different from the forms of capitalist development that have been seen all over Asia during the past half century, in Japan, South Korea, Taiwan, Malaysia, Singapore and elsewhere. In all those countries, state intervention, both as a provider of guidance and finance, and as a direct owner of companies, has played a big role. China has not invented anything new. The last time Americans were worrying that their "model" faced a severe, even existential challenge was the 1980s, when scholars and lobbyists such as Chalmers Johnson, Clyde Prestowitz and James Fallows argued that America needed to learn from the Japanese model of a government-led industrial policy. That idea soon faded. And in all the Asian economic success stories, the role of the state has declined as the economy has grown more mature and complex. The same will surely occur in China. The framework for how capitalism needs to change comes, in my view, not from Chinese success but rather from the three weaknesses that I outlined earlier: inequality, instability and sustainability. Thanks to the global economic crisis, and thanks to the scientific evidence about climate change, reforms are needed to address all these three weaknesses. This, however, is nothing really new**. The same sort of reforms were necessary after previous crises and slumps, and similar environmental reforms have been necessary in many countries during the past 50 years**, at times when pollution reached intolerable and politically unpopular levels. These reforms can only be done by governments, for they consist of the setting of new rules of the game. Only government can do that, for only it has the legitimacy to set rules and to enforce them. But sensible, far-sighted companies should also try to participate in the formation of those rules, not to block them but to shape them in such a way as to make the new rules both economically and socially constructive. Companies, after all, do not exist separately from society. They are integral parts of society itself. Indeed, most citizens in modern economies devote much of their adult lives to working in companies and so they consider companies to be their main forms of social organization. They get much of their training and practical education from their companies, as well as their sense of self-esteem, of belonging to a social group. Moreover, companies typically take the lead in bringing changes to our social interactions by the way in which they invent or exploit new technologies: from the motor car to the telephone, from the mobile phone to the internet and to today´s social networking, capitalist companies have always operated in the heart of society. Companies thus have a powerful interest in working to ensure that society as a whole is in a healthy and positive condition, and that the right rules are set and followed, because that society is companies´ own market, and because society itself reaches deep inside the companies themselves. The gap between the rich and the poor The practical starting point for how capitalism needs to be changed, to be reformed, as a result of the global economic crisis comes from its weakness of instability. After all, that is what the language of the financial crash, of the collapse of Lehman Brothers, of the crisis implies straight away: an unstable system. All the present talk of reviewing and tightening financial regulation is a reaction to that instability, an attempt to find new ways to cope with this old problem. But despite all the immediate attention, instability is, in reality, a secondary issue the salience of which will decline once economic recovery gets strongly underway. The true political starting point for changing capitalism is not instability but inequality. Inequality is inherent in capitalism, just as it is inherent in society. But Marx was wrong to forecast that capitalist societies would always become more unequal. In fact, the degree of inequality within those societies has both risen and fallen many times during the past century, whether in the United States, Western Europe or Japan. This is a complex issue, so it cannot easily be summarized in a brief generalization. Still, I will attempt to do so: the degree of inequality seems to have been most influenced by the level of unemployment, by the evolution of education, and by politics. Periods of full employment tend to narrow the gap between the richest and the poorest. There is no surer path to poverty than being out of a job. Access to well-paid, productive jobs, however, depends in the long-term on education, which enables the poorer citizens to acquire skills and to take on more complex tasks. Karl Marx would be astonished at the fact that the developed countries chose to provide education, at taxpayers´ expense, to the whole of their population. That decision, though prompted by political pressure from the working classes, was also eventually accepted by the rich and by capitalists as being in their interests too, for they came to realize that a well educated population is more socially stable and more productive. The benefits of publicly financed mass education have even increased as our economies have come to be more and more dominated by knowledge-intensive industries and services.

#### Cap is key to check rising food insecurity – it’s coming now and impacts 1 billion people

Rosegrant 14. Mark W. Rosegrant et al. 2014, Director of the Environment and Production Technology Division at the International Food Policy Research Institute, Ph.D. in Public Policy from the University of Michigan, "Food Security in a World of Natural Resource Scarcity The Role of Agricultural Technologies," A peer-reviewed publication, http://www.ifpri.org/sites/default/files/publications/oc76.pdf

