### DA - Innovation

#### Space Commercialization drives Tech Innovation in the Status Quo – it provides a unique impetus.

Hampson 17 Joshua Hampson 1-25-2017 “The Future of Space Commercialization” <https://republicans-science.house.gov/sites/republicans.science.house.gov/files/documents/TheFutureofSpaceCommercializationFinal.pdf> (Security Studies Fellow at the Niskanen Center)//Elmer

The size of the space economy is far larger than many may think. In 2015 alone, the global market amounted to $323 billion. Commercial infrastructure and systems accounted for 76 percent of that 9 total, with satellite television the largest subsection at $95 billion. The global space launch market’s 10 11 share of that total came in at $6 billion dollars. It can be hard to disaggregate how space benefits 12 particular national economies, but in 2009 (the last available report), the Federal Aviation Administration (FAA) estimated that commercial space transportation and enabled industries generated $208.3 billion in economic activity in the United States alone. Space is not just about 13 satellite television and global transportation; while not commercial, GPS satellites also underpin personal navigation, such as smartphone GPS use, and timing data used for Internet coordination.14 Without that data, there could be problems for a range of Internet and cloud-based services.15 There is also room for growth. The FAA has noted that while the commercial launch sector has not grown dramatically in the last decade, there are indications that there is latent demand. This 16 demand may catalyze an increase in launches and growth of the wider space economy in the next decade. The Satellite Industry Association’s 2015 report highlighted that their section of the space economy outgrew both the American and global economies. The FAA anticipates that growth to 17 continue, with expectations that small payload launch will be a particular industry driver.18 In the future, emerging space industries may contribute even more the American economy. Space tourism and resource recovery—e.g., mining on planets, moons , and asteroids—in particular may become large parts of that industry. Of course, their viability rests on a range of factors, including costs, future regulation, international problems, and assumptions about technological development. However, there is increasing optimism in these areas of economic production. But the space economy is not just about what happens in orbit, or how that alters life on the ground. The growth of this economy can also contribute to new innovations across all walks of life. Technological Innovation Innovation is generally hard to predict; some new technologies seem to come out of nowhere and others only take off when paired with a new application. It is difficult to predict the future, but it is reasonable to expect that a growing space economy would open opportunities for technological and organizational innovation. In terms of technology, the difficult environment of outer space helps incentivize progress along the margins. Because each object launched into orbit costs a significant amount of money—at the moment between $27,000 and $43,000 per pound, though that will likely drop in the future —each 19 reduction in payload size saves money or means more can be launched. At the same time, the ability to fit more capability into a smaller satellite opens outer space to actors that previously were priced out of the market. This is one of the reasons why small, affordable satellites are increasingly pursued by companies or organizations that cannot afford to launch larger traditional satellites. These small 20 satellites also provide non-traditional launchers, such as engineering students or prototypers, the opportunity to learn about satellite production and test new technologies before working on a full-sized satellite. That expansion of developers, experimenters, and testers cannot but help increase innovation opportunities. Technological developments from outer space have been applied to terrestrial life since the earliest days of space exploration. The National Aeronautics and Space Administration (NASA) maintains a website that lists technologies that have spun off from such research projects. Lightweight 21 nanotubes, useful in protecting astronauts during space exploration, are now being tested for applications in emergency response gear and electrical insulation. The need for certainty about the resiliency of materials used in space led to the development of an analytics tool useful across a range of industries. Temper foam, the material used in memory-foam pillows, was developed for NASA for seat covers. As more companies pursue their own space goals, more innovations will likely come from the commercial sector. Outer space is not just a catalyst for technological development. Satellite constellations and their unique line-of-sight vantage point can provide new perspectives to old industries. Deploying satellites into low-Earth orbit, as Facebook wants to do, can connect large, previously-unreached swathes of 22 humanity to the Internet. Remote sensing technology could change how whole industries operate, such as crop monitoring, herd management, crisis response, and land evaluation, among others. 23 While satellites cannot provide all essential information for some of these industries, they can fill in some useful gaps and work as part of a wider system of tools. Space infrastructure, in helping to change how people connect and perceive Earth, could help spark innovations on the ground as well. These innovations, changes to global networks, and new opportunities could lead to wider economic growth.

