## 1AC — CEDA (KU HS)

### 1AC — Advantage

#### The Advantage is Megaships —

#### The United States is expanding antitrust enforcement of international shipping

Seward & Kissell 3/2/22, Law firm specializing in antitrust. (Federal Maritime Commission and Department of Justice Announce New Steps to Strengthen Antitrust Enforcement Efforts in the Shipping Industry, <https://www.sewkis.com/publications/federal-maritime-commission-and-department-of-justice-announce-new-steps-to-strengthen-antitrust-enforcement-efforts-in-the-shipping-industry/>)

Building on our July 2021 alert regarding the signing of the first interagency Memorandum of Understanding (“MOU”) entered into by and between the Federal Maritime Commission (“FMC”) and the Department of Justice (“DOJ”), the DOJ and FMC on February 28 issued a joint release announcing additional steps that each agency would take to strengthen their partnership and support efforts to enforce the antitrust laws of the United States, reflecting their ongoing focus on promoting competition in the shipping industry. In press releases posted to each agency’s website, the Antitrust Division of DOJ and the FMC disclosed that “the Justice Department will provide the FMC with the support of attorneys and economists from the Antitrust Division for enforcement of violations of the Shipping Act and related laws” and that “the FMC will provide the Antitrust Division with support and maritime industry expertise for Sherman Act and Clayton Act enforcement actions.” This interagency initiative highlights an increasing level of sophistication and an ongoing focus by both DOJ and FMC to investigate and enforce violations of the Shipping Act and the antitrust laws of the United States. Simultaneously, the White House also on February 28 released a companion fact sheet that highlights ongoing enforcement efforts by the Executive Branch, with a particular focus on ocean carrier companies and alliances that operate in the container shipping industry. The fact sheet includes criticism of ocean carrier detention and demurrage fees and price increases, and contends that certain ocean carrier business practices have contributed to supply chain disruptions and port congestion. The fact sheet also notably states that the FMC will continue ramping up oversight of the global ocean shipping industry, and seeks additional reforms that “address the current antitrust immunity for ocean shipping alliances.” As shipping industry participants have speculated that supply chain pressures may last well into 2022, we expect that the government’s focus on fair competition in the shipping industry will continue.

#### They’re targeting all major shipping alliances

Consadine 21, Attorney with Seward & Kissell LLP. (Michael, Shipping Companies Beware: Antitrust Challenges Ahead as DOJ Focuses On Industry, <https://www.sewkis.com/publications/shipping-companies-beware-antitrust-challenges-ahead-as-doj-focuses-on-industry/>)

On July 12, 2021, the FMC and DOJ signed its first interagency MOU to foster cooperation in the enforcement of antitrust and other laws related to the maritime industry. Key provisions of the MOU provide that the agencies will: i) share information and materials relevant to the competitive conditions in the U.S.-international ocean liner shipping industry, including terminal services provided to ocean liners, and ii) confer, at least annually, to discuss and review enforcement and regulatory matters. Unlike the FMC, DOJ has the authority to bring criminal charges against alleged offenders of antitrust laws. In the past, DOJ has made its presence known by issuing statements regarding certain alliance agreements (vessel-sharing agreements); this MOU raises the stakes as it suggests more intense scrutiny by DOJ. FMC Activity, Audit Program and Recent Litigation On July 19, 2021, within days of the Executive Order and the signing of the MOU, the FMC also disclosed the Vessel-Operating Common Carrier Audit Program to review carrier compliance with FMC’s detention and demurrage rule. As part of this new audit program, the FMC will audit the top nine carriers by market share ― i.e., Maersk, MSC, CMA CGM, COSCO Group, Hapag-Lloyd, ONE, Evergreen, HMM and Yang Ming. Initially, the FMC will request information from the carriers to create a database of quarterly reports on detention and demurrage practices, and will follow with individual carrier interviews. The audit may also focus on other aspects of these companies’ practices and operations, such as billing, appeals procedures, penalties assessed by the lines, and any other restrictive practices. Significantly, the FMC has already been auditing carriers to address issues concerning intermodal congestion related to COVID-19 and to identify operational solutions to cargo delivery system challenges. The FMC is apparently poised to investigate eight carriers ― CMA CGM, Hapag-Lloyd, HMM, Matson, MSC, OOCL, SM Line and Zim ― that were identified as having implemented congestion-related surcharges. In August, the FMC requested information about these surcharges from these carriers. The FMC’s inquiry may focus on whether surcharges were implemented following proper notice, if their purpose was clearly defined, and whether there were clear events or conditions that triggered or terminated the surcharges. The FMC suggested enforcement action may occur if tariffs are improperly established. Shipping customers are also imploring the FMC to investigate shipping practices. On July 28, 2021, MCS Industries, a Pennsylvania-based home furnishings manufacturer, filed an administrative proceeding against COSCO and MSC, alleging that the carriers had violated provisions of the Shipping Act and refused to honor their service contracts, calling for the FMC to conduct an investigation of these companies’ shipping practices. COSCO and MSC have denied the allegations and noted, among other things, that MCS’s complaint should be heard in the fora specified in its respective service contracts with the carriers. An administrative law judge was appointed to hear the matter, the outcome of which should be closely watched by industry participants. DOJ Antitrust Landscape DOJ’s coordinated efforts with the FMC have implications for the shipping industry as DOJ antitrust prosecutions have been both expansive and punitive. DOJ’s jurisdiction includes foreign business activities that have a “substantial and intended effect in the U.S.” That broad reach has impacted numerous companies throughout the world in various industries ranging from auto parts to air cargo. Companies in such industries have paid millions of dollars in penalties and many of their employees have been imprisoned. The shipping industry has not been spared. In a long-running investigation, a Norwegian shipping company and its executives were indicted for their participation in an antitrust conspiracy focused on the allocation of customers and routes, rigging bids, and fixing prices for the sale of international ocean shipments of roll-on, roll-off cargo to and from the United States. The company pled guilty and was sentenced to pay a $21 million fine; four individuals have already been sentenced to serve prison terms. Four other companies also pled guilty for their roles in the conspiracy, leading to the assessment of more than $255 million in criminal fines.

#### BUT the Shipping Act creates immunity for vessel-sharing agreements

UNCTAD 18, UN Conference on Trade and Development – Report of Intergovernmental Group of Experts on Competition Law and Policy, (Challenges faced by developing countries in competition and regulation in the maritime transport sector, https://unctad.org/system/files/official-document/ciclpd49\_en.pdf

The Federal Maritime Commission [FMC] is the independent regulatory agency responsible for the regulation of seaborne transportation in the foreign commerce of the United States for the benefit of United States exporters, importers and the United States consumer. 25 Its mission is to ensure competitive and efficient maritime transportation services for shippers, by monitoring agreements among carriers and service contracts with regard to their effects on prices and services. The amendment of the Shipping Act (1916) in 1961 established the Commission and gave it the power to disapprove agreements between liner shipping carriers that were not in the public interest. In this regard, a violation of antitrust laws would be considered against the public interest. The Shipping Act (1984) removed both the public interest clause and the requirement for approval by the Commission for agreements between liner shipping carriers. Vessel-sharing agreements and other cooperative agreements are also permitted under the Act. 23. The United States has a statutory antitrust exemption for liner conferences. The Shipping Act, as amended by the Ocean Shipping Reform Act (1998), provides an alternative competition enforcement regime and includes limited antitrust immunity for agreements between liner shipping carriers from competition law. The Act introduced reforms that ended the authority of liner conferences to regulate the service contracts of members. In addition, the Act allows conference members to negotiate independent confidential service contracts with shippers and prohibits other members from retaliating against shippers or carriers that do so. Prior to the Act, such contracts had to be made public, potentially reducing the incentive for participants to enter into them. The annual report of the Commission in 2014 stated as follows: “Conference or price-fixing agreements have become largely irrelevant to United States liner shipping. No new carrier conference agreements have been filed with [the Commission] since fiscal year 2000. The remaining three conferences cover only government cargoes.” 26 All conduct that does not fulfil antitrust exemption requirements is subject to competition law and investigated by the Department of Justice if it involves cartel-like practices, including price fixing, bid rigging and market allocation.

#### That allows for the continuous acquisition of larger and larger megaships

O’Connor 14, Cozen O'Connor Law Firm, (A New Era For Vessel Sharing Agreements – FMC Allows P3 and G6 Alliances To Go into Effect https://www.jdsupra.com/legalnews/a-new-era-for-vessel-sharing-agreements-23682/)

Perhaps the first true vessel sharing agreement was called, appropriately enough, The Vessel Sharing Agreement (which led to use of the term “VSA” to describe such arrangements) among Sea-Land Service, Inc., Nedlloyd Lijnen, B.V., and P&O Containers, Ltd. This agreement was intended to maximize the utilization of the then very large and fuel efficient containerships (the so-called Econships) that Sea-Land had acquired from the estate of the bankrupt U.S. Lines. The P3 and G6 agreements have a similar purpose — maximizing utilization of large, efficient vessels as a means to reduce carrier costs. In other words, some of the basic reasons lines enter into VSAs have remained unchanged over the years. The use of space charter and vessel sharing agreements increased through the late 1980s and early 1990s, although the vast majority of these agreements were (like the original VSA) often focused on a single trade lane. During this period, relatively few lines were considered “global” carriers and those that were often offered service through a combination of stand-alone strings that did not involve partners, trade-specific vessel sharing agreements, and space charter arrangements. As world trade increased and the phenomenon of globalization emerged, carriers sought to meet the transportation needs of their increasingly global customer base. Hence, carriers moved to geographically broader cooperations that the FMC labeled “global alliances,” most notably The Grand Alliance, The New World Alliance, and the CKYH alliance. These agreements, although not truly global, were often broader in geographic scope and involved a more integrated, long-term cooperation than many of their predecessors. However, the objective was still the same: to provide a service superior to that which could be offered alone while reducing operational costs and capital risks. In many respects, the P3 and G6 agreements represent the next logical step in the evolution of carrier agreements: geographically broader, more operationally integrated, long-term vessel sharing arrangements that come closer to being truly global. As in the past, these arrangements help carriers hedge against the risk of the investment required to build the large, fuel-efficient ships necessary to provide service at a competitive cost. They also allow improved utilization, a key to achieving cost savings. The difference between these agreements and past VSAs is primarily one of degree rather than kind — the cost advantage offered by new tonnage is necessary to remain competitive, but the size and cost of new ships has reached the point where it may no longer be feasible for carriers to operate outside an alliance that helps reduce the risk of such an investment to the point that it is acceptable. Indeed, some are questioning whether it is possible for a line to remain competitive on a global scale following a 1990s model of offering a patchwork of stand-alone and cooperative services rather than being a member of a global alliance.

#### The size of those megaships are about to explode, drastically shaking up the entire industry

Fickling 21, Reporter for The Print. (David, March 30, 2021, Get ready for future, giant next-gen cargo vessels will make ‘Ever Given’ look like bath toy, <https://theprint.in/opinion/get-ready-for-future-giant-next-gen-cargo-vessels-will-make-ever-given-look-like-bath-toy/630839/>)