The International Food Policy Research Institute (IFPRI) business-as- usual projections of agricultural supply and demand anticipate a rise in food prices of most cereals and meats, reversing long-established down- ward trends. Between 2005 and 2050, food prices for maize, rice, and wheat are projected to increase by 104, 79, and 88 percent, respectively, while those for beef, pork, and poultry will rise by 32, 70, and 77 percent, respectively. Moreover, the number of people at risk of hunger in the developing world¶ will grow from 881 million in 2005 to more than a billion people by 2050 (IFPRI International Model for Policy Analysis of Agricultural Commodities and Trade [IMPACT] baseline, Model for Interdisciplinary Research on Climate [MIROC] A1B scenario1 used in this book). More recent modeling efforts that use nine agricultural models, including both general equi- librium and partial equilibrium models, project that food price increases out to 2050 will be more moderate under climate change, with the IMPACT results in the medium range of price increases. Our results indicate increases in the real price of maize of 40–45 percent in 2050 and in the price of wheat and rice of 20–25 percent under climate change relative to a no–climate change scenario, using the Intergovernmental Panel on Climate Change (IPCC)¶ Fifth Assessment with Representative Concentration Pathway (RCP) 8.5 and Shared Socioeconomic Pathway (SSP) 2 scenario2 (Nelson et al. 2013).¶ Both demand and supply factors will drive price increases. Population and regional economic growth will fuel increased growth in demand for food. Rapid growth in demand for meat and milk will put pressure on prices for maize, coarse grains, and meats. World food markets will tighten, adversely affecting poor consumers. The substantial increase in food prices will cause rel- atively slow growth in calorie consumption, with both direct price impacts on the food insecure and indirect impacts through reductions in real incomes for poor consumers who spend a large share of their income on food. This in turn contributes to slow improvement in food security, particularly in South Asia and Africa south of the Sahara (SSA). As productivity growth is insufficient to meet effective demand in much of the developing world, net food imports are expected to increase significantly for the group of developing countries (Rosegrant, Paisner, and Meijer 2003).¶ In the longer term, adverse impacts from climate change are expected to raise food prices further and dampen developing-country food demand trans- lating into direct increases in malnutrition levels, with often irreversible con- sequences for young children (Nelson et al. 2010). Climate change could decrease maize yields by 9–18 percent depending on climate change scenario, cropping system (rainfed or irrigated), and whether the carbon fertilization effect is included; rice yields could drop by 7–27 percent; and wheat yields would be particularly affected, sharply declining by 18–36 percent by 2050, compared to a scenario with no climate change (Nelson et al. 2009).¶ Furthermore, there is now a growing understanding that natural resources are beginning, to a substantial degree, to limit economic growth and human well- being goals (Ringler, Bhaduri, and Lawford 2013). The effects of natural resource scarcity have been described in many recent scientific publications, such as the reports of the IPCC (IPCC, various years), the Millennium Ecosystem Assessment (MA and WRI 2005), and the “Planetary Boundaries” paper (Rockström et al. 2009), and are being debated in many intergovernmental venues that focus on the development of the Sustainable Development Goals that would replace the Millennium Development Goals in 2015 (SDSN 2013).¶ Rapidly rising resource scarcity of water and increasingly of land will add fur- ther constraints on food production growth. At the same time, bioenergy demand will continue to compete with food production for land and water resources despite recent reviews of biofuel policies in the European Union (EU) and the United States (Rosegrant, Fernandez, and Sinha 2009; Rosegrant, Tokgoz, and Bhandary 2013). Given the continued growth of competing demands on water and land resources from agriculture, urbanization, industry, and power genera- tion, food production increases through large expansion into new lands will be unlikely. Land expansion would also entail major environmental costs and dam- age remaining forest areas and related ecosystem services (Rosegrant et al. 2001; Alston, Beddow, and Pardey 2009; Rosegrant, Fernandez, and Sinha 2009; Foley et al. 2011; Pretty, Toulmin, and Williams 2011; Balmford, Green, and Phalan 2012). Therefore, greater food production will largely need to come from higher productivity rather than from a net increase in cropland area.¶ Accelerated investments in agricultural research and development (R&D) will be crucial to slow or reverse these recent trends. For the most part, growth rates of yields for major cereals have been slowing in direct response to the slowdown of public agricultural R&D spending during the 1990s (Alston, Beddow, and Pardey 2009; Ainsworth and Ort 2010). However, developing-country spending has picked up over the past decade, mostly driven by China and India (Beintema et al. 2012). It is uncertain whether R&D spending will continue to grow, but more is needed to sustain the growth of agricultural productivity.¶ Accelerated investments to support improved agricultural technologies and practices will be crucial to slow and reverse these trends, increase productivity, and meet the growing food demands in an environmentally sustainable way. The future choices and adoption of agricultural technologies will fundamentally influence not only agricultural production and consumption but also trade and environmental quality in developing countries. These choices will have implic tions for water, land, and energy resources, as well as for climate change adap- tation and mitigation. The effectiveness of different agricultural technologies¶is often a polarized debate. At one end of the spectrum, advocates of intensive agriculture assume that massive investments in upstream agricultural science (including biotechnology and genetic modification) are needed for rapid growth of agricultural production, together with high levels of agricultural inputs, such as fertilizer, pesticides, and water. At the other end of the spectrum, advocates¶ of low-input agriculture emphasize the role of organic and low-input agriculture and crop management improvement through water harvesting, no-till, and soil fertility management in boosting future yield growth. In the middle of all this are almost one billion food-insecure people whose food and nutritional security will depend on agricultural technology strategy decisions undertaken by governments and private investors.

#### Cap solves disease mutation

Jackson 16. Kerry, Pacific Research Institute; 12/19/16; Free Market Policies Needed To Incentivize Creation Of New Life-Saving Treatments; https://www.pacificresearch.org/article/free-market-policies-needed-to-incentivize-creation-of-new-life-saving-treatments/