#### Strong Innovation solves Extinction.

Matthews 18 Dylan Matthews 10-26-2018 “How to help people millions of years from now” <https://www.vox.com/future-perfect/2018/10/26/18023366/far-future-effective-altruism-existential-risk-doing-good> (Co-founder of Vox, citing Nick Beckstead @ Rutgers University)//Re-cut by Elmer

If you care about improving human lives, you should overwhelmingly care about those quadrillions of lives rather than the comparatively small number of people alive today. The 7.6 billion people now living, after all, amount to less than 0.003 percent of the population that will live in the future. It’s reasonable to suggest that those quadrillions of future people have, accordingly, hundreds of thousands of times more moral weight than those of us living here today do. That’s the basic argument behind Nick Beckstead’s 2013 Rutgers philosophy dissertation, “On the overwhelming importance of shaping the far future.” It’s a glorious mindfuck of a thesis, not least because Beckstead shows very convincingly that this is a conclusion any plausible moral view would reach. It’s not just something that weird utilitarians have to deal with. And Beckstead, to his considerable credit, walks the walk on this. He works at the Open Philanthropy Project on grants relating to the far future and runs a charitable fund for donors who want to prioritize the far future. And arguments from him and others have turned “long-termism” into a very vibrant, important strand of the effective altruism community. But what does prioritizing the far future even mean? The most literal thing it could mean is preventing human extinction, to ensure that the species persists as long as possible. For the long-term-focused effective altruists I know, that typically means identifying concrete threats to humanity’s continued existence — like unfriendly artificial intelligence, or a pandemic, or global warming/out of control geoengineering — and engaging in activities to prevent that specific eventuality. But in a set of slides he made in 2013, Beckstead makes a compelling case that while that’s certainly part of what caring about the far future entails, approaches that address specific threats to humanity (which he calls “targeted” approaches to the far future) have to complement “broad” approaches, where instead of trying to predict what’s going to kill us all, you just generally try to keep civilization running as best it can, so that it is, as a whole, well-equipped to deal with potential extinction events in the future, not just in 2030 or 2040 but in 3500 or 95000 or even 37 million. In other words, caring about the far future doesn’t mean just paying attention to low-probability risks of total annihilation; it also means acting on pressing needs now. For example: We’re going to be better prepared to prevent extinction from AI or a supervirus or global warming if society as a whole makes a lot of scientific progress. And a significant bottleneck there is that the vast majority of humanity doesn’t get high-enough-quality education to engage in scientific research, if they want to, which reduces the **odds that we have enough trained scientists to come up with the breakthroughs** we need as a civilization to survive and thrive. So maybe one of the best things we can do for the far future is to improve school systems — here and now — to harness the group economist Raj Chetty calls “lost Einsteins” (potential innovators who are thwarted by poverty and inequality in rich countries) and, more importantly, the hundreds of millions of kids in developing countries dealing with even worse education systems than those in depressed communities in the rich world. What if living ethically for the far future means living ethically now? Beckstead mentions some other broad, or very broad, ideas (these are all his descriptions): Help make computers faster so that people everywhere can work more efficiently Change intellectual property law so that technological innovation can happen more quickly Advocate for open borders so that people from poorly governed countries can move to better-governed countries and be more productive Meta-research: improve incentives and norms in academic work to better advance human knowledge Improve education Advocate for political party X to make future people have values more like political party X ”If you look at these areas (economic growth and technological progress, access to information, individual capability, social coordination, motives) a lot of everyday good works contribute,” Beckstead writes. “An implication of this is that a lot of everyday good works are good from a broad perspective, even though hardly anyone thinks explicitly in terms of far future standards.” Look at those examples again: It’s just a list of what normal altruistically motivated people, not effective altruism folks, generally do. Charities in the US love talking about the lost opportunities for innovation that poverty creates. Lots of smart people who want to make a difference become scientists, or try to work as teachers or on improving education policy, and lord knows there are plenty of people who become political party operatives out of a conviction that the moral consequences of the party’s platform are good. All of which is to say: Maybe effective altruists aren’t that special, or at least maybe we don’t have access to that many specific and weird conclusions about how best to help the world. If the far future is what matters, and generally trying to make the world work better is among the best ways to help the far future, then effective altruism just becomes plain ol’ do-goodery.

**Inequality**

**Private entities uniquely equalize outer space activities in developed and undeveloped areas.**

**Meyer 10,** Zach Meyer, Private Commercialization of Space in an International Regime: A Proposal for a Space District, 30 Nw. J. Int'l L. & Bus. 241 (2010) https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1705&context=njilb

Commercial profit is sure to attach to the above scientific and industrial advances as well. Cheaper drugs, electronic components, and building materials mean higher profits for those companies willing to invest in space. Furthermore, the construction of a space infrastructure would stimulate all levels of the economy. 2' In fact, space exploration and development has already birthed a multi-billion dollar industry.2 2 Last decade's telecommunications boom spurred the initial development of a commercial space infrastructure: the building, launching, and maintaining space activity" translates into "more necessary infrastructure" and "more economic stimulus." The potential for future commercial profit from developing space infrastructure will also depend on another imminent space activity-space mining. The minable resources located on the Moon and in near-Earth asteroids are both immense and valuable.25 These extra-terrestrial resources are probably necessary to build a comprehensive space infrastructure: it simply costs too much to blast industrial materials in mass out of Earth's 26 gravity. Outer space need not be all about dollars and cents though. Great social benefit also attaches to the exploration and development of outer space. Notably, outer space may provide solutions to energy and hazardous waste problems here on Earth. As finite energy sources are slowly depleted here on Earth, it is extremely relevant that bountiful supplies of energy exist in outer space. Solar energy is in almost infinite supply, 2 7 significant hydrocarbon deposits exist nearby, 28 and the fuel for ultra-clean fusion orbits the Earth.29 Outer space also provides a possible answer for the problem of accumulating hazardous waste on Earth-simply eject it into the far recesses of space.30 Importantly, both of the above resolutions to the energy crisis and the hazardous waste problem could be of great social benefit to all people of Earth, whether they are citizens of space-faring States or not. Furthermore, an appropriate legal regime for the commercial development of outer space could also level the playing field and enable undeveloped States to compete with developed States, thereby promoting the social benefit of equality for Earth-bound States.3