If you think the ultimate reason the Suez Canal got blocked last week is because container ships are getting too big, get ready for the future. The next few generations of cargo vessels are going to make the Ever Given look like a bath toy. Big enough to carry 20,124 twenty-foot equivalent units, or TEUs — the standard measure for cargo, representing a single shipping container — the Ever Given was one of the world’s largest such vessels when it was launched in 2018. The first container ship to break the 20,000 TEU mark had been at sea for less than a year. One famed 1999 study, written at a time when the largest boats carried less than 8,000 TEUs, argued it would prove impossible to build craft bigger than 18,000 TEUs. The Ever Given, finally floating on its way again, is now distinctly in the second class of mega freighters. There are nearly 100 ships carrying more than 20,000 TEUs on the seas or under construction, and the bigger vessels being assembled in Chinese and South Korean shipyards are mostly around the 24,000 TEU mark. A quarter of the capacity moved by the world’s largest container line, AP Moller-Maersk A/S, is on boats above the 17,500 TEU mark. That’s unlikely to be the end of it. Chinese shipyard Hudong-Zhonghua Shipbuilding Group Co. has already registered designs for a 25,000 TEU vessel, and it has become relatively commonplace to predict that 30,000 TEU monsters will be plowing the oceans before the decade is out. Such enormous hulls may cause problems that will put the Ever Given’s mishap into the shade. At Rotterdam, the largest ships already have to arrive at high tide to ensure there’s enough clearance for them to get through the channel, according to a 2019 study by Nam Kyu Park of South Korea’s Tongmyong University. Larger vessels will soon be unable to berth at Shanghai, Busan and Hong Kong even at high tide, unless channels are dredged out further, Park wrote. There are similar problems with infrastructure on dry land. Modern ports are astonishingly efficient at unloading, and can turn around a fully laden 20,000 TEU vessel in a couple of days. But the time spent waiting for a berth can cut deep into the wafer-thin economics of a container line. Longer quays may have to be built to accommodate the larger ships, as well as cranes that can reach across wider decks, larger loading yards for tens of thousands of containers, and faster rail and road terminals to take cargo to its next destination. Current vessels are already at the limits of what can fit along major shipping lanes. The Ever Given is too bulky to squeeze through the Panama Canal, where boats must be lifted over its mountainous spine with massive lock gates. At 24 meters (79 feet) deep, the Suez Canal has more capacity — but it’s roughly as deep as the Straits of Malacca and Singapore, so dredging it further to accommodate bigger ships won’t help much. The binding constraint on East-West trade at this point isn’t engineering, but geology. Extending 15.7 meters below the water line, the Ever Given shouldn’t, on paper, have trouble making it through any of those channels, which typically require 3.5 meters of clearance from the bottom. Next-generation ships with a 20-meter draught, on the other hand, would be at constant risk of grounding. How have container ships managed to defy expectations that their size would hit fundamental limits? A large part of it is because the economies of scale are so compelling. Bigger vessels use more fuel, but relative to the number of boxes stacked on their decks they’re far more efficient. They can also turn around a larger number of containers at a time and serve a wider array of feeder ports, ensuring they can defray their massive capital costs quicker. There’s little sign that this is about to change. New International Maritime Organization regulations against the burning of sulfur-intensive fuel oil introduced last year mean current ships are using costlier diesel, putting more pressure on naval architects to come up with yet more efficient designs. Beyond that, the IMO now has plans to reduce carbon dioxide emissions by 40% in 2030 compared with 2008, and by 70% by 2050. Even with a switch to cheaper, less polluting liquefied natural gas as the main fuel, that’s going to mean further drastic improvements in efficiency, not to mention propulsion technologies that don’t exist yet. To date, the best way to chip away at fuel consumption and emissions is by increasing size. It’s hard to know how the industry is going to cope with this. Perhaps Suez, Malacca and Singapore can be dredged to accommodate even bigger vessels. Perhaps shipyards will find ways to squeeze a few more inches out of existing channels. If not, alternative routes around the Cape of Good Hope and through the deeper Straits of Sunda and Lombok between Indonesia’s islands may prove the only viable way to accommodate such massive boats. Should that happen, those economies of scale will have to be drastically larger to make up for the longer sailing time. We’ve seen container ships leap from 10,000 TEUs to 24,000 TEUs. Don’t be shocked to see 50,000 TEU vessels plying the sea in your lifetime.

#### Those ships are inherently anticompetitive

Veitch 16, Head of Policy for the Global Shipping Foundation, (Alex, Nov 2016, Report by Global Shipping Foundation, “The Implications of Mega-Ships and Alliances for Competition and Total Supply Chain Efficiency: An Economic Perspective”, <https://paperzz.com/doc/9427398/the-implications-of-mega-ships-and-alliances-for-competit>...)

The container shipping Market is undergoing considerable change. The development of the mega ship has had a profound impact. They have led to the creation of new strategic Global alliances and quickened the pace of consolidation in the industry. This paper analyzes the impacts for shippers, the customers of container ship operators, and in particular the Wider supply chain implications of Mega ships and the potential impact on competition between competitors and their shipper customers. This paper comes in two parts: the first provides an economic assessment of megaships, alliances and consolidation of the container ship industry; the second part, in the form of an Annex (Annex 1) takes a competition policy analysis of megaships, strategic alliances in the impacts of consolidation in the industry. the paper draws on various detailed studies and sources, including the recent Organization for Economic Cooperation and Development (OECD) International Transport Forum report on Mega ships and the oecd competition committee report on competition issues in liner shipping , but it also provides its own independent economic and competition assessments. The following key findings, conclusions, and recommendations for carriers, regulators and competition authorities, and shippers are summarized below. Economic Issues: Mega ships and the associated commercial practices of strategic alliances and mergers are driving consolidation in the container shipping sector. This is harmful to shippers because megaships and strategic alliances reduce supply chain efficiency and rivalry unimportant parameters of competition, including capacity, sailing frequency, de transit times, ports of call and Associated service quality. The higher economies of scale associated with megaships mean that fewer ships can operate in a market of a given size. Higher barriers-to-entry are likely to reinforce the trend towards fewer independent operators, with smaller operators being driven out of the major trades into niche markets faced with a trend towards consolidation and cooperation due to Mega vessels. It is unlikely competition problems associated with consolidation and megaships will be solved by new entrance into liner shipping. The report asks whether the time is right to question the received wisdom that shipping alliances and Consortium are preferable to consolidation between carriers because Shipping Lines operating common capacity cannot compete amongst themselves with regards to the Consortium has agreed capacity, sailing frequency, transit times, ports of call and Associated service quality.

#### There are three scenarios —

#### The first scenario is Accidents —

#### Megaships drastically increase harms to the Arctic

Baker & Harris 16, Chairman of Marsh Marine Practice, and, Senior Vice. (Marcus & Stephen, Marsh Report: "PLUMBING THE DEPTHS" OF MEGASHIP SUPER-SIZED RISK, In Navigating a Shifting Risk Landscape Expert Perspectives on the Marine Industry, file:///C:/Users/sharris/Downloads/Navigating%20a%20Shifting%20Risk%20Landscape%20Expert%20Perspectives%20on%20the%20Marine%20Industry.pdf)

Navigation routes, such as those leading to or from the Panama Canal, have been the same for many years, with commercial cargo vessels following tried-and-tested pathways through the sea; however, the known safe depth for the navigation of many is only as much as the draught of the largest, deepest vessel ever to have used it. An extra four meters of depth that the newest megaships can draw could be the vital difference between uneventful navigation and a serious grounding or stranding, with all the perils of ship damage, crew endangerment, cargo loss and marine pollution that could result. As container ships are the largest users of both the Suez and Panama Canal systems, these are the vessels that, having the ability and commercial reasons to navigate new parts of the world’s oceans, are of most concern. Governments seeking to have large vessels use their ports and terminals will often be the first to blame the shipping industry when a serious grounding or stranding accident occurs in their waters. But how much of that blame should actually lay at a government’s own doorstep, when it comes to ensuring hydrographic surveys meet modern standards (and, where necessary, the funding to do so), especially when it is known that increasingly larger vessels will be using their waters? Let us not forget that the attempted—and ultimately unsuccessful—salvage of the MV Rena after it grounded on Astrolabe Reef in New Zealand in October 2011 resulted in one of the largest-ever protection and indemnity losses to the market. And the MV Rena was a very small container ship in comparison to the modern generation. Many vessel operators have been viewing, with great interest, the increasingly viable Arctic routes between Asia and Europe as an alternative to the much longer (both in time and distance) routes via Singapore and the Suez Canal; however, the vessels that have, to date, successfully transited the Northern Sea Route (NSR) around northern Russia have been relatively small in size. Marsh has already voiced concerns about the potential risks of larger vessels using this route with greater frequency, but the knowledge that so few of the waters have been adequately surveyed for depth to modern standards adds to those concerns. In addition, there is increasing talk of commercial use of the Northwest Passage (NWP) around northern Alaska and through the many islands of northern Canada, which still poses considerable risk, as some of the waters are even less bathymetrically assured than parts of the NSR. Only a handful of commercial vessels have ever successfully transited the NWP, yet some operators are already heralding those few successes to prove the NWP to be a major route for the future. The lack of hydrographic data for that whole region should remain a major concern for any sensible operator, echoed by similar warnings in the new Polar Code.

#### They make accidents inevitable

Waterson 19, Senior Vice President - Marine Hull and Liability for Lockton Companies LLP World’s Largest Insurance Broker. (Robert, Re-evaluating the risk of mega ships, https://www.locktoninternational.com/gb/articles/re-evaluating-risk-mega-ships)

“A consolidation process in the shipping transport market has contributed to a trend towards fewer but bigger ships,” says Robert Waterson, Senior Vice President - Marine Hull and Liability at Lockton. “Fleet operators have ordered larger ships and because they are newer this tends to have a positive effect on all costs including insurance premium levels. However, this does not necessarily mean claims volumes will be lower,” Waterson notes. With larger and more sophisticated vessels entering the sector – and more hazardous areas such as polar waters being explored – this is aggravating the risk of ever larger single losses, insurer AGCS warned in its “Marine claims trends 2018” report. “A major incident involving a fully loaded ultra-large container ship will easily result in a $1bn to $2bn insurance claim including damage to cargo, hull, salvage and wreck removal costs,” the report added. A number of container ship casualties recently fuelled a discussion about the growing risks associated with fires on mega-containerships. Ship fires are one of the major loss drivers in the shipping industry: In March 2018 a fatal fire on the new 15,252 TEU Maersk Honam. The incident is believed to have been triggered by mis-declared chemical cargoes causing a blast and fire which resulted in 130 people being taken to hospital. “The cargo description is often not clear and containers may contain chemicals and hazardous goods that were not supposed to be there or that were incorrectly described and thus loaded in the wrong part of the vessel,” says Waterson. Insurers’ apprehension focuses not only on large container ships but also on large passenger vessels, especially after Costa Concordia off the Tuscan holiday island of Giglio in Italy set off a chaotic evacuation of 4,229 passengers and crew, and 32 people died, according to the May 7, 2019 presentation “Megaship Challenges: The P&I Perspective” by Joe Hughes from the The American Club. Large vessels are more difficult to navigate, and grounding and/or collisions are harder to deal with as there is more cargo and fuel to salvage. Where salvage/wreck removal is required, the costs are vastly influenced by the type of cargo that has to be removed and how hazardous this cargo is. Very often this has to be accomplished in remote and difficult environmental conditions, and always within the requirements of both the local and international law. As environmental regulations tighten globally, these costs will only rise further and more cover will be required. A discussion in the insurance industry about whether large container ships might require a specific insurance rating, previously under consideration but not implemented, may now re-open as more data is available. As some underwriters withdraw from underwriting large container fleets this may affect renewals pricing and available capacity in the short term. “In hull and cargo, the specific risks attached to large ships are not being addressed. Ratings do not take this into account,” Waterson says. “Mega-ships carry higher risks and are not necessarily safer. While the claims frequency may fall, the size of a loss is likely to be much higher,” he notes.

#### They independently increase drastic amounts of pollution in the Arctic AND risk massive oil spills

Shavley 21, Reporter for Business Insider. (Kevin, May 1, 2021, The Ever Given crisis put mega ships under the spotlight. As vessels get bigger and more automated, a long-serving captain and other experts are weighing up the risks., <https://www.businessinsider.com/ever-given-suez-canal-blockage-mega-ships-sea-captain-2021-4>)

Shipping vessels have grown larger by multiples in just a few years, adding to worries among some industry insiders that a single mistake made by a massive ship could cause a global supply chain disruption, as the world saw with the Ever Given. That ship, which was stuck in the Suez Canal for about a week in March, slowed or stalled shipping traffic around the world. It was estimated to cost the global economy about $400 million per hour, and its effects have still been rippling through the economy in recent weeks. As ships like the Ever Given have grown over the last few decades, their crews have been shrinking because they're using more automated processes, said Captain Rahul Khanna, global head of marine risk consulting at Allianz Global Corporate & Specialty, whose team publishes an annual safety review. "Decades ago, the ships with 3,000 TEU — that's the number of twenty-foot containers that can fit onboard — were considered the big ones," said Khanna. Now, ships like the Ever Given carry maximum loads of more than 20,000 containers. Boat-building technology could in the years and decades ahead produce ever-larger ships, perhaps growing to 50,000 containers or more. If there's demand for such ships, modern technology could allow for such builds, Khanna said. Between 2006 and 2020, the largest shipping vessels in the world grew by 155%, according to a January report from the United Nations Conference on Trade and Development. The biggest ships are loading or unloading 125% more at each port they visit. With bigger boats, there could be more impactful accidents. "While seemingly efficient, they are too large to fit in some ports, increase dangers in storms, and highly piled containers are falling, causing product and the corresponding financial losses," said Cheryl Druehl, associate professor of operations management at George Mason University. Even the Ever Given debacle, which grabbed hold of the worldwide news cycle, could have been worse. If that ship's hull had broken, say, it would have taken even longer to fix the issue, Khanna said. It's likely that a crane would have had to have been constructed nearby to remove some or all of its load. Refloating it would have been a more complex task, likely stretching into months. As the shipping industry gets back to its normal routine, Khanna and other shipping industry insiders walked Insider through their concerns about the next big disaster. The most obvious answer was that another ship could get stuck in the Suez or Panama canals. The risk of a situation similar to the Ever Given's crash in one of those waterways was "unlikely but high impact," said Ambrose Conroy, founder and CEO of Seraph, a consulting and turnaround firm. The risk was lower at other heavily travelled shipping lanes, including the Singapore Strait, and the Strait of Hormuz, although it has geopolitical risks of its own, said Khanna. Ports in the future may also have trouble handling larger ships, but that's an issue that can be fixed with proper planning, Conroy said. Instead, it's the "black swan events" like the Ever Given that the industry needs to look out for. One concern is a shipping route that's becoming more popular. In decades past, a lane through the Arctic would open in summer months, giving ships a more direct path between Europe and Russia. As the climate crisis has reduced the amount of ice in those northern regions, that passageway is now increasingly being used in the winter. It's become so popular that the International Maritime Organization issued a revised Polar Code. As the Ever Given stalled global shipping in March, Moscow officials pointed to the Northern Sea Route through the Arctic as an alternative. But Arctic travel comes with its own risks. While it's unlikely that modern ships, with all their technology, would hit an iceberg, smaller ice floats can still damage hulls, Khanna said. An oil spill in the Arctic would also be devastating to marine life. And rescue crews might have difficulty reaching a stranded ship in such inhospitable waters.