“Our strongest antibiotics don’t work and patients are left with potentially untreatable infections,” Director Dr. Tom Frieden said when the CDC issued its warning. He asked doctors, hospitals and public health officials to “work together” to “stop these infections from spreading.” The 2014 Report to the President expressed a similar concern: “The evolution of antibiotic resistance is now occurring at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.” For those thinking this sort of thing shouldn’t be happening when medical science is more advanced than can almost be conceived, be assured that it is. And unless there are public policy interventions, it’s likely to get worse. “More and more microorganisms will continue to gain resistance to the current drug therapies because (antimicrobial resistance, or AMR) is basic evolution,” Wayne Winegarden writes in the Pacific Research Institute’s newly-released report “Incenting the Development of Antimicrobial Medicines to Address the Problem of Drug-Resistant Infections.” The International Federation of Pharmaceutical Manufacturers says the problem is caused by “a dearth of new antibiotic medicines.” At the same time that there’s been an increase in AMR, there has been “a sharp decline in the development of new antibiotic medicines.” The group reports that only two new classes of antibiotics have been discovered in the last three decades compared to 11 in the previous 50 years. The answers to many medical problems are still not within reach of researchers. But the hazards of AMR can be diminished. Winegarden suggests we begin with public health campaigns that encourage handwashing, which he calls a highly effective and low-cost way to reduce the spread of infection. He further recommends policy that would address the problem of antibiotic overuse and greater use of vaccines to cut the incidents of infection. But Winegarden’s primary concern is establishing the correct incentives for developing new antimicrobial medicines that would be effective against AMR microorganisms. He’s specifically referring to policies “based on a thorough understanding of the disincentives that are currently inhibiting their development.” “These disincentives are well-recognized,” he writes. “Despite the medical need, and despite the generally strong return on investment for many other drug classes, the return on investment for developing new antimicrobial medicines (particularly antibiotics) is too low.” Producing a new drug is a grinding and expensive endeavor. It can take 10 to 15 years to develop a single prescription drug that is introduced to the market, and a company can spend as much as $5.5 billion on research and development for each medication that is eventually approved and prescribed. Less than 2 percent of all projects launched to create new drugs succeed. This is not an environment in which pharmaceutical companies can get too amped up about pursuing new treatments. Yet new drug approvals increased over the last decade. Don’t look for a surge of antimicrobial drugs in that pipeline, though. Winegarden says that particular drug class is among several that “face unique impediments” that serve as disincentives for innovation. To overcome the steep hill that impedes the development of new AMR drugs, lawmakers must implement policies that unleash the incentives of the free market. Policymakers also should look at the 1983 federal Orphan Drug Act and its market-oriented reforms that increased the number of drugs developed to treat rare diseases. More than 400 have been introduced to the market since the law was enacted, compared to fewer than 10 in the 1970s. Put another way, government needs to remove its anchors from the process and let the market do what it does so well. In this case, that’s restoring patients’ health, enriching innovative companies that create jobs, and inspiring biotech start-ups such as the group of Stanford undergraduates that has been capitalized to develop new antibiotics. If the proper incentives are in place, the needed treatments will follow.

#### Pandemics end civilization – no burnout

Kerscher 14. Karl-Heinz, professor and management consultant “Space Education”, Wissenschaftliche Studie, 2014

The death toll for a pandemic is equal to the virulence, the deadliness of the pathogen or pathogens, multiplied by the number of people eventually infected. It has been hypothesized that there is an upper limit to the virulence of naturally evolved pathogens. This is because a pathogen that quickly kills its hosts might not have enough time to spread to new ones, while one that kills its hosts more slowly or not at all will allow carriers more time to spread the infection, and thus likely out-compete a more lethal species or strain. This simple model predicts that if virulence and transmission are not linked in any way, pathogens will evolve towards low virulence and rapid transmission. However, this assumption is not always valid and in more complex models, where the level of virulence and the rate of transmission are related, high levels of virulence can evolve. The level of virulence that is possible is instead limited by the existence of complex populations of hosts, with different susceptibilities to infection, or by some hosts being geographically isolated. The size of the host population and competition between different strains of pathogens can also alter virulence. There are numerous historical examples of pandemics that have had a devastating effect on a large number of people, which makes the possibility of global pandemic a realistic threat to human civilization.

#### Cap is sustainable

**Seabra 12** (Leo, has a background in Communication and Broadcasting and a broad experience which includes activities in Marketing, Advertising, Sales and Public Relations, 2/27, “Capitalism can drive Sustainability and also innovation,” http://seabraaffairs.wordpress.com/2012/02/27/capitalism-can-drive-sustainability-and-also-innovation/)

There are those who say that if the world does not change their habits, even the end of economic growth, and assuming alternative ways of living, will be a catastrophe. “Our lifestyles are unsustainable. Our expectations of consumption are predatory.Either we change this, or will be chaos”. Others say that the pursuit of unbridled economic growth and the inclusion of more people in consumption is killing the Earth. We have to create alternative because economic growth is pointing to the global collapse. “What will happen when billions of Chinese decide to adopt the lifestyle of Americans?” I’ll disagree if you don’t mind… **They might be** wrong. **Completely wrong** .. Even very intelligent people wrongly interpret the implications of what they observe when they lose the perspective of time. In the vast scale of time (today, decades, not centuries) it is the opposite of what expected, because they start from a false assumption: the future is the extrapolation of this. But not necessarily be. How do I know? Looking at history. What story? The history of innovation, this thing generates increases in productivity, wealth, quality of life in an unimaginable level. It is innovation that will defeat pessimism as it always did. It was innovation that made life today is incomparably better than at any other time in human history. And will further improve. Einstein, who was not a stupid person, believed that capitalism would generate crisis, instability, and growing impoverishment. He said: “The economic anarchy of capitalist society as it exists today is, in my opinion, the true source of evil.” The only way to eliminate this evil, he thought, was to establish socialism, with the means of production are owned by the company. A centrally controlled economy would adjust the production of goods and services the needs of people, and would distribute the work that needed to be done among those in a position to do so. This would guarantee a livelihood to every man, women and children. Each according to his possibilities. To each according to their needs. And guess what? What happened was the opposite of what Einstein predicted. Who tried the model he suggested, impoverished, screwed up. Peter Drucker says that almost of all thinking people of the late nineteenth century thought that Marx was right: there would be increased exploitation of workers by employers. They would become poorer, until one day, the thing would explode. Capitalist society was considered inherently unsustainable. It is more or less the same chat today. **Bullshit. Capitalism, with all appropriate regulations, self-**corrects. It is **an adaptive system that learns and changes by design. The design is just for the system to learn and change.** There was the opposite of what Einstein predicted, and held the opposite of what many predict, but the logic that “unlike” only becomes evident over time. It wasn’t obvious that the workers are those whom would profit from the productivity gains that the management science has begun to generate by organizing innovations like the railroad, the telegraph, the telephone .. to increase the scale of production and cheapen things. The living conditions of workers today are infinitely better than they were in 1900. They got richer, not poorer .. You do not need to work harder to produce more (as everyone thought), you can work less and produce more through a mechanism that is only now becoming apparent, and that brilliant people like Caetano Veloso still ignores. The output is pursuing growth through innovation, growth is not giving up. More of the same will become unsustainable to the planet, but most of it is not what will happen, will happen more different, than we do not know what is right. More innovative. Experts, such as Lester Brown, insist on statements like this: if the Chinese also want to have three cars for every four inhabitants, as in the U.S. today, there will be 1.1 billion cars there in 2030, and there is no way to build roads unless ends with the whole area used for agriculture. You will need 98 million barrels of oil per day, but the world only produces about 90 million today, and probably never produce much more. The mistake is to extrapolate today’s solutions for the future. We can continue living here for 20 years by exploiting the same resources that we explore today? Of course not. But the other question is: how can we encourage the stream of innovations that will enable the Chinese, Indians, Brazilians, Africans .. to live so as prosperous as Americans live today? Hey, wake up … what can not stop the engine of innovation is that the free market engenders. This system is self correcting, that is its beauty. We do