Space has, however, offered the scientific, industrial, commercial and social benefits discussed in Part II.A since the inception of the Space Age five decades ago. The difference between then and now is that space activity was once prohibitively expensive, so much so that only sovereign superpowers could entertain such activities. NASA served well when the only possible financier was the U.S. government, but now, space activity is far more affordable, and innovative business models can be realistically financed. Simply put, private commercial space enterprise can get the job done just as well as national space agencies, but more efficiently. Private commercial space enterprise also offers a uniquely egalitarian system by which undeveloped nations may benefit from the exploration and use of outer space as much as developed nations. As discussed in Part I, private commercial space enterprise has recently demonstrated that it is as capable as and arguably cheaper than national space agencies when it comes to exploring and developing outer space. SpaceShipOne, constructed in pursuit of the Ansari X-Prize, blasted off into space with three people onboard and subsequently returned safely twice in two weeks.3 2 Its financier, Microsoft co-founder Paul Allen, financed the project with a mere $20 million-a far cry from the exorbitant costs of a NASA project. After the success of SpaceShipOne, its designer, Burt Rutan, joined British billionaire entrepreneur Richard Branson to found Virgin Galactic, the world's first space liner company. 34 Virgin Galactic has already presold seats onboard future space liners to tour space at the relatively meager sum of $200,000 per seat.35 Customers are already lining up-Virgin Galactic has about 200 assured passengers, $30 million in deposits, and about 85,000 registered interested customers.36 Impatient millionaires have instead taken up offers from the Russian government, and have paid $20 million to hitch rides on Russian Soyuz rockets on trips to the ISS. 3 7 These tourist enterprises are financing human space travel by tapping into the private market, a method never used by NASA. As Virgin Galactic and the Russian government have demonstrated, the private market is a willing financier for space enterprise if there is something to gain. Perhaps in hopes of mirroring the private commercial success of the XPrize, American millionaire entrepreneur Robert Bigelow announced his own $50 million contest entitled America's Space Prize.38 The Space Prize is substantially more ambitious than the X-Prize. To win the Space Prize, a team must construct and launch a space vehicle that can bring five persons into orbit around the Earth, dock and service an inflatable private space station, and return to Earth, twice in a given period.39 Bigelow's company, Bigelow Aeronautics, purchased the technology and patent rights for the inflatable space station from NASA because NASA did not have the funding necessary to continue its research and development. 4 0 Already, Bigelow Aerospace has successfully put two prototypes of the station, named Genesis I and II, into the Earth's orbit.41 Bigelow Aerospace plans to eventually use the final station for commercial purposes such as research, tourism, and industrial production.42 NASA has recognized the success of these commercial private space endeavors and joined the party, introducing its Centennial Challenges.43 However, the challenges sponsored by NASA are relatively modest, generally featuring prizes under one million dollars." The major limitation on the size of the prizes is government funding.4 5 Private commercial space enterprise is a more egalitarian model than national space agencies for exploring and developing space too. Private commerce has enabled undeveloped countries to compete with the major space-faring nations rather than depend on them. Also, while national space agencies serve the interests of their own citizenry, private commercial space enterprise can serve their shareholders, regardless of citizenry. Thus, an undeveloped nation may employ an international space enterprise whose shareholders are in part or in whole drawn from the citizenry of the nation. For example, consider Chile, which established the Chilean Space Agency ("CSA") in 2001. As recently as 2007, the CSA began entertaining bids from international space companies regarding an Earth observation satellite project.46 Normally, the CSA would have to politely request and dutifully pay a space-faring State like the United States or Russia to develop and launch a satellite into orbit. In addition to offending state independence and sovereignty, those payments go into the pockets of the taxpayers of the space-faring State. However, the CSA's use of an international space company to implement its own space activities highlights how a robust commercial regime could bolster participation in space independent of the most developed space-faring States. Chile need not request a space-faring State to implement their own space activities if it can turn to a space company, and the payments to the space company could ostensibly be enjoyed by Chilean citizens that are shareholders in the international space company