#### That risks global species and ecosystem destruction

Tewari 17, IIASA Science Communication Fellow. (Parul Aug 16, 2017, What would an oil spill mean for the Arctic?, https://blog.iiasa.ac.at/2017/08/16/what-would-an-oil-spill-mean-for-the-arctic/)

While it can never be good news, an oil spill in the Arctic could be particularly dangerous because of its sensitive ecosystem and harsh climatic conditions, which make a cleanup next to impossible. With an increase in maritime traffic and an interest in the untapped petroleum reserves of the Arctic, the likelihood of an oil spill increases significantly. Maisa Nevalainen, as part of the 2017 Young Scientists Summer Program (YSSP), is working to assess the extent of the risk posed by oil spills in the Arctic marine areas. “That the Arctic is perhaps the last place on the planet which hasn’t yet been destroyed or changed drastically due to human activity, should be reason enough to tread with utmost caution,” says Nevalainen Although the controversial 1989 Exxon Valdez spill in Prince William Sound was quite close to the Arctic Circle, so far no major spills have occurred in the region. However, that also means that there is no data and little to no understanding of the uncertainties related to such accidents in the region. For instance, one of the significant impacts of an oil spill would be on the varied marine species living in the region, likely with consequences carrying far in to the future. Because of the cold and ice, oil decomposes very slowly in the region, so an accident involving oil spill would mean that the oil could remain in the ice for decades to come. Yet, researchers don’t know how vulnerable Arctic species would be to a spill, and which species would be affected more than others. Nevalainen, as part of her study at IIASA will come up with an index-based approach for estimating the vulnerability (an animal’s probability of coming into contact with oil) and sensitivity (probability of dying because of oiling) of key Arctic functional groups of similar species in the face of an oil spill. “The way a species uses ice will affect what will happen to them if an oil spill were to happen,” says Nevalainen. Moreover, oil tends to concentrate in the openings in ice and this is where many species like to live, she adds. During the summer season, some islands in the region become breeding grounds for birds and other marine species both from within the Arctic and those that travel thousands of miles from other parts of the world. If these species or their young are exposed to an oil spill, then it could not only result in large-scale deaths but also affect the reproductive capabilities of those that survive. This could translate in to a sizeable impact on the world population of the affected species. Polar bears, for example, have, on an average two cubs every three years. This is a very low fertility rate – so, even if one polar bear is killed, the loss can be significant for the total population. Fish on the other hand are very efficient and lay eggs year round. Even if all their eggs at a particular time were destroyed, it would most likely not affect their overall population. However, if their breeding ground is destroyed then it can have a major impact on the total population depending on their ability and willingness to relocate to a new area to lay eggs, explains Nevalainen. Due to lack of sufficient data on the number of species in the region as well as that on migratory population, it is difficult to predict future scenarios in case of an accident, she adds. “Depending on the extent of the spill and the ecosystem in the nearing areas, a spill can lead to anything from an unfortunate incident to a terrible disaster,” says Nevalainen. It might even affect the food chain, at a local or global level. “If oil sinks to the seafloor, some species run the risk of dying or migrating due to destroyed habitat – an example being walruses as they merely dive to get food from the sea floor,” adds Nevalainen. As the walrus is a key species in the food web, this has a high probability of upsetting the food chain. When the final results of her study come through, Nevalainen aims to compare different regions of the Arctic and the probability of damage in these areas, as well as potential solutions to protect the ecosystem. This would include several factors. One of them could be breeding patterns – spring, for instance, is when certain areas need to be cordoned off for shipping activities, as most animals breed during this time. “At the moment there are no mechanisms to deal with an oil spill in the Arctics. I hope that it never happens. The Arctic ecosystem is very delicate and it won’t take too much to disturb it, and the consequences can be huge, globally,” warns Nevalainen.

#### Extinction

Petersen et al 4, Director @ Icelandic Institute of Natural History (Aevar, “Circumpolar Biodiversity Monitoring Program,” CAFF, http://library.arcticportal.org/309/1/CircumpolarBiodiversityFramework.pdf )

The circumpolar Arctic region, as defined for the purpose of CAFF at its inaugural meeting (see Figure 1 - CAFF map of the Arctic), covers some 14.8 million km of land and 13 million km of ocean. It plays a key role in the physical, chemical and biological balance of the globe. The Arctic region encompasses relatively pristine environments, compared to the rest of the globe. Vast wilderness areas are crucial for the preservation of the Arctic’s unique biological diversity, and the Arctic is additionally of much cultural, economic, and recreational value. The CAFF overview report (2001) highlighted such diverse actual and potential importance of Arctic biodiversity as for fuel, food (e.g. fisheries), fodder, nature tourism, ecosystem functioning, feedbacks f rom ecos y s tems to the global atmosphere, future genetic recombinations and adaptations, fiber pharmaceuticals, anti-microbial drugs and industrial enzymes (from extremophiles). The Arctic is unique in biological, physical, and chemical properties. Life in the Arctic has adapted to extreme conditions of darkness, cold and a brief summer season where food becomes plentiful. Arctic ecology is shaped by the severity of the climate and its variability in space and time. Arctic species must survive long periods when food is limited or unavailable, or otherwise migrate to more southerly latitudes, as many do to all corners of the globe. Arctic species must be adapted to respond quickly when conditions improve. The growing season is brief and intense. When sunlight reaches the oceans in the spring, plankton bloom. On land, the growth of plants begins the summer feast for the terrestrial species, allowing the breeding, raising of young, and storage for the upcoming winter. At the foundation of the intricate marine food webs are highly specialized species of phytoplankton and sea ice algae, especially adapted to the extreme conditions of darkness and cold, and the freshwater-brine conditions of the sea iceocean interface. Terrestrial and freshwater food webs are usually simpler than those in the marine environment, but are closely linked to the marine ecosystem, e.g. through run-off and many creatures which move between the different ecosystems. The complexity of Arctic biodiversity stems in part from the interplay between the terrestrial species, habitats and ecosystems, with those in the marine environment. In the overlapping structure of ecosystems, all species in a system depend to some degree on the ecological functions of other species such as good production, competition, and predation; and species behavior such as reproduction and migration are closely linked with these functions. With an integrated, ecosystem-based approach to monitoring, the impacts of stressors to these ecological functions are better identified and understood, as this type of monitoring bridges ecosystems, habitats and species. For example: seabirds nest on land but may feed in the ocean or in lakes and rivers on fish and invertebrates. Salmon, Arctic Char and certain other fish species are anadromous – crossing from the marine ecosystem to the freshwater ecosystem to breed. Polar bears den on land in snow banks, but hunt almost exclusively out on the edge of the sea ice. Seals make their homes in and on the sea ice and hunt in the ocean. Indigenous Peoples hunt across all ecosystems and habitats in the Arctic, marine, terrestrial and freshwater. Monitoring of the natural and anthropogenic impacts to the food webs and the ecological func t ions of the Arc t i c env i ronment and ecosystems provides critical information about the status and trends of Arctic species and the integrity of the food webs on which they depend for their survival. For humans, this directly relates to the socio-economic stability of their societies. The Arctic has high genetic diversity among its species. Many migratory species breed in the Arctic but spend the non-breeding season at more southerly latitudes. As a polar region, greater and faster impacts are being seen in the Arctic from climate change. Consequently Arctic biodiversity is experiencing both greater and earlier impacts than many other parts of the globe. These issues, vulnerabilities and impacts are more fully documented in Arctic Flora and Fauna: Status and Conservation (2001), and Impacts of a Warming Arctic: Arctic Climate Impact Assessment (2004). Of the approximately 450 species of birds, which breed or have bred in the Arctic region, 279 breed in significant numbers within the Arctic and spend the boreal (northern hemisphere) winter in significant numbers outside the CAFF member states. Migratory birds from the Arctic reach every part of the world except the interior of Antarctica. Thirty species reach southern Africa, 26 species reach Australia and New Zealand, 22 species reach southern South America and several pelagic species reach the southern oceans. Virtually all the world’s major ecosystems support some Arctic breeding birds during the boreal winter, with Arctic migrants occupying every major habi tat in ever y major region. The c o n s e r v a t i o n o f a l l A rc t i c b re e d i n g b i rd s throughout their migratory ranges is a global challenge, covering virtually all of the world’s major terrestrial and marine ecosystems, and requires a high level of international cooperation which can be achieved in part through the CBMP. In addition to the migrating birds, several species of land and marine mammals migrate to the Arctic in search of rich food resources. Migration routes link Arctic species to marine and terrestrial ecosystems throughout the world including the Antarctic. The Arctic’s nutrient-rich coldwater feeding grounds are crucial to the survival of many species of whales and are the foundation for the huge numbers of Arctic fish stocks. Northern waters, particularly the North Atlantic and the Bering Sea, are some of the world’s largest and most important marine fisheries. The link between the survival of humans and sustainability of the living environment is therefore obvious and of paramount importance.

#### Independently, megaships decimate phytoplankton populations

Xue et al 21, State Key Laboratory of Estuarine and Coastal Research, School of Marine Sciences, East China Normal University, (Chengfang, with Yang Yang, Peipei Zhao, Dongyun Wei, Jianhua Gao, Peng Sun, Zhiyang Huang and Jianjun Jia, Impact of Ship Traffic on the Characteristics of Shelf Sediments: An Anthropocene Prospective, https://www.frontiersin.org/articles/10.3389/fmars.2021.678845/full)