#### Market failure wrong and capitalism creates *sustainable living conditions* – India and China prove

Smith 17. Noah Smith is a Bloomberg View columnist. He was an assistant professor of finance at Stony Brook University, and he blogs at Noahpinion [“Free-Market Failure Has Been Greatly Exaggerated,” 11-15-2017, *Bloomberg*, URL: https://www.bloomberg.com/view/articles/2017-11-15/free-markets-improved-more-lives-than-anything-ever]//vikas

As someone who has done decades of pioneering work in the field of trade and growth, and who has been intimately involved in practical policy-making, Rodrik is as much of an expert on this topic as anyone . But although his criticisms are accurate, he overlooks much of the good that neoliberalism has done. Rodrik very wisely explains why it's so easy for economists to seem like shills for simplistic free-market policies. Confronted with a desire for quick fixes and easy explanations, many economists instinctively revert back to the toy models they learned in their introductory economics courses -- models where free-market competition solves almost any problem. As Rodrik notes, these models represent a common fable -- University of Connecticut law professor James Kwak calls it "economism" -- that ignores a million and one important features of real-world markets. **Government institutions**, for example, **matter a lot** -- from the corporatism of 20th century Japan to Germany's innovative unions**, there are many flavors of capitalism** that all seem to work fairly well. And without good institutions, capitalism can easily degenerate into inefficient monopoly, crash-prone financial excess, short-sighted environmental destruction, or a number of other undesirable conditions. But when it comes to the harms that neoliberalism has wrought, Rodrik cherry-picks quite a bit. He focuses on two countries -- Mexico and Chile. In the 1970s and 1980s, under dictator Augusto Pinochet, Chile took advice from a number of free-market economists, but the results were underwhelming. Since undertaking its own free-market reforms and signing the North American Free Trade Agreement, Mexico's economy has underperformed more interventionist countries like South Korea and China. These examples of neoliberal disappointment are real enough. It's no accident that both come from Latin America -- the region where neoliberal advice, in the form of a 10-point plan called the Washington Consensus, garnered the most publicity. The Washington Consensus has been the target of bitter criticism for years, and Rodrik himself has been one of its most prominent detractors. But Latin America is only one part of the world. Elsewhere, broadly neoliberal ideas have been much more of a success. Rodrik's essay should have taken these into consideration. Take China. **In the 1980s, after decades of economic and social disaster under Mao Zedong, China started experimenting with a market economy under** party leader **Deng Xiaoping**. The regime began to allow small businesses and granted limited land rights. **State**-owned **enterprises were partially privatized.** The country opened to foreign investment, and went from a state of isolation to the world's biggest trading economy. By 2005, China's market economy passed its state-run economy in size. What happened after China's market reforms is now well-known -- **the most dramatic explosion of economic growth in world history.** As Rodrik points out, state intervention still plays a prominent role in China's economy. But the shift from a rigid command-and-control economy to one that blended state and market approaches -- and the liberalization of trade -- was undoubtedly a neoliberal reform. Though Deng's changes were mostly done in an ad-hoc, common sense manner, he did invite famed neoliberal economist Milton Friedman to give him advice. A decade after China began its experiment, India followed suit. In 1991, after a sharp recession, **Prime Minister Narasimha Rao and Finance Minister Manmohan Singh scrapped a cumbersome system of business licensing, eased curbs on foreign investment, ended many state-sanctioned monopolies, lowered tariffs and** did a bunch of other neoliberal things. Although the results were not as dramatic as in China, **there was a** sustained **rise in economic growth**: It's almost impossible to overstate how important the growth explosions of India and China have been. So many people live in these two supergiant countries -- almost 40 percent of humanity, several times the total living in the developed world -- that together they determine the entire shape of human progress. During the last three decades, India and China have done more to reduce world poverty than any other force in history: Dry facts and figures shouldn't obscure the poignant human reality of this miracle. People who once bathed in dirty rivers, defecated outside and saw a quarter of their children die before age 5 are getting food, shelter and clean water. Hundreds of millions of **indigent farmers have moved on to better lives in cities.** Child mortality in India is down by almost five-sixths. It could reasonably be argued that nothing this good has ever happened before in human history. And **India and China's growth appears far from over.** So sure, the Washington Consensus didn't boost Latin America into the ranks of rich countries. And the neoliberal reforms in the former Soviet Union met with mixed success. But India and China account for more than three times as many people as all of those countries combined. Their sweeping reduction in extreme poverty alone makes neoliberalism a qualified success. Though the free-market approach unquestionably has its shortcomings, it would be wrong to label it "bad economics," as Rodrik does. The truth, as usual, is more complicated.