**Counterplan**

**Plan text: States ought to abide by an international regime governing outer space resources.**

**Meyer 10,** Zach Meyer, Private Commercialization of Space in an International Regime: A Proposal for a Space District, 30 Nw. J. Int'l L. & Bus. 241 (2010) https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1705&context=njilb

The international community should soon establish an appropriate international regime to govern the exploitation of outer space resources. Private commercial space enterprise is poised to explore, use, and develop outer space, the Moon, and other celestial bodies in our solar system, and private commercial space enterprise should be given the green light to do so-for their own profit and for the benefit of all mankind. That exploitive activity is only authorized if an appropriately established international regime governs the process, something that is not yet in place. Thus, because private commercial space enterprise is poised to and should exploit outer space, an international regime should be established. The important question is: "What sort of regime is desirable and is that regime possible?" To answer this, it is appropriate to begin with what the regime must do. It must (1) appeal to international consensus ("all mankind"); and (2) encourage private commercial space enterprise. The regime could come in many different sorts varying in degree from the rhetorical to the material. On the rhetorical extreme, the regime could be a document-either a constitution or a detailed treaty-that establishes what sort of exploitation may be done by whom in which places according to what processes for establishing claims, profits, and equitable sharing. On the material extreme, the regime could be instituted by a living organization, composed of elected or appointed administrators, with the resources necessary to such governance at hand-chief and foremost, a judicial or arbitration facility. Either sort of regime could be agreed upon by international consensus, and in fact in the past, both have been the subject of international consensus. The Moon Treaty itself is heavier on rhetoric, because it is totally absent of any administrative regime. The Liability Convention and Registration Convention, by contrast, are heavier on material, being accompanied by complete administrative regimes. Here, the material sort would better encourage private commercial space enterprise because the exploitation of outer space will require a flexible and responsive regime to accommodate the enterprises' developing needs. If a rhetorical regime were drafted, the Moon Treaty would perpetuate its own shortcomings. It would be unresponsive to developing needs and would require further amendment, elaboration, or interpretation to respond to private commercial space enterprise's needs as they come up. In the hope of encouraging discussion about what kind of material regime would best consider international interests while freely encouraging private commercial exploitation of outer space resources, I now suggest a skeleton for a potential international regime. Rather than settling for drafting another principled document, the international community could establish a more concrete, material regime in the form of a physical space district. This space district would be independent of any particular State sovereignty, instead of being dependent on an international consensus. Because the implementation of such a space district would be completely novel and its implications potentially far-ranging, the mere idea of such an international regime is indeed delicate. Notwithstanding those delicacies, an independent, international space district could potentially resolve the conflicts between developed space-faring States and undeveloped Earthbound States and between public sovereigns and private enterprise. A space district, to be of any use, would first have to appeal to the international community. Developed space-faring States may resent the fact that the authority for exploiting outer space resources is subject to the discretions of undeveloped Earth-bound States, that their unique "right" to exploit, created and paid for by commitments to economic, scientific, and technological development, could be reduced to a "privilege" by those who have not made and paid for such commitments. Undeveloped Earth-bound States, on the other hand, may find it appealing that the developed spacefaring States are so restricted from unilaterally exploiting space to their own advantage. The key to making the space district appeal to all sides is to establish the space district in a manner of sovereign neutrality. Sovereign neutrality may perhaps be accomplished by having an international administration independent of particular sovereigns' influence govern the space district. That administration could perhaps be composed of a governance board of representatives of which half is appointed by certain member States of the United Nations and half is elected by all the member States. Or perhaps neutrality could be ensured by distinguishing participation in the space district by a certain kind of citizenship. That citizenship could resemble a sort of first "international citizenship," which could be either inclusive (a citizenship that can be maintained in addition to one's own original citizenship[s]) or exclusive (a citizenship that can be maintained only in alternative to one's own original citizenship[s]). That citizenship need not be structured as "international" either, if such an extension of citizenship is too novel and dramatic for too many national sovereigns. Less dramatic, although still novel in its own respect, would be to construct the citizenship as an altogether new citizenship independent of any other. That is, the international community would not be creating an international entity, but instead a new national entity created by the international community. After all, no rule states that a new nation can only be created by rebellion and secession-why not the peaceful creation of a nation, whose creation benefits all mankind? I will term this sort of "nation" as neither international nor exactly national, but instead supra national. How a space district could benefit all mankind is an important issue to address too. After all, to comply with the principles inherent in the Outer Space Treaty and Moon Treaty, this space district must "equitably share" whatever profits or benefits exploitation of outer space produces. Whether the space district is structured as international or supra-national, it must maintain some sort of relationship with "all mankind." Particularly if the space district is structured as an international entity, the simplest way to relate the space district to the international community would be by taxes. The proceeds of a space-district-targeted tax would be subject to distribution in the international community with due regard for each sovereign's involvement in space exploitation and also the inability to be so involved. If the space district is structured as a supra-national entity, the simplest way to relate the space district to the international community would be by corporate distributions.88 That may be best affected by, in addition to offering a unique brand of citizenship, offering companies a unique brand of incorporation. The benefits and profits of exploiting outer space could be purposefully funneled through international space corporations authorized to operate in the space district. As long as shareholding status is freely open to all citizens of the world-or if only to citizens of the space district, as long as the space district's citizenship is open to all the world the citizens of any country, developed or undeveloped, would be freely able to invest in the exploitation of space and equitably receive a share of the returns. In addition to being internationally appealing, a space district must also effectively encourage private commercial space enterprises to exploit outer space. Perhaps, most dramatically, the space district could be given exclusive rights to exploit the resources of outer space. Private commercial space enterprise would then necessarily flock to the space district to operate rather than in their national contexts, provided the space district regulated space enterprise as effectively as sovereign States. A space district would also have benefits inherent in physical consolidation that could encourage private commercial space enterprise. Specifically, the infrastructure and governance of all aspects of the space industry could be consolidated. Satellites and space vehicles could be constructed, tested and evaluated, launched, tracked, and returned in the same location. And the governing regulatory authority could be there through the entire development, launch, and return process to ensure compliance. But why would all space enterprise, private or otherwise, want to operate in a space district? Perhaps a very powerful reason would be tax incentives. If companies and individuals living and operating in the space district were tax-favored, perhaps even tax-free, the space district could essentially serve as a space industry incubator-it would be a creative extension of zoning laws to incentivize a certain sort of development. While these are all merely suggestions, they aptly demonstrate how the structure of a space district could be very flexibly adapted to address the concerns of a diverse international community as well as of the private commercial community. It is my hope that the concept of a space district spurs the development of an international regime to govern the private commercial exploitation of outer space. We can all benefit from this.