Marine vessels are undoubtedly one of the most prominent symbols of human activities in the ocean. Large ships cause significant disturbances in sediment dynamic processes mainly in three ways: (i) the jet flow generated by ships’ propellers causes resuspension of sediment on the bed of shipping lanes (Soon and Lam, 2014; Hong et al., 2016); (ii) the propagation of ship-induced waves may cause erosion of the channel slope and shoal (Rapaglia et al., 2011); and (iii) prolonged and frequent ship shuttle services enhance seabed sediment activity and increase the thickness of the active layer (Hong et al., 2013). Consequently, suspended sediment concentration increases significantly during ship navigation, and can be 30 times higher than the average background concentration (Rapaglia et al., 2011). More than that, turbid water affects the growth of phytoplankton, which in turn affects marine productivity (Huang et al., 1986; Pan and Shen, 2009). Compared to known ship-related hydrodynamics (e.g., propeller-jet, ship wave, ship wakes, etc.), little is known about the impact of ship traffic on marine sedimentation records (e.g., the characteristics of shelf sediments), largely due to the scarcity of studies dedicated to this field. Considering that maritime transport is responsible for 80% of the total volume of international trade (Notteboom et al., 2021), this rising anthropogenic-force induced sedimentary process deserves more attention, and research related to this will be important for marine biogeochemistry, sedimentary dynamics, and geomorphology. Over the past 70 years, China’s maritime transport has experienced explosive growth. Shanghai Port and Ningbo-Zhoushan Port have become the world’s leading ports in terms of container and cargo throughput. Due to these two ports, the coastal shipping lanes along Zhejiang Province are particularly busy. This area represents an ideal place to analyze the effects of seagoing traffic on the shelf sedimentary record. In this study, a shipping lane suitable for 5,000 ∼ 50,000 tons ships along the Zhejiang coast of the East China Sea was selected as the study site, and two short sediment cores were collected from the centerline and the periphery of the lane to analyze their ages and sediment characteristics. We use an improved 210Pb dating model to establish a more accurate depth-age framework in regions with frequent ship disturbance. In combination with development of China’s offshore shipping lanes, we explore the possible linkage between ship traffic and the changes in sedimentation. Study Area The booming development of China’s coastal and ocean-going shipping began in the late 20th century, with coastal transport accounting for 60% of the total domestic transport [China Port Yearbook (1999–2019)]. After decades of development, Shanghai Port and Ningbo-Zhoushan Port have become the world’s leading ports in terms of container and cargo throughput. The coastal shipping lanes along Zhejiang Province are particularly busy due to these two ports and the coastal shipping lanes intersect. The north–south lanes throughout the East China Sea include four main lanes: the Outer Shipping Lane, the Eastern Shipping Lane, the Middle Shipping Lane, and the Western Shipping Lane (Figure 1). The eastern and western shipping lanes intersect outside Aiwan Bay, where shipping is well-developed and traffic is frequent in the north–south direction. The lanes can allow ships of 5,000- to 50,000-ton to pass through, even up to 100,000 tons on some sections. This area is close to the Wenzhou Port, where many passenger ship lanes lead to the surrounding islands (He, 2008). Therefore, it is an ideal area to study about the disturbance caused by ships. The tides are regular semidiurnal tides with an average tidal range of 4 m, and the maximum can be 7 m. The wave height is approximately 1 m. During typhoons, the wave height is up to 5 m, and the maximum can reach 10 m (China Gulf Annals, 1993). The bottom sediment is clayey silt and silt (Jia et al., 2018). Materials and Methods We obtained two cores off the coast of Aiwan Bay, Zhejiang Province, China, to analyze grain size and geochemical elements. Combined with the dating framework, we analyzed the changes in sediment characteristics over time. A literature review was conducted to understand the history of the marine transport industry and the shipping lanes where the cores have been located over the past decades, with a view to quantify the sedimentation effects of ship disturbance. Coring Two cores were collected in May 2018 using a gravity coring tube. Core Z7 (28°3′0″N, 121°33′36″E), 1.5 m long with a water depth of 13.2 m, was collected at the intersection of two main shipping lanes used by vessels of 5,000- to 50,000-ton. Core Z8 (28°5′21″N, 121°32′36″E), 1.5 m long with a water depth of 12 m, was collected outside the shipping lane at a distance of 4.7 km from core Z7 in the northwestern direction. The natural sedimentary environments in the region of two cores are nearly identical because of the short distance between the two cores, which will better ensure an accurate representation of the effects of disturbance on the sediment due to maritime traffic through contrast analysis. XRF Core Scan The cores were each split into two parts using a GeoTek Core Splitter. One half of the core was covered with a 4 μm thick Ultralene film to avoid the contamination of the X-ray fluorescence (XRF) core scanner (Avaatech 3RD, Netherlands) measurement unit and the desiccation of the sediment (Richter et al., 2006). Instrument settings were optimized to minimize the mean square error (MSE) values, and the step size was 0.5 cm. Count times for XRF analysis ranged from 10 to 30 s (Table 1). Reliable data were obtained for 29 elements. Four powdered standards were analyzed every day before and after the analysis of the sediment cores to monitor signal drift and indicated that the signal remained stable during the analytical runs. The experiment was completed at the State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen. Grain Size Analysis Grain size analysis of 1 cm sub-samples was conducted using a laser particle analyzer (Mastersizer-2000, United Kingdom), which has a measurement range of 0.02–2000 μm with a relative error of <3% for repeated measurements. The experiment was completed at the Key Laboratory of Coastal and Island Development, Nanjing University, Nanjing. The matrix formula of McManus (1988) was used to calculate the sample statistics of the grain size distribution, that is, mean grain size (Mz), sorting (S), skewness (Sk), and kurtosis (K). The above four parameters refer to: the average size, the spread of the sizes around the average, the symmetry or preferential spread to one side of the average, and the degree of concentration of the grains relative to the average, respectively (Blott and Pye, 2001). The grain size standard deviation at 10 cm intervals was calculated to extract the sensitive grain size fraction (Sun et al., 2003). The changes in the sensitive grain size fraction over time can reflect the evolution of sedimentary dynamic processes and depositional environments. Age Models Age models are of critical importance in interpreting sedimentary records. One of the most important means for dating recent sediments (0–150 years) is by 210Pb (half-life 22.3 years), a natural radioactive isotope of lead (Appleby, 2001). The dried sample was homogeneously pulverized, weighed, and then sealed in a plastic box (70 × 70 mm) for 3 weeks. The activities of 210Pbex and 137Cs in the sediment samples were measured following the method described by Du et al. (2010). The radioactivities of the above nuclides were measured using an HPGe γ-ray detector (Canberra Be3830, United States) with a relative counting efficiency of 35% and an energy resolution of 1.8 keV (at 1332 keV). The detector has multilayer shielding (ultralow cryostat and no peak background in the isotopes of interest). The activity of 210Pbex was calculated from the activity of total 210Pb (46.5 keV, 4.25%) minus the activity of 226Ra, determined using the γ lines at 351.9 keV (37.6%) for 214Pb and 609.3 keV (46.1%) for 214Bi. The efficiency calibration of the detector systems was conducted using LabSOCS (Baronson, 2003). The experiments were performed at the State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai. The commonly used 210Pb data processing and computation mainly include the CIC dating mode and the CRS dating model (Appleby, 2001). Given the strengths and weaknesses of the two computational models, the 210Pb chronology of this study was determined using both models. Historical Documents To study the response of sediment characteristics to the disturbance effects of ships, it is necessary to be familiar with the shipping lanes near the study area and the frequency of ship navigation. Compared to bulk cargo ships, container ships have the characteristics of large loading capacity, fast speed, and fixed throughput, which are more representative indicators to better reflect the impacts of ship disturbance on sedimentation. The China Port Yearbook comprehensively and accurately recorded the development of China’s port navigation and shipping industry, and recorded the container throughput of China’s coastal ports from 1979 to date, which could reflect the intensity of disturbance by ship movement on the shipping lanes. Therefore, the container throughput of the whole country and three ports, namely Qingdao Port, Shanghai Port, and Guangzhou Port, were calculated for the period 1979–2018. These three ports are important coastal ports in the Yellow Sea, East China Sea, and South China Sea, respectively. Results Depth-Age Framework The excess 210Pb of Z7 and Z8 remained in the law of radioactive decay. The linear fitting result of the excess 210Pb of Z7 was good, with a correlation coefficient of 0.66 by the CIC model and a sedimentation rate of 1.09 cm/yr. The Z8 was better, with a correlation coefficient of 0.91 and a sedimentation rate of 1.54 cm/yr (Figure 2). Considering that the locations of the two cores were not far from each other, approximately 4 km—expecting a great difference in sedimentation rate would be unreasonable. According to sedimentation rate data of the mud area along the coast of Zhejiang and Fujian (Jia et al., 2018), the average sedimentation rate here is approximately 1.5 cm/yr. The entire 150 cm long sedimentation sequence was recorded from approximately 100 years ago, which was before the emergence of container ships navigation along the coast of China in the late 1970s. Thus, it would be inaccurate to use uniform sedimentation rates to infer the age of sediment before and after the emergence of shipping lanes. In theory, the CIC model of 210Pb dating is suitable for a stable sedimentary environment, but for a less stable sedimentary environment, the CRS model may provide more accurate dating results (Zhang et al., 2008). It was found that above 70 cm depth both models gave similar curves for Z8 (Figure 3D), whereas for Z7, the difference was extremely large, with some layers up to 24 years (Figure 3A). The CRS dating results of the two cores above a depth of 70 cm were almost identical, and the sedimentation records were from 1977 to 2018; below a depth of 70 cm, the CRS model algorithm led to older dating results, and increasing depth (Zhang et al., 2008), with a small sedimentation rate. Therefore, in this study, the CRS dating model was used at depths above 70 cm and the CIC dating model at depths below 70 cm. The sedimentation rate was assumed to be uniform below 70 cm, and the sedimentation rate at 70 cm was used as the sedimentation rate for the 70–150 cm section. On this basis, the dating framework was established for the two cores, and the age of sediment for each layer at the same depth were almost identical, with a mean time difference of 0.4 year. The two cores showed the sedimentation records of 1873–2018 (Figures 3B,E). The sedimentation rates of Z7 and Z8 were in the ranges of 0.77–2.76 cm/yr and 0.77–2.53 cm/yr (Figures 3C,F), respectively. Grain Characteristics of Sediments The grain size components of Z7 and Z8 were dominated by silt, followed by clay, with the least amount of sand (Figure 4). Overall, the content of the grain size component did not fluctuate significantly with time. The sediment type was mainly clayey silt, with an occasional silt layer. Through comparative analysis of the two cores, it was found that the grain size parameters were quite different below and above 70 cm. The sensitive grain size fraction was calculated at 10 cm intervals. Both Z7 and Z8 had two sensitive grain size fractions—the first between 4 and 6 Φ, and the second between 6 and 9 Φ. The peak heights (standard deviation values) of the two sensitive grain size fractions below and above 70–60 cm were very different for the two cores, with the 70 cm value corresponding to the year 1977 (Figure 3). Generally, before 1977, the standard deviation of Z7 was smaller than that of Z8, whereas after 1977, the standard deviation of Z7 was larger than that of Z8. To better illustrate the variation in the sensitive grain size fraction over time, the layer at 70–60 cm was selected and two layers below and above 70–60 cm were shown, such as 150–140 cm, 120–110 cm, 30–20 cm, and 10–0 cm (Figure 5). Here we can see the difference below and above 70–60 cm for the two cores (Table 2), which indicated that the sedimentary dynamics of the environment had changed considerably since 1977. Before 1977, the standard deviation of Z7 was smaller than that of Z8, which meant that the sedimentary dynamics of Z7 were more stable than those of Z8. However, after 1977, the standard deviation of Z7 was larger than that of Z8, which meant that the sedimentary dynamics of Z7 were more turbulent than those of Z8. Moreover, after 1977, both the first and second sensitive grain sizes of Z7 were finer than those of Z8, which assumed that the finer particles were more affected by ship disturbance (Table 2). The first sensitive grain size fraction of Z7 (4.50–5.75 Φ) did not change significantly in the 150–110 cm section, with a moderate increase in the 110–70 cm section, a sudden increase in the 70–60 cm section, and a moderate increase above 60 cm (Figure 6). The second sensitive grain size fraction of Z7 (6.75–8.25 Φ) did not change significantly in the 150–110 cm section, with a moderate decrease in the 110–70 cm section, a sudden decrease in the 70–60 cm section, and a moderate decrease above 60 cm. The first grain size fraction of Z8 (4.25–5.50 Φ) showed a significant change in the 150–70 cm section, a moderate increase and then a decrease, and it changed very little above 70 cm, with a moderate decrease. The second grain size fraction of Z8 (6.50–8.00 Φ) varied significantly in the 150–70 cm section, with a moderate decrease and then an increase, and it changed very little above 70 cm, with a moderate increase. The measured grain size distribution curve (in the range of 2–12 Φ) was divided into 40 small cells in units of 0.25 Φ. The difference between two cores at the same time in these small cells was calculated separately. The content of Z8’s grain size component was subtracted from that of Z7 on the same layer, with the difference shown on a two-dimensional contour plot (Figure 7). Here we can see the quantity of coarser or finer particles difference between two cores at the same time. The results showed that the sediment can be divided into two groups—coarse and fine—using 6.25 Φ as the boundary, and the sediment varied considerably over time. In the section of 150–140 cm, the difference in relative content between the two cores was approximately zero. In the section of 140–80 cm, the coarser particles (<6.25 Φ) of Z7 were significantly less than those of Z8, whereas the finer particles (>6.25 Φ) were significantly more than those of Z8. In the section of 80–0 cm, the opposite occurred, especially above 70 cm, where the coarser particles of Z7 were significantly more than those of Z8. This indicates that the sediment on the shipping lane showed an increase in the coarse particulate fraction and a decrease in the fine particulate fraction from 1977. Elemental Characteristics of Sediment Elements with specific indicators, including S, Cl, Br, Si, Ti, and Ca, were selected for comparative analysis. These elements have steady repeat scanning results and reliable detection, and have often been used by previous researchers (Thomson et al., 2006; Marsh et al., 2007; Agnihotri et al., 2008; Croudace and Rothwell, 2015; Grygar and Popelka, 2016). The content of elements is a relative value, and the data quality is influenced by several factors, such as grain size and water content variations, core surface imperfections, and the presence of organic matter (Croudace and Rothwell, 2015). In order to attenuate above effects, element-to-element ratios were used, which can allow comparison between the cores. Ti is a typical reference element used for normalization (Grygar and Popelka, 2016). The element ratios Br/Cl, S/Ti, Si/Ti, and Ca/Ti, were selected for the study (Figure 8). The Br/Cl ratio for Z7 ranged from 0.06 to 0.17, with a mean value of 0.12, and the element ratio decreased slightly in the 0–40 cm section, with a mean value of 0.11. The S/Ti ratio ranged from 0.12 to 0.38, with a mean value of 0.20, and the element ratio increased significantly in the 0–40 cm section, with a mean value of 0.24. The Si/Ti ratio ranged from 2.77 to 6.79, with a mean value of 5.01, and the element ratio decreased