#### Growth is sustainable – their limits to growth arguments are empirically disproven

Brook, et al, 15—professor of environmental sustainability at the University of Tasmania (Barry, with John Asafu-Adjaye, University of Queensland, Linus Blomqvist, Breakthrough Institute, Stewart Brand, Long Now Foundation, Ruth DeFries, Columbia Univeristy, Erle Ellis, University of Maryland, Baltimore County, Christopher Foreman, University of Maryland School of Public Policy, David Keith, Harvard University School of Engineering and Applied Sciences, Martin Lewis, Stanford University, Mark Lynas, Cornell University, Ted Nordhaus, Breakthrough Institute, Roger Pielke, Jr., University of Colorado, Boulder, Rachel Pritzker, Pritzker Innovation Fund, Joyashree Roy, Jadavpur University, Mark Sagoff, George Mason University, Michael Shellenberger, Breakthrough Institute, Robert Stone, Filmmaker, and Peter Teague, Breakthrough Institute, “AN ECOMODERNIST MANIFESTO,” <http://www.ecomodernism.org/manifesto/>, dml)

Intensifying many human activities — particularly farming, energy extraction, forestry, and settlement — so that they use less land and interfere less with the natural world is the key to decoupling human development from environmental impacts. These socioeconomic and technological processes are central to economic modernization and environmental protection. Together they allow people to mitigate climate change, to spare nature, and to alleviate global poverty. Although we have to date written separately, our views are increasingly discussed as a whole. We call ourselves ecopragmatists and ecomodernists. We offer this statement to affirm and to clarify our views and to describe our vision for putting humankind’s extraordinary powers in the service of creating a good Anthropocene. 1. Humanity has flourished over the past two centuries. Average life expectancy has increased from 30 to 70 years, resulting in a large and growing population able to live in many different environments. Humanity has made extraordinary progress in reducing the incidence and impacts of infectious diseases, and it has become more resilient to extreme weather and other natural disasters. Violence in all forms has declined significantly and is probably at the lowest per capita level ever experienced by the human species, the horrors of the 20th century and present-day terrorism notwithstanding. Globally, human beings have moved from autocratic government toward liberal democracy characterized by the rule of law and increased freedom. Personal, economic, and political liberties have spread worldwide and are today largely accepted as universal values. Modernization liberates women from traditional gender roles, increasing their control of their fertility. Historically large numbers of humans — both in percentage and in absolute terms — are free from insecurity, penury, and servitude. At the same time, human flourishing has taken a serious toll on natural, nonhuman environments and wildlife. Humans use about half of the planet’s ice-free land, mostly for pasture, crops, and production forestry. Of the land once covered by forests, 20 percent has been converted to human use. Populations of many mammals, amphibians, and birds have declined by more than 50 percent in the past 40 years alone. More than 100 species from those groups went extinct in the 20th century, and about 785 since 1500. As we write, only four northern white rhinos are confirmed to exist. Given that humans are completely dependent on the living biosphere, how is it possible that people are doing so much damage to natural systems without doing more harm to themselves? The role that technology plays in reducing humanity’s dependence on nature explains this paradox. Human technologies, from those that first enabled agriculture to replace hunting and gathering, to those that drive today’s globalized economy, have made humans less reliant upon the many ecosystems that once provided their only sustenance, even as those same ecosystems have often been left deeply damaged. Despite frequent assertions starting in the 1970s of fundamental “limits to growth,” there is still remarkably little evidence that human population and economic expansion will outstrip the capacity to grow food or procure critical material resources in the foreseeable future. To the degree to which there are fixed physical boundaries to human consumption, they are so theoretical as to be functionally irrelevant. The amount of solar radiation that hits the Earth, for instance, is ultimately finite but represents no meaningful constraint upon human endeavors. Human civilization can flourish for centuries and millennia on energy delivered from a closed uranium or thorium fuel cycle, or from hydrogen-deuterium fusion. With proper management, humans are at no risk of lacking sufficient agricultural land for food. Given plentiful land and unlimited energy, substitutes for other material inputs to human well-being can easily be found if those inputs become scarce or expensive. There remain, however, serious long-term environmental threats to human well-being, such as anthropogenic climate change, stratospheric ozone depletion, and ocean acidification. While these risks are difficult to quantify, the evidence is clear today that they could cause significant risk of catastrophic impacts on societies and ecosystems. Even gradual, non-catastrophic outcomes associated with these threats are likely to result in significant human and economic costs as well as rising ecological losses. Much of the world’s population still suffers from more-immediate local environmental health risks. Indoor and outdoor air pollution continue to bring premature death and illness to millions annually. Water pollution and water-borne illness due to pollution and degradation of watersheds cause similar suffering. 2. Even as human environmental impacts continue to grow in the aggregate, a range of long-term trends are today driving significant decoupling of human well-being from environmental impacts. Decoupling occurs in both relative and absolute terms. Relative decoupling means that human environmental impacts rise at a slower rate than overall economic growth. Thus, for each unit of economic output, less environmental impact (e.g., deforestation, defaunation, pollution) results. Overall impacts may still increase, just at a slower rate than would otherwise be the case. Absolute decoupling occurs when total environmental impacts — impacts in the aggregate — peak and begin to decline, even as the economy continues to grow. Decoupling can be driven by both technological and demographic trends and usually results from a combination of the two. The growth rate of the human population has already peaked. Today’s population growth rate is one percent per year, down from its high point of 2.1 percent in the 1970s. Fertility rates in countries containing more than half of the global population are now below replacement level. Population growth today is primarily driven by longer life spans and lower infant mortality, not by rising fertility rates. Given current trends, it is very possible that the size of the human population will peak this century and then start to decline. Trends in population are inextricably linked to other demographic and economic dynamics. For the