### CP - PAROS

#### Counterplan: States ought to abide by the Prevention of an Arms Race Treaty in Space (PAROS)

NTI 21, “Proposed Prevention of an Arms Race in Space (PAROS) Treaty.” PROPOSED PREVENTION OF AN ARMS RACE IN SPACE (PAROS) TREATY, 5 Apr. 2021, www.nti.org/learn/treaties-and-regimes/proposed-prevention-arms-race-space-paros-treaty/. In 1985 the CD established an ad hoc committee to identify and examine issues relevant to PAROS such as the legal protection of satellites, nuclear power systems in space, and various confidence-building measures. The United States resolutely opposed giving the committee a negotiating mandate, preferring bilateral talks with the Soviet Union. The committee convened each year through 1994. No further committee meeting occurred due to objections made by the United States. In 1990 the United States stated that it “has not identified any practical outer space arms control measures that can be dealt within a multilateral environment.” With its large missile defense program and technical advantages in potential space weaponry, the United States has consistently refused to negotiate PAROS in the CD. Under the draft treaty submitted to the CD by Russia in 2008, State Parties would commit to refrain from placing objects carrying any type of weapon into orbit, installing weapons on celestial bodies, and threatening to use force against objects in outer space. State Parties would also agree to practice agreed confidence-building measures. A PAROS treaty would complement and reaffirm the importance of the 1967 Outer Space Treaty, which aims to preserve space for peaceful uses by prohibiting the use of space weapons, the development of space-weapon technology, and technology related to “missile defense.” The treaty would prevent any nation from gaining a military advantage in outer space.

## Case

#### Cap solves the environment and poverty – the alt destroys it – statistics and history

**Houser 17** — Adam Houser, BA from Lafayette in Government, National Field Director for Committee for a Constructive Tomorrow (CFACT), 11-2-2017 ("Want to Protect the Environment? Embrace Capitalism", No Publication, Accessed Online at http://www.cfact.org/2017/11/02/want-to-protect-the-environment-embrace-capitalism/, Accessed on 2-12-2018, SV)