significantly in the 0–40 cm section, with a mean value of 4.87. The Ca/Ti ratio ranged from 2.86 to 4.32, with a mean value of 3.54, and the element ratio decreased slightly in the 0–40 cm section, with a mean value of 3.48. The element ratios shifted at approximately 40 cm. According to the established dating framework (Figure 3B), the year was estimated to be approximately 1999. For Z8, the most significant shift was Si/Ti, which transformed at 77 cm, with a decrease in the 0–77 cm section. The Br/Cl ratio for Z8 ranged from 0.08 to 0.21, with a mean value of 0.14. The S/Ti ratio ranged from 0.14 to 0.34, with a mean value of 0.21. The Si/Ti ratio ranged from 3.92 to 7.20, with a mean value of 5.50, and the element ratio decreased significantly in the 0–70 cm section, with a mean value of 5.17. The Ca/Ti ratio ranged from 3.05 to 4.73, with a mean value of 3.63. Discussion Development of China’s Offshore Shipping Lanes Containerized maritime transport plays an important role in global trade, accounting for 80% of international cargo trade and growing at an average annual rate of 4% (Ducruet and Notteboom, 2012). A country’s container transshipment capability and accessibility directly reflect its maritime transport capacity, as well as its level of maritime transport development. China’s container industry began in 1979, with a container throughput of 32,900 twenty-foot equivalent unit (TEU). The late 20th century was in a period of rapid growth (Figure 9). According to statistics, the average annual container throughput in 1979–1999 was 2.95 million TEU, and in 1999–2018 it was 127.18 million TEU, a staggering 42-fold increase. The Port of Shanghai has held the top position for container throughput of the world’s largest ports since 2010. The external and internal feeders of foreign trade from the Port of Shanghai pass through the outside of Wenzhou Port, where our cores were collected. Combining the model with global economic development scenarios, it is suggested that global maritime traffic will increase by 240–1,209% by 2050 (Sardain et al., 2019). In addition, the shipping industry entered the so-called megaship era in 2007 when a leading container shipping company deployed a fleet of mega-containerships with a carrying capacity of more than 10,000 TEUs (Imai et al., 2013). The development of megaships requires deeper draft depths and the sea areas affected by ship disturbance is expanding into deeper water accordingly, thus the disturbance effect of megaships will have an increasing impact on relatively deep waters. China’s coastal shipping lanes are traversed in dense networks, with frequent passenger and cargo lanes. Vessels with a container load of more than 5,000 TEU, bulk cargo of more than 100,000 tons, and tankers of more than 100,000 tons meet our definition of a megaship. The southeast coast of China, the Bohai Bay, the Changjiang Estuary, the Taiwan Strait, and the eastern side of Taiwan Island are all areas affected by the disturbance of megaships (Figure 10). The study of modern sedimentary dynamics and its products in these areas should consider the influence of megaships on shipping lanes. Differential Performance of Grain Size and Elements The element content in the sediment is mainly controlled by its mineral composition. In addition, hydrodynamic conditions, adsorption and flocculation of fine particles, redox conditions, and human activities all have an influence on the variation of element content (Dong et al., 2009; Singh, 2009; Ye et al., 2013; Grygar and Popelka, 2016). The grain size of marine sediment is closely related to geochemical elements, both of which are in accordance with the “law of elements controlled by grain size” (Zhao and Yan, 1994). Fine-grained sediment can be readily enriched in some chemical elements, either because they are present in the clay minerals or because of the adsorption effect of the fine-grained particles. This is due to the correlation between particle size and elements, which are often used as a proxy for particle size (Zhou et al., 2019). However, as mentioned above, the particle size changed significantly approximately 1977, whereas the elemental ratios of S/Ti, Ba/Ca, Si/Ti, and Br/Cl did not change significantly until approximately 1999. The behavior of particle size and elements was not identical, and it was therefore worthwhile to investigate the underlying mechanism. Correlation analysis was conducted between the element ratios selected in this study and the sand, silt, and clay contents. Both were found to be poorly correlated, with the correlation coefficient almost always less than 0.3 (Table 3). There was therefore no significant correlation between the grain size and the elements. The factors influencing the change in the grain size of marine sediments can be summarized into two categories: the first is the change in sediment sources (sources or sediment flux), and the second is the change of sedimentary dynamics environment, which is closely related to the coastal circulation system and extreme climate events (Liu et al., 2010). The study area is located in the distal mud of the subaqueous Changjiang River delta, and the sediment mainly comes from the Changjiang River. Thus, the annual sediment flux of the Changjiang River Datong Station was counted during the period 1953–2018 (Figure 11). Before 2000, the annual sediment load was more than 300 Mt. After 2003, due to the influence of the Three Gorges Reservoir, the annual sediment load was less than 200 Mt. In this study, the grain size transition occurred early before the drastic change in sediment flux, so the grain size transition was not influenced by the change of sediment source. Some studies suggest that the load, grain size and sediment composition deposited over the coastal and shelf water adjacent to the estuary have changed in response to the Three Gorges Dam. However, this phenomenon occurs mostly downstream of the reservoirs and estuaries, and after long-distance transport, the signal of changing grain size in the study area has been difficult to detect (Gao et al., 2019). Even in the downstream of the reservoir, the median grain size variation is only about 5 μm (Gao et al., 2015), which is smaller than the variation caused by the navigation channel. Therefore, the transition of grain size was caused by changes in the sedimentary dynamics environment, mainly due to disturbance by ships. Marine sediments are mainly composed of terrestrial debris, biogenic materials, and marine authigenic substances, whose relative content determines the distribution of elements in the sediment. The elements, especially the biogenic elements related to the ecological environment, can reflect the evolution of the sedimentary environment. The time of element ratios shift lags behind the time of grain size shift, which was most likely a response of the ecological environment to the effects of ship disturbance. This occurred approximately 1999, when the frequency of navigation began to increase rapidly (Figure 9). At the beginning of ship navigation, the effects of ship disturbance did not cause significant changes in elements, until the rapid growth in the maritime transportation of China in 1999. There are complex mechanisms behind this response, involving processes such as the migration and transformation of marine biological production, biogeochemical cycling of marine substances and elements, especially redox-driven processes (Schubert et al., 1998; Duan et al., 2010). All of these processes were influenced by the environmental characteristics include suspended sediment concentration, salinity, total dissolved organic carbon, temperature, depth, pH, Eh, phytoplankton, and water circulation (Marcussen et al., 2008). Only after the disturbance frequency reached a certain level, would the elemental variation manifest. Therefore, grain size variations were expressed soon after the start of navigation, whereas the biogenic elements did not change significantly until 1999. Sedimentary–Ecological Response to Ship Disturbance Quantitative studies on the impact of human activities on ecology are of vital importance. In recent years, global reductions in riverine sediment fluxes have become widespread (Syvitski et al., 2005; Milliman and Farnsworth, 2011). Studies to investigate the impact of human activities, mainly in terms of changes in the fluxes and sediment properties of the sea (Dai et al., 2008; Gao et al., 2014; Yang et al., 2019), have made good progress in quantifying these impacts. For example, Dai et al. (2008) argued that, for the Changjiang River, the contribution of climate change to the reduction of sediment flux into the sea was only approximately 3%, with anthropogenic contributions accounting for 97%. Ship navigation is an important anthropogenic agent. During navigation, ships alter the local hydraulic regime, i.e., the generation of currents and ship-induced waves (Rapaglia et al., 2011; Fleit et al., 2016). The highest near-bed velocities resulting from ship generated waves range between 0.1 and 0.4 m/s in Danube River of Hungary, which was obtained by computational fluid dynamics (CFD) modeling (Fleit et al., 2016). The average flow velocity with no ship is 0.02 m/s, which means an increase of an order of magnitude due to ship (Fleit et al., 2016). In situ measurement shows that the water velocity increases to 2.1 m/s when the ship passes by, which is more than an order of magnitude higher than the typical tide and wind driven current speed in the channels of Venice (Coraci et al., 2007). The increased current speed can increase bottom shear stress, which will cause the resuspension of sediment in shallow water areas and the erosion of the channel slope and seabed (Rapaglia et al., 2011; Ji et al., 2014; Fleit et al., 2016). It is found that the ship-generated waves (including drawdown and surge waves) have much more effects on sediment resuspension than wind waves (Houser, 2014). Once the shear stress generated by the ship is larger than the critical shear stress which is further determined by sedimentary characteristics, the seabed sediment would move in suspension, saltation, and creep (Liou and Herbich, 1976; Liao et al., 2015). The bottom shear stress caused by propeller scour is an important mechanism contributing to sediment resuspension and subsequent erosion (Liao et al., 2015). In the same situation, the resuspension of coarser particles requires a greater incipient velocity (Liou and Herbich, 1976). Finer particles are easier to resuspend. Ship-generated waves are capable of resuspending significant quantities of bottom sediment and suspended sediment concentration increases with increment of turbulent kinetic energy of the ship wakes (Houser, 2014; Ji et al., 2014). In situ observation showed that suspended sediment concentration rose from 12 mg/L to 400 mg/L in Venice Lagoon, Italy, after the ship had sailed (Rapaglia et al., 2011). The intensity of sediment disturbance by a ship is related to the speed, propeller rotation speed, water depth, and draft of the ship (Liou and Herbich, 1976; Hong et al., 2013). Generally, the faster the speed of ships, the shallower the water depth, and the deeper the draft, the stronger the intensity of the disturbance. Sediment resuspension caused by ship disturbance has led to a series of changes in both the sedimentary environment and ecology. In this study, when establishing the dating framework, it was found that in a relatively stable sediment environment (such as the location of core Z8), the dating results obtained by the CIC and CRS dating models were consistent. However, in an unstable sediment environment (such as the location of core Z7), the results of the two dating models differed greatly, and the age difference of the same layer could be up to 24 years. Because of the inherent shortcomings of the CRS model, the bottom age is biased toward aging, whereas the CIC model homogenizes the sedimentation rate, which is obviously not applicable in an unstable sediment environment. A single dating model cannot establish a convincing and comparable dating framework. The best approach is to combine the two models, using the CRS model in the layer affected by ships and the CIC model in the lower part, to establish a CRS–CIC dual dating model. Figure 3 shows that the CRS–CIC dual dating model can be used with reliable results to address sedimentation rates in an overall sedimentary environment, but locally influenced by frequent ship motion. Since the development of coastal shipping in China in 1977, the fluctuations of grain size has changed largely. Before 1977, the fluctuation of grain size of Z8 is wider than that of Z7, which shows an opposite trend after 1977. Core Z8 is located near a small bedrock island called “Pishan,” which will cause more complicated hydrodynamics (tidal and wave) compared to core Z7 before 1977. In this case, the fluctuation of grain size at Z8 is wider than that of core Z7. However, the hydrodynamic condition is more complicated at core Z7 than that of core Z8 after 1977 due to the disturbance of ships, causing the fluctuation of grain size of Z7 is wider than that of Z8. In addition, the sensitive grain size at Z7 has been finer (Figure 5A). With 6.25 Φ as the boundary, the grain fraction finer than 6.25 Φ decreased (Figure 7). It was calculated that before 1977, core Z7 had a significantly higher fine grain fraction (>6.25 Φ) than core Z8, with a mean value of approximately 6%, but after 1977, core Z7 had a significantly lower fine grain fraction (>6.25 Φ), with a mean value of approximately 5%. This indicated an 11% reduction in the grain fraction finer than 6.25 Φ at the shipping lane and a significant coarsening of the sediment. Ship motion affected the local sedimentary dynamic environment. Although the total sedimentary flux was the same as the flux outside the shipping lane, it has a selective modifying effect on the sedimentary record: in the sediment on the shipping lane, which was dominated by silt, all grain fractions became more active under frequent ship disturbance. Due to differences in sedimentation mechanisms, it was relatively slow for fine grain to settle, and a significant proportion of the fine grain fraction may leave the shipping lane, causing a reduction in the fine grain fraction entering the seabed sediment. It has been shown that vessel-induced wakes can increase the concentration of suspended sediment by a factor of 30 above background values, but this surge only lasts for a few minutes, and then the high concentration persists for almost an hour before returning to background values (Rapaglia et al., 2011). The sustained high concentration is due to the slow settling velocity of fine particles. Ship disturbance also caused ecological changes. After 1999, the value of Br/Cl in the Z7 core decreased from 0.12 to approximately 0.11, the value of S/Ti increased significantly from 0.20 to 0.24, the value of Si/Ti decreased from 5.01 to 4.87, and the value of Ca/Ti decreased from 3.54 to 3.48. The decrease in Br/Cl could indicate, to some extent, the decline of primary productivity in the region (Thomson et al., 2006). High S-levels tend to indicate a low oxygen zone (Croudace and Rothwell, 2015). Si/Ti is an important indicator of siliceous phytoplankton productivity. The principle of reduced Ca/Ti is the same as that of Si/Ti, both of which belong to the response of biogenic elements to the marine environment (Marsh et al., 2007; Agnihotri et al., 2008). Specific to the above individual indicator, small changes in value may not be evidence of significant changes in the ecological environment. However, the changes in the four indicators pointed to consistency, which may be related to the disturbance of ships in the waterway. For example, frequent disturbance by ships made the shipping lane waters turbid, and light became the most important factor limiting marine productivity. The turbidity and high concentration of suspended solids was not conducive to the growth and reproduction of phytoplankton, and this reduced primary productivity (Jiang, 1993; Pan et al., 2011). In addition, the amount of phytoplankton directly affected the dissolved oxygen content in seawater. The reduction of phytoplankton decreased the dissolved oxygen content in seawater, leading to the dissolution of iron oxides and the formation of pyrite (FeS2), which increased the amount of elemental S in the sediment (Jiang, 1993; Croudace and Rothwell, 2015). Frequent disturbance was detrimental to diatom growth and reproduction, and decreased the biotransformation rate of silicates in seawater and the “silicon fixation” effect, thus decreasing the Si/Ti value in sediment (Huang et al., 1986; Pan and Shen, 2009). Calcareous phytoplankton such as coccolithophores are widely distributed and abundant in the ocean, are well preserved in the sediment and are important sources of biogenic Ca in the sediment (Poulton et al., 2007, 2013). Frequent disturbance was also detrimental to the growth of coccolithophores, and made it difficult for biogenic Ca to adhere to the particulate matter, which can reduce the Ca/Ti ratio in the sediment. Overall, the quality of habitat conditions along the shipping lane was significantly different from those outside the shipping lane. The content of each element in the sediment of the shipping lane was controlled by a combination of physical, chemical, and biological interactions. Suspension of fine particles caused by physical disturbance affected the marine ecosystem and ultimately changed the elements in the sediment.