first time in human history, over half the global population lives in cities. By 2050, 70 percent are expected to dwell in cities, a number that could rise to 80 percent or more by the century’s end. Cities are characterized by both dense populations and low fertility rates. Cities occupy just 1 to 3 percent of the Earth’s surface and yet are home to nearly four billion people. As such, cities both drive and symbolize the decoupling of humanity from nature, performing far better than rural economies in providing efficiently for material needs while reducing environmental impacts. The growth of cities along with the economic and ecological benefits that come with them are inseparable from improvements in agricultural productivity. As agriculture has become more land and labor efficient, rural populations have left the countryside for the cities. Roughly half the US population worked the land in 1880. Today, less than 2 percent does. As human lives have been liberated from hard agricultural labor, enormous human resources have been freed up for other endeavors. Cities, as people know them today, could not exist without radical changes in farming. In contrast, modernization is not possible in a subsistence agrarian economy. These improvements have resulted not only in lower labor requirements per unit of agricultural output but also in lower land requirements. This is not a new trend: rising harvest yields have for millennia reduced the amount of land required to feed the average person. The average per-capita use of land today is vastly lower than it was 5,000 years ago, despite the fact that modern people enjoy a far richer diet. Thanks to technological improvements in agriculture, during the half-century starting in the mid-1960s, the amount of land required for growing crops and animal feed for the average person declined by one-half. Agricultural intensification, along with the move away from the use of wood as fuel, has allowed many parts of the world to experience net reforestation. About 80 percent of New England is today forested, compared with about 50 percent at the end of the 19th century. Over the past 20 years, the amount of land dedicated to production forest worldwide declined by 50 million hectares, an area the size of France. The “forest transition” from net deforestation to net reforestation seems to be as resilient a feature of development as the demographic transition that reduces human birth rates as poverty declines. Human use of many other resources is similarly peaking. The amount of water needed for the average diet has declined by nearly 25 percent over the past half-century. Nitrogen pollution continues to cause eutrophication and large dead zones in places like the Gulf of Mexico. While the total amount of nitrogen pollution is rising, the amount used per unit of production has declined significantly in developed nations. Indeed, in contradiction to the often-expressed fear of infinite growth colliding with a finite planet, demand for many material goods may be saturating as societies grow wealthier. Meat consumption, for instance, has peaked in many wealthy nations and has shifted away from beef toward protein sources that are less land intensive. As demand for material goods is met, developed economies see higher levels of spending directed to materially less-intensive service and knowledge sectors, which account for an increasing share of economic activity. This dynamic might be even more pronounced in today’s developing economies, which may benefit from being late adopters of resource-efficient technologies. Taken together, these trends mean that the total human impact on the environment, including land-use change, overexploitation, and pollution, can peak and decline this century. By understanding and promoting these emergent processes, humans have the opportunity to re-wild and re-green the Earth — even as developing countries achieve modern living standards, and material poverty ends. 3. The processes of decoupling described above challenge the idea that early human societies lived more lightly on the land than do modern societies. Insofar as past societies had less impact upon the environment, it was because those societies supported vastly smaller populations. In fact, early human populations with much less advanced technologies had far larger individual land footprints than societies have today. Consider that a population of no more than one or two million North Americans hunted most of the continent’s large mammals into extinction in the late Pleistocene, while burning and clearing forests across the continent in the process. Extensive human transformations of the environment continued throughout the Holocene period: as much as three-quarters of all deforestation globally occurred before the Industrial Revolution. The technologies that humankind’s ancestors used to meet their needs supported much lower living standards with much higher per-capita impacts on the environment. Absent a massive human die-off, any large-scale attempt at recoupling human societies to nature using these technologies would result in an unmitigated ecological and human disaster. Ecosystems around the world are threatened today because people over-rely on them: people who depend on firewood and charcoal for fuel cut down and degrade forests; people who eat bush meat for food hunt mammal species to local extirpation. Whether it’s a local indigenous community or a foreign corporation that benefits, it is the continued dependence of humans on natural environments that is the problem for the conservation of nature. Conversely, modern technologies, by using natural ecosystem flows and services more efficiently, offer a real chance of reducing the totality of human impacts on the biosphere. To embrace these technologies is to find paths to a good Anthropocene. The modernization processes that have increasingly liberated humanity from nature are, of course, double-edged, since they have also degraded the natural environment. Fossil fuels, mechanization and manufacturing, synthetic fertilizers and pesticides, electrification and modern transportation and communication technologies, have made larger human populations and greater consumption possible in the first place. Had technologies not improved since the Dark Ages, no doubt the human population would not have grown much either. It is also true that large, increasingly affluent urban populations have placed greater demands upon ecosystems in distant places –– the extraction of natural resources has been globalized. But those same technologies have also made it possible for people to secure food, shelter, heat, light, and mobility through means that are vastly more resource- and land-efficient than at any previous time in human history. Decoupling human well-being from the destruction of nature requires the conscious acceleration of emergent decoupling processes. In some cases, the objective is the development of technological substitutes. Reducing deforestation and indoor air pollution requires the substitution of wood and charcoal with modern energy. In other cases, humanity’s goal should be to use resources more productively. For example, increasing agricultural yields can reduce the conversion of forests and grasslands to farms. Humans should seek to liberate the environment from the economy. Urbanization, agricultural intensification, nuclear power, aquaculture, and desalination are all processes with a demonstrated potential to reduce human demands on the environment, allowing more room for non-human species. Suburbanization, low-yield farming, and many forms of renewable energy production, in contrast, generally require more land and resources and leave less room for nature. These patterns suggest that humans are as likely to spare nature because it is not needed to meet their needs as they are to spare it for explicit aesthetic and spiritual reasons. The parts of the planet that people have not yet profoundly transformed have mostly been spared because they have not yet found an economic use for them — mountains, deserts, boreal forests, and other “marginal” lands. Decoupling raises the possibility that societies might achieve peak human impact without intruding much further on relatively untouched areas. Nature unused is nature spared. 