At the People’s Climate March in April of this year, one young woman held a particularly interesting, and unfortunately terribly inaccurate sign. It said: “List of things capitalism killed: F&\*#%\*@ everything.” What this individual, and much of America and the world, fail to realize, is that **capitalism’s benefits far outweigh its faults**. Not only has capitalism lifted **more people out of poverty than any system** ever implemented in the history of civilization, but in so doing, **it has done more to protect the environment than any socialist or communist initiative**. If you want to protect the environment, you should love capitalism. Capitalism increases living standards. When living standards increase, people care more about the environment, and are more able to do something to protect it. According to the World Bank, world poverty rates have been declining in every region of the world over the last several decades. The Economist and the American Enterprise Institute say the primary reason for this is free markets, which involves the opening up of trade between nations. This is a cornerstone of capitalism. As countries find more markets to sell their goods and services to, jobs, and the elimination of poverty, follows. This is important, because as a nation creates more wealth, **more individuals will inevitably want to give back to society**. We would not have the national parks in America without wealthy individuals voluntarily giving away their wealth because they wanted to benefit society. Look at what John D. Rockefeller, Jr. did, according to the National Park Service: “The contributions of John D. Rockefeller, Jr., and his son Laurance S. Rockefeller to expand the national park system are especially remarkable. They gave more than $3 million for land and park roads at Acadia, more than $2 million to enlarge and improve Grand Teton National Park, more than $5 million for land to establish Great Smoky Mountains National Park, more than $2 million for the land comprising Virgin Islands National Park, more than $1.6 million to expand Yosemite, and lesser amounts for lands at Big Bend, Glacier, Grand Canyon, Haleakala, Lassen Volcanic, Olympic, Rocky Mountain, and Shenandoah national parks; Antietam, Big Hole, and Fort Donelson national battlefields; Capulin Volcano and George Washington Birthplace national monuments; Colonial National Historical Park; Ford’s Theatre National Historic Site; and the Blue Ridge Parkway.” Many contributions from wealthy individuals happened before Congress had even created the National Park Service in 1916. The museums at Mesa Verde National Park, Yosemite, and Yavapai Observation StationöMuseum at Grand Canyon National Park all are in existence because of private philanthropy, and those are only a few examples. Not only does more wealth provide greater opportunities for protecting the environment, but it also creates greater demand for it. According to Donald Boudreaux’s book Globalization, “Environmental quality is very much like leisure time: as people become wealthier they demand more of it, mostly because they can better afford it.” John Tamny, contributor at Forbes, explains this concept well: “In the 1930s the number of trips Americans took to U.S. national parks and forests were negligible. By 1950 total visits were under 200 million. Today parks and forests average 1.4 billion visitors annually. Today’s citizens have the time to watch the trees grow and smell the roses.” While of course there is poverty in the United States that we should all work towards reducing, over time, the overall quality of life of Americans has drastically improved. This means Americans need to spend less time doing tasks by hand that they can now afford to hire a business to do, or can now use technology to accomplish. Their minds are less focused on daily survival, and more on broader issues. This is a positive thing for protecting the environment. When you aren’t concerned about where or how to eat and get clean water or shelter, you care more about whether air is of good quality or if the nearby lake is protected from pollution. But the evidence showing that capitalism helps improve environmental quality is not just clear from history, it is shines as clear as day in statistical data as well. Yale University has a metric called the Environmental Performance Index, which takes statistics on environmental health and ecosystem vitality to rate a country’s environmental protection. James Roberts and Ryan Olson of the Heritage Foundation took this number and compared it to the Index of Economic Freedom, which measures how economically free through capitalism a nation is. They found a strong trend in the data that “indicates that as countries move from economic repression to economic freedom, their environments improve as well.” Olson and Roberts then looked at the state of private property rights in several countries, and compared that to Yale’s Environmental Performance Index. They found an **incredibly strong correlation** in this data, suggesting that as private property rights increase, so does environmental protection and quality. The two researchers explain: “Because land values usually increase over time, owners have an incentive to maintain the quality of the land and its improvements in order to preserve its value. Owners of private property have no interest in destroying the value of the land or its environmental qualities, because **they would not profit from such degradation**.” In the 1990’s, Iceland actually began to experiment with property rights when it comes to fisheries. It was long thought that using private property rights on fish or areas of the ocean, since there is no way to stop fish from swimming to other parts, was impossible. But Iceland began using “Individual Transferable Quotas” which allowed fishermen to “harvest specific portions of the overall quota of marine fish.” If a fisherman was having less success meeting their part of the quota, they could sell their rights to other more efficient fishermen, thus creating an incentive to reward more efficient, successful fishermen. **This helped limit over-fishing, and over time fish stocks improved, thus increasing environmental quality**. But **what about the track record of communist countries**? How do they do at protecting the environment? Countries in the European Soviet bloc, as well as the USSR and Venezuela, do not just fare worse than capitalist countries at protecting the environment; they do such an awful job at protecting the environment that **it inevitably becomes a humanitarian crisis.** According to a report from the Multinational Monitor in 1990, air pollution was a serious problem for the Soviet Union. 40% of citizens lived in areas where contaminants were three or four times the maximum safety levels. In addition, water quality was abysmal. “In Leningrad, nearly half of the children have intestinal disorders caused by drinking contaminated water from what was once Europe’s most pristine supply.” 44% of East German forests were heavily affected by acid rain that came from coal facilities that lacked the equipment necessary to scrub sulfur from emissions. East Germany had air pollution that was deemed to be as many as 12 times worse than that in capitalist West Germany. Venezuela is in a deep crisis on almost **every social level**. Food and basic necessities such as toilet paper are becoming almost non-existent. Strong socialist policies have caused deep shortages. While the government was focused on depriving individuals of private property and growing its control over the economy, it ignored the issue of water supply.