#### Extinction

Poddar 21, Director SafEarth Clean Technologies Pvt Ltd. (Harshit, How The Loss Of Phytoplankton Could Lead To Our Demise, <https://medium.com/climate-conscious/how-the-loss-of-phytoplankton-could-lead-to-our-demise-8f9c91b937a8>)

The base of the entire aquatic food chain is the phytoplankton. Essentially what plants do on land, phytoplankton does in the ocean. It is the foundation on which the entire aquatic life is built. Any threat to this species would ultimately lead to a complete collapse of aquatic life. Unfortunately, the phytoplanktons are dying, and we are the ones killing them. These microscopic algae have been critical in making life on Earth possible for a number of key reasons. Oxygen Phytoplankton are responsible for over 50% of all the oxygen in our atmoshpere. These microscopic algae in our oceans are some of the most laborious workers in our ecosystem. Day and night, they absorb the carbon dioxide in the atmosphere and convert it into oxygen through photosynthesis. Food All the food in the ocean is ultimately produced by phytoplankton. Through photosynthesis, they produce carbohydrates which are in turn consumed by small fishes. These fishes are then consumed by larger fishes and so on. Kill the phytoplanktons and the oceans will be left with no food.

#### The second scenario is Indian Ocean Conflict —

#### The continued growth of megaships will cut India off from global trade

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According to the ITF, direct port calls by ships are considered important because they reduce risks, feeder vessel costs, and turnaround time in comparison to the option of trans-shipment feedering[2] via other ports.[23] Ports are considered competitive when they are chosen more regularly for direct calls than other ports.[24] Maritime landside infrastructure limitations dictate direct call options. A terminal’s integration with the wider set of requirements in the supply chain decides the choice of routes.[25] Even if a terminal is large enough to handle the berthing of a mega-ship, it needs several large cranes, better yard management capability, increased automation, larger storage facilities, more inland connectivity, and enhanced labour productivity. Mega vessels seek speedy unloading of the large volumes they carry.[26] Most countries in the Indian Ocean have to deal with reduced direct port calls due to their inability to serve mega-ship port calls.[27] With the size of ships predicted to grow beyond 21,000 TEU after 2020, more countries could be increasingly cut off from direct calls unless they undertake extensive modernisation. India’s largest port, the Adani CMA Mundra Terminal Private Limited on its west coast, can currently accommodate ships only up to 18,000 TEU. The majority of India’s container traffic is therefore shipped through ports outside the country, mainly from Colombo and Singapore. India is developing six deep-water sea mega-ports for receiving mega-ships under its ambitious Sagarmala Project, though the project is still in its nascent stages.[28] Unless India invests in maritime infrastructure, it will be unable to attract direct port calls to its shores, and will be vulnerable to geopolitical risks emerging from the Chinese investments in Colombo’s Hambantota mega-port and Pakistan’s Gwadar mega-port.[29] Cities unable to manage land acquisition for mega-port complexes are in danger of becoming completely cut out of direct calls. Long-term market projections suggest that by mid-century, international trade could require container ships of up to 50,000 TEU capacity which are likely to sail exclusively between trans-shipment terminals and mega-port complexes.[30] Mega-ship port calls could therefore mark the beginning of the end for the link between cities and ports.[31]

#### Indian fear of global isolation causes lash out and conflict with China

Mukherjee 20, Researcher on Asian Security with the Stimson Center. (Tuneer, Sino-Indian Maritime Competition: Shadow Fighting In The Indian Ocean, https://www.stimson.org/2020/sino-indian-maritime-competition-shadow-fighting-in-the-indian-ocean/)

Sino-Indian conflict has historically been restricted to the land domain. However, as both Beijing and New Delhi have opened their economies to global commerce, their dependency on sea-borne trade has exponentially increased. Both have come to realize the importance of naval power in enabling them to secure their sea lines of communication (SLOC), their primary concern being undisrupted energy access from the Middle East. To this end, both nations have outlined ambitious force modernization plans to develop a “blue-water navy” that can operate at longer distances from their homeland for sustained periods of time. As Beijing’s maritime security interests intersect with India’s, there has been a linear escalation in the interactions between the two naval forces, leading to benign competition between them in the Indian Ocean Region (IOR). The Malaccan Dilemma As early as 1985, Chinese naval planners began deploying squadrons for routine port calls in the Indian Ocean. 1 Over the years, this has evolved into Chinese naval taskforces engaged in security missions. In fact, in September 2019, India’s naval chief Admiral Karambir Singh asserted that at any given time on an average, about seven to eight Chinese ships operated in the area. This escalation of Chinese naval presence has been gradual and can be linked to China’s security dilemma over its access to SLOCs west of the Strait of Malacca. The “Malaccan Dilemma,” first touted by Chinese President Hu Jintao in 2003, was predicated around a crisis scenario in which China would be denied access to its trade and energy routes in the IOR. Since then, Beijing has stepped up its diplomatic, trade, and naval efforts to secure a foothold in the Indian Ocean. According to some estimates, around 40 percent of Chinese trade passes through the choke point every year. China’s Indian Ocean Outreach To address the “Malaccan Dilemma,” President Hu Jintao in 2004 initiated the policy of “new historic missions,” which entailed Chinese naval forces being deployed in the far seas for military operations other than war. The deployment of Chinese naval forces to the Gulf of Aden in 2008 for anti-piracy operations marked an inflection point in Sino-Indian maritime dynamics. It signaled Beijing’s intention of building a robust presence in the IOR to safeguard its interests. Since then, China has increased its footprint in the IOR by weaving together a patronage network in the Indian Ocean littoral countries. China has undertaken massive port development projects in countries such as Sri Lanka, Pakistan, and Bangladesh, under its 21st Century Maritime Silk Road initiative, accompanied by bountiful transfers of naval equipment and technology. All this has affected India’s strategic calculus, triggering fears of encirclement in what it considers its backyard. Shifting the Status Quo Notably, these Chinese endeavors resulted in three significant developments that have challenged the status quo in the Indian Ocean maritime theater. The first was the frequent deployment of Chinese submarines for “anti-piracy operations” in the region. This highly unusual move made Indian strategists wary of Beijing’s bona fide intentions in the IOR. The second was the inauguration of China’s first overseas naval base in Djibouti in 2017, which made concrete the prospect of a Chinese logistical support network in the region. The third is that, since 2015, Chinese research vessels have routinely plied the area collecting data and improving China’s knowledge of the hydrography, topography, and bathymetry of the waters. Such civilian missions help improve China’s operational knowledge of the IOR, while making it increasingly difficult for Indian forces to monitor Chinese activities in the region. India naval strategists fear these missions are aimed at augmenting Chinese subsurface maneuvers to counter India’s theatrical superiority. India’s Naval PostureIn the backdrop of their strategic competition and both countries’ efforts to arm themselves with the latest technology, Sino-Indian maritime rivalry raises concerns about an impending altercation between them in the high seas of the Indian Ocean.[…] In a likely scenario of a maritime confrontation between them in the region, their naval power will be well-matched. India’s biggest strategic advantage lies in its central position in the Indian Ocean, and its familiarity with the operating environment of the IOR. The Indian Navy has always maintained that its primary focus of operations is providing security for the Indian Ocean – protecting the homeland against external actors and maintaining sea control over the various SLOCs and chokepoints of the IOR. Thus, considering China’s increased presence, India has recalibrated its bearings and sought to improve its maritime domain awareness (MDA) in the IOR. It has adopted a more vigilant constabulary role using anti-submarine warfare equipment. Beginning in 2017, India initiated a new pattern of mission-based deployments in various areas of the IOR, conducting patrols around key SLOCs all year round. Taken together, these moves have amplified the Indian Navy’s operational awareness of the region. India has also initiated closer maritime cooperation with nations that are likewise cautious of China’s naval expansion. On the sidelines of the 2017 East Asia Summit in Manila, India, Japan, Australia, and the United States, took part in consultative discussions, reinvigorating the once abandoned Quadrilateral Security Dialogue. What came out of that summit and subsequent discussions, which have since been elevated to the ministerial level, was a loose framework for how to manage issues pertaining to the maritime commons and the concept of a free and open Indo-Pacific. The brainchild of Japanese Prime Minister Shinzo Abe, the Indo-Pacific essentially represents a realignment of the strategic backdrop against which the maritime security dynamics of Asia are set, reimagining the Indian and the Pacific Ocean as a unitary maritime theater. The United States has also supported this alignment by means of strategic and diplomatic outreach in the region via the Free and Open Indo-Pacific strategy. Washington and New Delhi have correspondingly cultivated a closer maritime security relationship, cementing strategic cooperation via a logistics exchange agreement in 2016 and an information sharing agreement in 2018. Comparing China and India’s Naval Capabilities In the backdrop of their strategic competition and both countries’ efforts to arm themselves with the latest technology, Sino-Indian maritime rivalry raises concerns about an impending altercation between them in the high seas of the Indian Ocean. China and India have progressively strengthened their naval capabilities over the years, investing in high value platforms such as nuclear-powered submarines, aircraft carriers, and autonomous unmanned vessels. Beijing and New Delhi have also made sustainable efforts to develop their C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) capabilities by launching their own navigation satellites. However, as Figure 1 & 2 below indicate, there is a growing gap between the blue-water naval capabilities of the two nations, with China clearly ahead. Yet, it is also important to note that China’s primary focus of naval strength has been in its near seas surrounding the first island chain. The Indian Ocean, while important, is a secondary focus for Beijing. Comparatively, India has not engaged China with a counter-theater presence in the Western Pacific and has focused its efforts instead on amplifying its naval defense of the IOR. The tri-services base at the Andaman & Nicobar Islands serves as an important component of this effort. In a likely scenario of a maritime confrontation between them in the region, their naval power will be well-matched. Anticipating Future Conflict In September 2019, a Chinese research vessel was forced to retreat by Indian forces for operating inside the exclusive economic zone of the Andaman & Nicobar Islands without prior permission. The incident reminded both sides of the delicate intricacies surrounding maritime engagement in the open seas. Specific confidence-building mechanisms and crisis management protocols are nearly non-existent between the two navies. Save for statutory procedures guiding interactions on the high seas, Sino-Indian maritime interactions remain unregulated. As both countries’ naval forces come in contact more frequently, tensions loom on the horizon. China and India have been engaged in a competitive embrace with one another for a while now. Both sides realize the importance of a cooperative bilateral relationship but are unwilling to cede any strategic ground. In the likelihood of a situation where Beijing gains an upper hand in the continental realm, strategists in New Delhi might be tempted to implement access-denial measures against Chinese naval assets in the region, to tilt the strategic balance back in India’s favor. While a confrontation along their international border could be isolated, a similar scenario in the maritime domain is likely to have multifaceted implications far beyond New Delhi and Beijing.

#### That goes nuclear

De Silva 21, Department of Strategic Studies, General Sir Johnkotelawala Defence University, Disarmament, Indian Ocean and Strategic Externalities: The Case of Sri Lanka, Journal for Peace and Nuclear Disarmament Volume 4, 2021 - Issue 2)

Frank Hoffmann’s “Pink Flamingo” concept is pertinently applicable to the South Asian region (Barner and Bensahel 2015) since it highlights a disaster that a state or an entity would have noticed emerging but ignored and that could cause catastrophic devastation. Hoffman is of the view that Pink Flamingo situations are patently evident but deliberately disregarded by policymakers for diverse reasons. South Asia is prone to dangerous nuclear trends and they are often ignored by the policymakers of non-nuclear states. This situation is worsened due to the tendency of avoiding adherence to the international disarmament mechanisms by the emerging nuclear powers in the region. Neither India nor Pakistan is a party to the Nuclear Non-Proliferation Treaty (NPT). It is understood that if an accident flares up in any of these states it could escalate into a worse pitch due to the public panic. In such an atmosphere nobody can guarantee that South Asia is suitably prepared to handle the transnational after effects of a nuclear catastrophe. Even though the threat is imminent, none of the non-nuclear states in South Asia has paid adequate attention to mitigate it. Apart from the direct danger of an accident or nuclear confrontation, the neighboring states of nuclear powers also face the threat of strategic manipulation of their assets by nuclear states. The worrisome factor is a blissful underestimation by non-nuclear states about the gravity of the emerging and persistent problem. The lack of awareness on how to face such situations could result in an abrupt collapse of the security well-being of non-nuclear states due to factors that operate beyond their control. This paper attempts to reveal the dangers of the existing “pink flamingo” situation in South Asia through the lens of a non-nuclear state.