4. Plentiful access to modern energy is an essential prerequisite for human development and for decoupling development from nature. The availability of inexpensive energy allows poor people around the world to stop using forests for fuel. It allows humans to grow more food on less land, thanks to energy-heavy inputs such as fertilizer and tractors. Energy allows humans to recycle waste water and desalinate sea water in order to spare rivers and aquifers. It allows humans to cheaply recycle metal and plastic rather than to mine and refine these minerals. Looking forward, modern energy may allow the capture of carbon from the atmosphere to reduce the accumulated carbon that drives global warming. However, for at least the past three centuries, rising energy production globally has been matched by rising atmospheric concentrations of carbon dioxide. Nations have also been slowly decarbonizing — that is, reducing the carbon intensity of their economies — over that same time period. But they have not been doing so at a rate consistent with keeping cumulative carbon emissions low enough to reliably stay below the international target of less than 2 degrees Centigrade of global warming. Significant climate mitigation, therefore, will require that humans rapidly accelerate existing processes of decarbonization. There remains much confusion, however, as to how this might be accomplished. In developing countries, rising energy consumption is tightly correlated with rising incomes and improving living standards. Although the use of many other material resource inputs such as nitrogen, timber, and land are beginning to peak, the centrality of energy in human development and its many uses as a substitute for material and human resources suggest that energy consumption will continue to rise through much if not all of the 21st century. For that reason, any conflict between climate mitigation and the continuing development process through which billions of people around the world are achieving modern living standards will continue to be resolved resoundingly in favor of the latter. Climate change and other global ecological challenges are not the most important immediate concerns for the majority of the world's people. Nor should they be. A new coal-fired power station in Bangladesh may bring air pollution and rising carbon dioxide emissions but will also save lives. For millions living without light and forced to burn dung to cook their food, electricity and modern fuels, no matter the source, offer a pathway to a better life, even as they also bring new environmental challenges. Meaningful climate mitigation is fundamentally a technological challenge. By this we mean that even dramatic limits to per capita global consumption would be insufficient to achieve significant climate mitigation. Absent profound technological change **there is no credible path to meaningful climate mitigation**. While advocates differ in the particular mix of technologies they favor, we are aware of no quantified climate mitigation scenario in which technological change is not responsible for the vast majority of emissions cuts. The specific technological paths that people might take toward climate mitigation remain deeply contested. Theoretical scenarios for climate mitigation typically reflect their creators’ technological preferences and analytical assumptions while all too often failing to account for the cost, rate, and scale at which low-carbon energy technologies can be deployed. The history of energy transitions, however, suggests that there have been consistent patterns associated with the ways that societies move toward cleaner sources of energy. Substituting higher-quality (i.e., less carbon-intensive, higher-density) fuels for lower-quality (i.e., more carbon-intensive, lower-density) ones is how virtually all societies have decarbonized, and points the way toward accelerated decarbonization in the future. Transitioning to a world powered by zero-carbon energy sources will require energy technologies that are power dense and capable of scaling to many tens of terawatts to power a growing human economy. Most forms of renewable energy are, unfortunately, incapable of doing so. The scale of land use and other environmental impacts necessary to power the world on biofuels or many other renewables are such that we doubt they provide a sound pathway to a zero-carbon low-footprint future. High-efficiency solar cells produced from earth-abundant materials are an exception and have the potential to provide many tens of terawatts on a few percent of the Earth’s surface. Present-day solar technologies will require substantial innovation to meet this standard and the development of cheap energy storage technologies that are capable of dealing with highly variable energy generation at large scales. Nuclear fission today represents the only present-day zero-carbon technology with the demonstrated ability to meet most, if not all, of the energy demands of a modern economy. However, a variety of social, economic, and institutional challenges make deployment of present-day nuclear technologies at scales necessary to achieve significant climate mitigation unlikely. A new generation of nuclear technologies that are safer and cheaper will likely be necessary for nuclear energy to meet its full potential as a critical climate mitigation technology. In the long run, next-generation solar, advanced nuclear fission, and nuclear fusion represent the most plausible pathways toward the joint goals of climate stabilization and radical decoupling of humans from nature. If the history of energy transitions is any guide, however, that transition will take time. During that transition, other energy technologies can provide important social and environmental benefits. Hydroelectric dams, for example, may be a cheap source of low-carbon power for poor nations even though their land and water footprint is relatively large. Fossil fuels with carbon capture and storage can likewise provide substantial environmental benefits over current fossil or biomass energies. The ethical and pragmatic path toward a just and sustainable global energy economy requires that human beings transition as rapidly as possible to energy sources that are cheap, clean, dense, and abundant. Such a path will require sustained public support for the development and deployment of clean energy technologies, both within nations and between them, though international collaboration and competition, and within a broader framework for global modernization and development. 