#### Capitalism solves war on a massive scale – it creates lock-in mechanisms that bind countries together and economically dampens conflict – robust studies prove.

**Dafoe and Kelsey 14** (Allan & Nina; assistant professor in political science at Yale & research associate in international economics at Berkeley; Journal of Peace Research, “Observing the capitalist peace: Examining market-mediated signaling and other mechanisms,” http://jpr.sagepub.com.proxy.lib.umich.edu/content/51/5/619.full)

Countries with liberal political and economic systems **rarely use military force** against each other. This anomalous peace has been most prominently attributed to the ‘democratic peace’ – the apparent tendency for democratic countries to avoid militarized conflict with each other (Maoz & Russett, 1993; Ray, 1995; Dafoe, Oneal & Russett, 2013).More recently, however, scholars have proposed that the liberal peace could be partly (Russett & Oneal, 2001) or primarily (Gartzke, 2007; but see Dafoe, 2011) **attributed to** liberal economic factors, such as commercial and financial **interdependence**. In particular, Erik Gartzke, Quan Li & Charles Boehmer (2001), henceforth referred to as GLB, have demonstrated that measures of capital openness have a substantial and **statistically significant association with peaceful** dyadic relations. Gartzke (2007) confirms that this association is robust to a large variety of model specifications. To explain this correlation, GLB propose that countries with open capital markets are more able to credibly signal their resolve through the bearing of greater economic costs prior to the outbreak of militarized conflict. This explanation is novel and plausible, and resonates with the rationalist view of asymmetric information as a cause of conflict (Fearon, 1995). Moreover, it implies clear testable predictions on evidential domains different from those examined by GLB. In this article we exploit this opportunity by constructing a confirmatory test of GLB’s theory of market-mediated signaling. We first develop an innovative quantitative case selection technique to identify crucial cases where the mechanism of market-mediated signaling should be most easily observed. Specifically, we employ quantitative data and the statistical models used to support the theory we are probing to create an impartial and transparentmeans of selecting cases in which the theory – as specified by the theory’s creators –makes its most confident predictions.We implement three different case selection rules to select cases that optimize on two criteria: (1) maximizing the inferential leverage of our cases, and (2) minimizing selection bias. We examine these cases for a necessary implication of market-mediated signaling: that key participants drew a connection between conflictual events and adverse market movements. Such an inference is a necessary step in the process by which market-mediated costs can signal resolve. For evidence of this we examine news media, government documents, memoirs, historical works, and other sources. We additionally examine other sources, such as market data, for evidence that economic costs were caused by escalatory events. Based on this analysis, we assess the evidence for GLB’s theory of market mediated costly signaling. Our article then considers a more complex heterogeneous effects version of market-mediated signaling in which unspecified scope conditions are required for the mechanism to operate. Our design has the feature of selecting cases in which scope conditions are most likely to be absent. This allows us to perform an exploratory analysis of these cases, looking for possible scope conditions. We also consider alternative potential mechanisms. Our cases are reviewed in more detail in the online appendix.1 To summarize our results, our confirmatory test finds that while market-mediated signaling may be operative in the most serious disputes, it was largely absent in the less serious disputes that characterize most of the sample of militarized interstate disputes (MIDs). This suggests either that other mechanisms account for the correlation between capital openness and peace, or that the scope conditions for market-mediated signaling are restrictive. Of the signals that we observed, **strategic market-mediated signals were relatively more important than automatic market-mediated signals in the most serious conflicts.** We identify a number of potential scope conditions, such as that (1) the conflict must be driven by bargaining failure arising from uncertainty and (2) the economic costs need to escalate gradually and need to be substantial, but less than the expected military costs of conflict. Finally, there were a number of other explanations that seemed present in the cases we examined and could account for the capitalist peace: capital openness is associated with **greater anticipated economic costs of conflict**; capital openness leads third parties to have a greater stake in the conflict and therefore be more willing to intervene; a dyadic acceptance of the status quo could promote both peace and capital openness; and countries seeking to institutionalize a regional peace might instrumentally harness the pacifying effects of liberal markets. The correlation: Open capital markets and peace The empirical puzzle at the core of this article is the significant and robust correlation noted by GLB between high levels of capital openness in both members of a dyad and the infrequent incidence of militarized interstate disputes (MIDs) and wars between the members of this dyad (Gartzke, Li & Boehmer, 2001). The index of capital openness (CAPOPEN) is intended to capture the ‘difficulty states face in seeking to impose restrictions on capital flows (the degree of lost policy autonomy due to globalization)’ (Gartzke & Li, 2003: 575). CAPOPEN is constructed from data drawn from the widely used IMF’s Annual Reports on Exchange Arrangements and Exchange Controls; it is a combination of eight