#### Nuclear deterrence fails — conceptions of “limited war” are wrong

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The Ladakh crisis, still not over, has established an unpalatable reality: India’s nuclear weapons, whose raison d’etre is deterrence, have failed to deter China.

By reportedly occupying 1,000 square kilometre (sq km) of Indian territory in Ladakh, China not only walked through India’s conventional military capabilities, but also lobbed its purported nuclear deterrence out of reckoning. The Chinese message was loud and clear: China did not consider India’s nuclear weapons of any consequence.

Interestingly, Shivshankar Menon, former national security advisor, in his 2021 book India and Asian Geopolitics: The Past, Present – written after the 2020 Ladakh crisis began – says, “Since India became an overt nuclear weapon state in 1998, there has been no credible threat of using nuclear weapons against India nor attempt to use nuclear black-mail to change its behaviour. To that extent, India’s nuclear weapons have served their desired purpose.”

As NSA, Menon was responsible for India’s nuclear doctrine, posture, and operationalisation with the command of nukes vested in the prime minister-led National Command Authority.

To recall, after a series of five nuclear tests done on May 11 and 13, 1998, Prime Minister Atal Bihari Vajpayee wrote a letter to US President Bill Clinton citing China’s nuclear tests and the nuclear weapons nexus between China and Pakistan as the reasons for India’s tests. India also announced a nuclear ‘no first use’ policy, which meant that if deterrence failed, India would be prepared for an assured and credible second-strike capability after absorbing a first strike from the enemy – China, in the present case.

The second-strike capability is based on a triad of land, sea and air vectors. Given the paucity of combat aircraft for conventional war, especially when catering for a two-front war, aircraft availability for the nuclear role is merely theory. The land vector would be provided by the Agni-5 ballistic missile with a 5,000 km range meant to cover China. While this missile has yet to be operationalised, the Defence Research and Development Organisation (DRDO) has announced plans for Multiple Independent Re-entry Vehicles (MIRVs) which can deliver a number of warheads at different targets simultaneously instead of a single big bang.The DRDO awaits government clearance for MIRVs, which is the technology of the late 1960s.

The sea vector of the triad would be India’s indigenous ballistic missile submarines (SSBNs) INS Arihant and the follow-on vessel INS Arighat, which are expected to be armed with K-4 submarine launched ballistic missiles with a range of 3,500 km to hit China. The K-4s are still under development.

Incidentally, INS Arihant was commissioned in August 2016 and did its only deterrent patrol in November 2018. However, it was not clear what was meant by a deterrent patrol since SSBNs should carry its nuclear missiles, which was not done in this case.

Meanwhile, unsure about India’s assured second-strike capability, especially against China, some Indian analysts, writes Menon, “believe that India should change its no-first-use policy and begin to think of nuclear weapons as war-fighting weapons to compensate for India’s conventional inferiority against China.” The assumption is that since nuclear powers do not go to war there is very little possibility of a war between India and China. However, if war happens, it would, at best, be a limited border war.

The origin of this thinking that nuclear powers do not go to war lies in Cold War theology, where it was correctly believed that the presence of nuclear weapons with the US and Russia prevented war between the two blocs — NATO and Warsaw Pact — which had divided the world. Holding it as a truism for all times to come, Indian analysts – comprising policymakers, the military brass and retired senior officers – have superimposed this template on India. Hence, this popular narrative has emerged since the Ladakh 2020 stand-off between India and China.

These assumptions — no war, or a limited one between India and China — have neither been analysed nor war-gamed. The reality is that let alone the People’s Liberation Army (PLA), these assumptions do not even hold true against the Pakistani military, whose capabilities, with China’s support, have increased substantially.

Nuclear weapon powers

Before examining India’s case, there is a need to put into perspective the nuclear weapons of the US and the Soviets, and now the US and China.

In the 1950s, the Soviets had an overwhelming advantage over the US military in conventional forces. While the Soviets were not as technologically advanced as the US, they believed that quantity had a quality of its own. Instead of matching the Soviets’ quantity — tank for tank and gun for gun — US President Dwight Eisenhower introduced battlefield atomic or tactical nuclear weapons (TNWs) to thwart any Soviet conventional offensive in the European theatre. The TNWs worked because the US had superiority in strategic nuclear weapons (big yield bombs).

Called the ‘New Look’ strategy, the belief was that if the Soviets retaliated with their strategic nukes in response to the US’s TNWs, the latter could counter-retaliate with a bigger nuclear arsenal and perhaps control the nuclear escalation ladder. Since the Soviets did not put the US’s assumption to test as it would have resulted in Mutual Assured Destruction (MAD), the ‘New Look’ strategy, which came to be known as the US’s first offset strategy, worked.

However, by the early 1970s, two things happened. While retaining a formidable conventional arsenal, the Soviets managed to match the US in certain key conventional technologies. And their strategic nukes inventory matched the US’s nukes in range and yields, making an early use of TNWs extremely risky. With the Soviet or Warsaw Pact forces outmatching the US-led NATO in conventional forces’ size while maintaining near-technology parity, TNWs – without a superior strategic nukes arsenal – became too risky for use since the US’s control over the nuclear escalation ladder was no longer credible.

This led to the US’s second offset strategy where the reliance on nukes was abandoned. Instead, highly accurate and long-range conventionally guided munitions which could stop Soviet forces before they were arrayed for an assault were sought. Making use of battle networks and space for precision and stand-off attacks, conventional munitions which could achieve battlefield effects comparable with TNWs were fielded. This second offset strategy was used in the 1991 Gulf War against Iraq with spectacular success.

The central point of the US’s second offset strategy was that both conventional and nuclear forces had to be credible and strong for major powers to not go to war since neither side would feel confident of exercising war control. This line of thought holds good even today, as observed between the US and China with regards to military tensions in the Taiwan Strait and the South China Sea.

In both the Taiwan Strait and South China Sea, the PLA has built a formidable Anti-Access and Area Denial (A2AD) firewall, in addition to excellent cyber and electronic warfare capabilities comparable with the US military. So, while the US military can continue with its aggressive freedom of navigation patrols in both theatres, which are meant to signal its intent to China, Taiwan and ASEAN, it worries about crossing Chinese red lines since it is not confident of winning a conventional war.

For this reason, the Biden administration has, since coming to office, been seeking an appointment for defence secretary Lloyd Austin with Chinese senior vice-chairman of the Central Military Commission General Xu Qiliang to determine mutual red lines. China has repeatedly refused this meeting on the ground that Xu outranks Austin on the protocol front.

The US fear is that continued uncertainty over Chinese red lines worries ASEAN – and the group’s members may then request the US military to slow down, if not totally abandon, its sea and air combat patrols.

On the other hand, having achieved parity in conventional war in these two theatres with the US military, China worries about getting overwhelmed by the US’s massive nuclear arsenal and aggressive first-use posture. This, theoretically, could lead to a reprise of the US’s first offset strategy situation where, backed by a bigger strategic nuclear inventory, the US military could, if outdone in conventional war, use its tactical nukes.

While refusing to be a party to the Strategic Arms Reduction Treaty (START) between the US and Russia on the plea that its nuclear weapons arsenal is comparatively small, and unwilling to change its no-first-use posture since it could affect its peaceful rise, China has decided to increase its strategic weapons inventory to build credible nuclear deterrence to discourage the US military from any nuclear misadventure.

This explains the building of an additional 120 missile silos for its DF-41 and DF-31 Inter Continental Ballistic Missiles (ICBMs). From its de-alert status — with separate launchers, missiles, and warheads — the PLA seems to be moving towards keeping a part of its nuclear arsenal on a launch on warning (LOW) nuclear posture. This refers to initiating a nuclear strike on detection of an incoming hostile missile. China’s early detection system comprising ground and space-based components, a control centre and data processing system has been provided by Russia. This strategic early warning, command and control, and rapid reaction system is available with only three nations — the US, Russia and China.

China has also deployed lower yield nuclear weapons for use against campaign targets to reduce collateral damage. Its DF-26 ballistic missile which can conduct precision strikes is the likely vector for lower yield warheads.

India’s nuclear domain

Against this backdrop, the belief that abandoning no first use and using nukes for war-fighting could compensate for India’s conventional inferiority against China seems especially misplaced.

For one, a shift to a first-use policy would not diminish the need for conventional deterrence. For another, while not being able to match Chinese nuclear deterrence, it could compel the PLA, if required, to use any or all three options: destroy the Indian nuclear kill chain with its cyber, electronic, directed energy weapons or long-range precision hypersonic glide vehicles; use lower yield nukes in campaign as a warning signal; or resort to an LOW nuclear posture. Simply put, India’s first-use policy against China would be suicidal.

Moreover, the proposition of fighting a limited war with China is equally ill-informed. The genesis of the concept of limited war is the 1999 Kargil conflict between India and Pakistan which, at best, was an aberration on three counts.

First, with no participation of the Pakistan Air Force, the Indian Air Force had air dominance, which would not be possible in war. Second, since the Pakistan Army too did not participate — it was a combination of the mujahids and Pakistan’s Northern Light Infantry (then, a paramilitary and not a regular army) versus the Indian Army and the IAF — the Indian side could build an overwhelming superiority of land forces in a localised area with massive employment of artillery in a direct firing role; all this will not happen in a proper war. And third, the Nawaz Sharif government cracked under the US’s pressure to withdraw its forces and end the conflict.

Instead of learning the right lesson – that the Indian military needed to build credible counter-offensive capability – Army Chief General V.P. Malik formalised the limited war concept. Writing in the Indian Express newspaper of June 21, 2002, he said, “In the changed Indo-Pak strategic environment, there is a likelihood of limited wars than an all-out war. A limited war implies limited political and military objectives, not hurting excessively at any one time, limited in time, space and force levels.” The reality is that the complexion of war — whether it be limited or all-out — would be determined by the stronger side. In this case, China.

Failure to develop deterrence against China

On the question of nuclear tests, what needs to be asked is this: Why did the Vajpayee government, which said its nuclear tests were to maintain balance with China, fail to develop nuclear deterrence against it?

The answer has been provided in US’s former deputy secretary of state Strobe Talbott’s book Engaging India: Diplomacy, Democracy, and the Bomb. According to Talbott, days before India’s tests, Jaswant Singh, who was close to the prime minister but held no office at that time, sought an impromptu appointment with the US energy secretary Bill Richardson, who was visiting India. Considered close to the US President Bill Clinton, Richardson was staying at the US ambassador’s residence in New Delhi. During their meeting, Singh told the US officials that should the US president wish to convey something urgent to the Indian prime minister, it could be done through him, bypassing the slow bureaucratic procedures. Confused at that time, the US understood the import of Singh’s secret mission when, within days, India did its nuclear tests.

Instead of strengthening national security by quickly covering the paces from nuclear tests to nuclear weaponisation, the Vajpayee government dawdled, working on close ties with the US by offering itself as a strategic counterweight to China. Singh’s meeting with Richardson led to 13 rounds of talks on non-proliferation between him and Talbott. The talks were not about China, which ostensibly was the reason for India’s tests, but on Pakistan. Since the Pakistan Army Chief, General Jehangir Karamat, had told Talbott that Pakistan would not compromise on its national security and would do its own tests to match India’s, the US’s hope on non-proliferation was to dissuade a willing India from credible weaponisation. Pakistan had made it clear that its nuclear programme was tied with that of India.

Fast forward to May 2020. India lacks both conventional and nuclear deterrence against China. With little possibility of catching up on either, the gap will only continue to grow. Specific to the nuclear domain, India has several tough questions on the table: How to develop nuclear deterrence? What should India’s nuclear policy and posture be? What to do with Agni-5 and SSBNs since nuclear deterrence had failed? How to develop conventional deterrence since the military leadership has shown little interest in understanding the PLA’s informatised and intelligentised wars to modify its own military reforms? Procrastination on these issues is not an option since China would soon be tempted to militarily reclaim its territories from India, including Ladakh and Arunachal Pradesh.

Sadly, the situation vis-à-vis Pakistan is not encouraging either. Reported to have more nukes than India, and with full spectrum nuclear capability (covering tactical, operational and strategic targeting), Pakistan has developed credible nuclear deterrence against India. Moreover, with increased interoperability (i.e. the ability of the PLA and Pakistan military to fight together against India) since the scrapping of Article 370 from Jammu and Kashmir – which brought the two friends in tight military embrace – operational surprises by the Pakistan military cannot be ruled out in conventional war.

The going, as the saying goes, has got tougher for India, both in the north and the west.