5. We write this document out of deep love and emotional connection to the natural world. By appreciating, exploring, seeking to understand, and cultivating nature, many people get outside themselves. They connect with their deep evolutionary history. Even when people never experience these wild natures directly, they affirm their existence as important for their psychological and spiritual well-being. Humans will always materially depend on nature to some degree. Even if a fully synthetic world were possible, many of us might still choose to continue to live more coupled with nature than human sustenance and technologies require. What decoupling offers is the possibility that humanity’s material dependence upon nature might be less destructive. The case for a more active, conscious, and accelerated decoupling to spare nature draws more on spiritual or aesthetic than on material or utilitarian arguments. Current and future generations could survive and prosper materially on a planet with much less biodiversity and wild nature. But this is not a world we want nor, if humans embrace decoupling processes, need to accept. What we are here calling nature, or even wild nature, encompasses landscapes, seascapes, biomes and ecosystems that have, in more cases than not, been regularly altered by human influences over centuries and millennia. Conservation science, and the concepts of biodiversity, complexity, and indigeneity are useful, but alone cannot determine which landscapes to preserve, or how. In most cases, there is no single baseline prior to human modification to which nature might be returned. For example, efforts to restore landscapes to more closely resemble earlier states (“indigeneity”) may involve removing recently arrived species (“invasives”) and thus require a net reduction in local biodiversity. In other circumstances, communities may decide to sacrifice indigeneity for novelty and biodiversity. Explicit efforts to preserve landscapes for their non-utilitarian value are inevitably anthropogenic choices. For this reason, all conservation efforts are fundamentally anthropogenic. The setting aside of wild nature is no less a human choice, in service of human preferences, than bulldozing it. Humans will save wild places and landscapes by convincing our fellow citizens that these places, and the creatures that occupy them, are worth protecting. People may choose to have some services — like water purification and flood protection — provided for by natural systems, such as forested watersheds, reefs, marshes, and wetlands, even if those natural systems are more expensive than simply building water treatment plants, seawalls, and levees. There will be no one-size-fits-all solution. Environments will be shaped by different local, historical, and cultural preferences. While we believe that agricultural intensification for land-sparing is key to protecting wild nature, we recognize that many communities will continue to opt for land-sharing, seeking to conserve wildlife within agricultural landscapes, for example, rather than allowing it to revert to wild nature in the form of grasslands, scrub, and forests. Where decoupling reduces pressure on landscapes and ecosystems to meet basic human needs, landowners, communities, and governments still must decide to what aesthetic or economic purpose they wish to dedicate those lands. Accelerated decoupling alone will not be enough to ensure more wild nature. There must still be a conservation politics and a wilderness movement to demand more wild nature for aesthetic and spiritual reasons. Along with decoupling humankind’s material needs from nature, establishing an enduring commitment to preserve wilderness, biodiversity, and a mosaic of beautiful landscapes will require a deeper emotional connection to them. 6. We affirm the need and human capacity for accelerated, active, and conscious decoupling. Technological progress is not inevitable. Decoupling environmental impacts from economic outputs is not simply a function of market-driven innovation and efficient response to scarcity. The long arc of human transformation of natural environments through technologies began well before there existed anything resembling a market or a price signal. Thanks to rising demand, scarcity, inspiration, and serendipity, humans have remade the world for millennia. Technological solutions to environmental problems must also be considered within a broader social, economic, and political context. We think it is counterproductive for nations like Germany and Japan, and states like California, to shutter nuclear power plants, recarbonize their energy sectors, and recouple their economies to fossil fuels and biomass. However, such examples underscore clearly that technological choices will not be determined by remote international bodies but rather by national and local institutions and cultures. Too often, modernization is conflated, both by its defenders and critics, with capitalism, corporate power, and laissez-faire economic policies. We reject such reductions. What we refer to when we speak of modernization is the long-term evolution of social, economic, political, and technological arrangements in human societies toward vastly improved material well-being, public health, resource productivity, economic integration, shared infrastructure, and personal freedom. Modernization has liberated ever more people from lives of poverty and hard agricultural labor, women from chattel status, children and ethnic minorities from oppression, and societies from capricious and arbitrary governance. Greater resource productivity associated with modern socio-technological systems has allowed human societies to meet human needs with fewer resource inputs and less impact on the environment. More-productive economies are wealthier economies, capable of better meeting human needs while committing more of their economic surplus to non-economic amenities, including better human health, greater human freedom and opportunity, arts, culture, and the conservation of nature. Modernizing processes are far from complete, even in advanced developed economies. Material consumption has only just begun to peak in the wealthiest societies. Decoupling of human welfare from environmental impacts will require a sustained commitment to technological progress and the continuing evolution of social, economic, and political institutions alongside those changes. Accelerated technological progress will require the active, assertive, and aggressive participation of private sector entrepreneurs, markets, civil society, and the state. While we reject the planning fallacy of the 1950s, we continue to embrace a strong public role in addressing environmental problems and accelerating technological innovation, including research to develop better technologies, subsidies, and other measures to help bring them to market, and regulations to mitigate environmental hazards. And international collaboration on technological innovation and technology transfer is essential in the areas of agriculture and energy.