binary variables that measure different types of government restrictions on capital and currency flow (Gartzke, Li & Boehmer, 2001: 407). The measure of CAPOPEN starts in 1966 and is defined for many countries (increasingly more over time). Most of the countries that do not have a measure of CAPOPEN are communist.2 GLB implement this variable in a dyadic framework by creating a new variable, CAPOPENL, which is the smaller of the two dyadic values of CAPOPEN. This operationalization is sometimes referred to as the ‘weak-link’ specification since the functional form is consonant with a model of war in which the ‘weakest link’ in a dyad determines the probability of war. CAPOPENL has a negative monotonic association with the incidence of MIDs, fatal MIDs, and wars (see Figure 1).3 The strength of the estimated empirical association between peace and CAPOPENL, using a modified version of the dataset and model from Gartzke (2007), is comparable to that between peace and, respectively, joint democracy, log of distance, or the GDP of a contiguous dyad (Gartzke, 2007: 179; Gartzke, Li & Boehmer, 2001: 412). In summary, CAPOPENL seems to be an important and robust correlate of peace. The question of why specifically this correlation exists, however, remains to be answered. The mechanism: Market-mediated signaling? Gartzke, Li & Boehmer (2001) argue that the classic liberal account for the pacific effect of economic interdependence – that interdependence increases the expected costs of war – is not consistent with the bargaining theory of war (see also Morrow, 1999). GLB argue that ‘conventional descriptions of interdependence see war as less likely because states face additional opportunity costs for fighting. The problem with such an account is that it ignores incentives to capitalize on an opponent’s reticence to fight’ (Gartzke, Li & Boehmer, 2001: 400.)4 Instead, GLB (see also Gartzke, 2003; Gartzke & Li, 2003) argue that financial interdependence could promote peace by facilitating the sending of costly signals. As the probability of militarized conflict increases, states incur a variety of automatic and strategically imposed economic costs as a consequence of escalation toward conflict. Those states that persist in a dispute despite these costs will reveal their willingness to tolerate them, and hence signal resolve. The greater the degree of economic interdependence, the more a resolved country could demonstrate its willingness to suffer costs ex ante to militarized conflict. Gartzke, Li & Boehmer’s mechanism implies a commonly perceived costly signal before militarized conflict breaks out or escalates: if market-mediated signaling is to account for the correlation between CAPOPENL and the absence of MIDs, then visible market-mediated costs should occur prior to or during periods of real or potential conflict (Gartzke, Li & Boehmer, 2001). Thus, the proposed mechanism should leave many visible footprints in the historical record. This theory predicts that these visible signals must arise in any escalating conflict, involving countries with high capital openness, in which this mechanism is operative Clarifying the signaling mechanism Gartzke, Li & Boehmer’s signaling mechanism is mostly conceptualized on an abstract, game-theoretic level (Gartzke, Li & Boehmer, 2001). In order to elucidate the types of observations that could inform this theory’s validity, we discuss with greater specificity the possible ways in which such signaling might occur. A conceptual classification of costly signals The term signaling connotes an intentional communicative act by one party directed towards another. Because the term signaling thus suggests a willful act, and **a signal of resolve is only credible if it is costly**, scholars have sometimes concluded that states involved in bargaining under incomplete information could advance their interests by imposing costs on themselves and thereby signaling their resolve (e.g. Lektzian & Sprecher, 2007). However, the game-theoretic concept of signaling refers more generally to any situation in which an actor’s behavior reveals information about her private information. In fact, states frequently adopt sanctions with low costs to themselves and high costs to their rivals because doing so is often a rational bargaining tactic on other grounds: they are trying to coerce their rival to concede the issue. Bargaining encounters of this type can be conceptualized as a type of war-of-attrition game in which each **actor attempts to coerce the other through the imposition of escalating costs**. Such encounters also provide the opportunity for signaling: when states resist the costs imposed by their rivals, **they ‘signal’ their resolve.** If at some point one party perceives the conflict to have become too costly and steps back, that party ‘signals’ a lack of resolve. Thus, this kind of signaling arises as a by-product of another’s coercive attempts. In other words, costly signals come in two forms: self-inflicted (information about a leader arising from a leader’s intentional or incidental infliction of costs on himself) or imposed (information about a leader that arises from a leader’s response to a rival’s imposition of costs). Additionally, costs may arise as an automatic byproduct of escalation towards military conflict or may be a tool of statecraft that is strategically employed during a conflict. The automatic mechanism stipulates that as the probability of conflict increases, **various economic assets will lose value due to the risk of conflict and investor flight.** However, the occurrence of these costs may also be intentional outcomes of specific escalatory decisions of the states, as in the case of deliberate sanctions; in this case they are strategic. Finally, at a practical level, we identify three different potential kinds of economic costs of militarized conflict that may be mediated by open capital markets: capital costs from political risk, monetary coercion, and business sanctions.