#### The third scenario is Hacks —

#### Megaships are unique targets for cyber attacks

PTN 16, (3 Ways to Tackle Piracy and Terrorism, <https://www.porttechnology.org/news/how_shipping_lines_can_tackle_piracy_terrorism_and_cyber_threats/>)

However, as ships become larger, and the volume of containers increases, this puts ships at a much bigger threat of piracy and terrorism; however, the motivations behind each are fundamentally different, since they both have a different aim in mind. So what are the motivations behind attacks on mega containerships? Peter Cook, Director of the Security Association for the Maritime Industry, argues: “Whilst there is a clear difference between the motivation for piracy and terrorism (piracy being a criminal act is predicated purely on financial gain, whereas terrorism has an ideological aim and is therefore designed to terrorise those involved and affected), it does not necessarily mean that they should be treated exclusively. “Whilst a pirate is looking at what he can make out of attacking a ship from a business perspective (weighing up the risk v return ratio) a terrorist group will be looking at how they can further their cause by attacking a specific type of vessel, perhaps due to its flag, company of ownership or national/international standing. The terrorist attacks listed above clearly demonstrate that terrorists want a sensational attack and therefore the bigger the better.” Technical Paper: Port Security and the Effect of Piracy As well as piracy and terrorist threats, cyber security is also a massive issue within the maritime industry. It is such that cyber security has a fluctuating level of severity within the industry and requires increased focus to effectively deal with potential threats. It is therefore important for shipping lines not to underestimate their exposure to risk and implement the appropriate solutions. A recent survey from Moore Stephens found that although risk management strategies are satisfactory in the shipping industry, the companies that do not implement sound practices for preventing security threats are at risk or paying a much higher price, with cyber security being one of the most pertinent threats. Peter Cook elaborates on the main types of cyber security threats facing mega ships: “Cyber-attacks fall into three main categories: a criminal using cyber as the facilitator to commit another crime such as fraud; a targeted cyber-attack when the systems of a shipping company/ship are attacked to get specific data/IP or cause the company to lose business and or revenue or a “Hacktivist” who may target a company for personal gratification (CIA hackers for example).

#### Terrorists have the means, motive and opportunity to hack and weaponize megaships

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The vast bulk of the world’s critical economic and military traffic passes through a handful of narrow strategic waterways known as “maritime chokepoints.” While these waterways have always been prey to pirates, weather, and maritime accidents, these perils are now joined by maritime cyber attacks — whether conducted for ransom, malicious disruption, piracy, or as part of larger geopolitical conflicts. When a commercial vessel or warship is strategically delayed via sea-hacking, critical shipments are delayed by days or weeks. The massive size of modern container ships such as the Ever Given makes hacking their steering systems or forward speed a means of weaponizing the vessel. It is worth a bad actor’s effort to experiment with grounding a major new container ship remotely from land-based cells. The Suez Canal could be one of the more lucrative cyber disruption targets due to the amount and expected speed of traffic flow through its two-lane and one-lane sections. 30 percent of the world’s shipping container volume carrying 12 percent of global trade passes through the canal. Ships, including the very largest container vessels, can cut an average 12 days off a three-week trip from India to Italy by transiting the canal. The 205-meter-wide canal is known to be challenging even at modest speeds for ships the size of the Ever Given. Its 120-mile-long narrow transit offers the opportunity for cyber-induced disruption, particularly if one wanted to stall oil and gas deliveries to the Mediterranean and Europe. If the canal is blocked companies must take the alternative route — around the Cape of Good Hope, adding 10 to 12 days transit time, fuel costs, and security costs. Comparatively, according to a 2006 RAND study, the closing of the Malacca Strait would increase transit time by only an additional three days. With the grounding of the enormous container ship — the Ever Given — on March 23, 2021, the world was reintroduced to the issue of “maritime choke points”. The giant ship blocked the Suez Canal for six days. The Ever Given was not a cyber target this time but its grounding demonstrated the potential impact on global trade when a ship blocks a chokepoint. For example, the BBC reported that fears that the blockage would tie up shipments of crude oil resulted in crude prices rising by 4 percent on international markets. The Ever Given was launched in 2018, and is one of the largest ships in the world. It was built and is owned by a Japanese firm, leased and operated by a Taiwanese company, and sailing under a Panamanian flag. Similar-sized ships carry an increasing percentage of global trade, and the relatively recent 2015 addition of a second channel to the Suez Canal was undertaken in part to accommodate them. The canal is wide enough to accommodate such large vessels but physical clearance on either side of both channels is currently still limited. Mistakes in speed or understanding of wind effects on huge vessels can (and did in this case) come from human error. But they can also be stimulated by difficult-to-detect cyber intrusions into the navigation and steering systems of these ships, especially in newer vessels. The internet protocol networks used for steering and navigation are often not segregated effectively for cyber security. They are connected to the serial bus networks that make up the supervisory control and data acquisition systems critical to ship operations. The blockage caused by the grounding of the Ever Given demonstrates to cyber-competent terrorists or adversaries the potential for disruption if they are able to manipulate or disrupt transit mechanisms from the ships themselves, their containers’ content, and pilotage management systems. Even basic electricity supplies for locks such as those in the Panama Canal offer disruption options to a world of bad actors who have already demonstrated a willingness to attack critical infrastructure. The 900-kilometer-long Malacca Strait carries 40 percent of the world’s maritime trade, including a quarter of the globe’s seaborne oil supplies and 80 percent of the Middle East’s oil and gas supplies to China. Traffic congestion is its major challenge, particularly where the strait narrows to just 2.7 kilometers wide near Singapore. In addition to posing a lucrative target, these chokepoints also afford the opportunity, both from shore and through remote means, for potential bad actors to track particular ships, owners’ fleets, crew, content, origin, destination nationalities, or missions in order to select targets. These risks are aggravated as ships and systems rely increasingly on automation. Fully autonomous ships are a stated goal of the industry and the U.S. Navy. Such systems should include proper cyber security. Ships and Cyber Security Still Strangers In 2018, security researchers at Pen Test Partners found vulnerabilities in electronic chart display and information systems commonly used on cargo and container ships. These chart systems are often linked to GPS-guided autopilots, which when exploited give hackers the ability to access the operational technology of the ship: If networks are not segregated, hackers can remotely manipulate the ship’s steering, ballast pumps, and navigation. The electronic charting system is often slaved directly to the autopilot on many ships, causing the ship to automatically follow the charted course. Hackers can redirect the ship’s course by planting false information messages via satellite communications in order to mislead navigational decisions. Many satellite communications terminals on ships are available on the public internet with default credentials and can be hacked remotely. Numerous other paths can also prove useful vectors in the cyber attack of a vessel. For example, the 2018 research also showed that the electronic charting systems on some ships were still using relic operating systems with many known major vulnerabilities, such as Windows NT, often because these are expensive to upgrade. Even when malicious control is discovered, as the cliché goes, it can be very difficult to regain control in a timely manner. Commercial ship networks tend to have flat network architectures that are originally unsegmented networks without firewalls or other cyber security measures as part of their architecture. Once inside such networks, it is not difficult to travel around across the systems of the entire ship. Internal systems often use manufacturer default passwords, not just on firewalls but also on the critical programmable logic controllers running systems, as well as satellite communication equipment. Researchers have identified other vulnerabilities in computer-security forums, such as using the ship’s satellite terminal as a point of penetration. The terminal opens the system itself to attackers replacing the poorly secured firmware or simply reverting to an even less secure previous version, and then altering the applications running the terminal. Similar research results have produced similar concerns. Access in — whether through the electronic charting system, the satellite communications terminal, or any other outward-facing communications — means the ability to control critical ship systems covertly and use the massive bulk for any reason the attacker desires. At the outset some experts suggested that the Ever Given grounding was a cyber incident. When the voyage data recorder was examined, this speculation was shown to be wrong in this case. However, as long-time cyber control systems expert Joe Weiss noted, the potential for cyber disruption still exists. Despite the ship’s relative youth, the latest marine electronics likely installed for control and navigations do not resolve the vulnerabilities discussed earlier. The recent DefCon exercise is not a one-off example of success in simulated seahacking. Concurrent with the actual grounding of the Ever Given, a team of doctoral students competed in a NavalX “Hack the Machine” exercise — using the same “Grace” maritime system as DefCon — in order to determine if “hackers” could successfully attack maritime systems remotely through a cloud network. The team succeeded, “hacking and crashing the [fictional ship’s] cyber security monitoring system.” These oversights are major safety and security issues currently left unaddressed. One reason is a gap in crew skills and the costs of maintaining cyber secure systems while underway. Leaving poor default administrative passwords on essential systems means that attackers can take control of those systems. Shipping as a Cyber Campaign Weapon Attackers will not ignore the opportunities presented by poor maritime cyber security. A cyber campaign can provide a good enough return on investment in either economic or political benefits to make it attractive, and possibly even lucrative. American adversaries such as China, Russia, and Iran learn from these exploits and integrate them in larger cyber-enabled campaigns. Russia, for example, has spoofed a ship’s GPS at least 7,910 times between 2016 and 2019, affecting about 1300 commercial ships. In 2017, North Korean navigation jamming was said to be behind the forced return of hundreds of South Korean fishing vessels, and its cyber attacks led to the devastating NotPetya attacks that crippled the large Maersk shipping line the same year. In July 2021, Sky News reported the acquisition of documents said to originate from an Iranian offensive cyber unit called Shahid Kaveh, which is part of the Islamic Revolutionary Guard Corps cyber command. They present research on how to sink a cargo ship using cyber techniques and include details on the satellite communications systems used in the global shipping industry. The routine hacking of ships from space is coming. Currently the Global Navigation Satellite System constellation includes the American-run GPS, the Russian GLONASS, the European Union’s GALILEO, Japan’s QZSS, China’s BeiDou, and the Indian system known as NAVIC. Each nation’s ships tend to use their own national system. No nation’s commercial ships are as secure as necessary today, and they lag in securing the shipboard systems in the near and medium term. There is some talk of using older but functional radio wave technology as a more secure alternative to satellite-based systems, but the discussions are only just beginning. It is questionable how rapidly or widely alternatives such as eLORAN will spread. It will take investment and a sense of urgency on cyber security from major shipbuilding firms and shipping lines to accomplish this. As one researcher states, “[Electronic charting] systems pretty much never have anti-virus.” The anti-virus industry that protects land-based personal computers in the United States and Europe started over 30 years ago, but a multitude of huge ships launched during that time with complex computer architectures contain only basic cyber protection. U.S. and allied warships — as well as most of the world’s exporting economies — plan on free transit through the Suez Canal and other chokepoints. Iranian intelligence services have collected maps, means, and incentive to use maritime cyber weaknesses for Iranian campaigns. In the mid-1990s, Osama bin Laden’s al-Qaeda group experimented with a variety of attempted attacks using public transit, notably in Paris. Six years later al-Qaeda used commercial airliners against the Twin Towers in New York City on Sept. 11. The maritime cyber environment is abysmally insecure. The technical means to exploit these ships is well distributed across land-based hackers with no prior maritime systems experience. It doesn’t take much to mess with a passing ship. The opportunities are well-known, from the chokepoints and the ship dependence on external networks, clouds, and satellite navigation communications. The motivation is as varied as the adversary, ranging from the ransomware criminal, to the “just because they can” opportunist, to the state adversary and its proxies.

#### Ukraine means that attacks on megaships ensure escalation between the US and Russia

Borger 2/13/22, Reporter forn the Guardian. (Julian, Ukraine crisis: miscalculation could trigger unintended wider conflict, https://www.theguardian.com/world/2022/feb/13/ukraine-crisis-miscalculation-could-trigger-unintended-wider-conflict)

The unprecedented Russian military encirclement of Ukraine has not only brought closer the prospect of a devastating war in that country, it has also raised the risks of triggering an unintended wider conflict. The US and Nato have been adamant that their troops will not enter Ukraine no matter what happens, and the Pentagon has pulled out the 160 national guard soldiers who were acting as military advisers. This image provided by The White House via Twitter shows President Joe Biden at Camp David, Md., Saturday, Feb. 12, 2022. Biden on Saturday again called on President Vladimir Putin to pull back more than 100,000 Russian troops massed near Ukraine’s borders and warned that the U.S. and its allies would “respond decisively and impose swift and severe costs” if Russia invades, according to the White House. (The White House via AP) Biden warns Putin: you’ll pay a heavy cost if you attack Ukraine Even during the cold war, Washington and Russia made sure their forces did not clash, and Joe Biden has made clear he would seek to keep it that way. “That’s a world war when Americans and Russia start shooting at one another,” Biden said. However, the massing of Russian troops in Belarus and the deployment of a substantial Russian naval force in the Black Sea, matched on a smaller scale by Nato land, sea and air reinforcements on the alliance’s eastern flank, means there is far more military hardware in close proximity than is normal. And with proximity comes the increased danger of accidents and unintended consequences. “The risk of something going down like a mid-air collision, or a trigger-happy Russian or American, can really escalate things quickly,” said Danny Sjursen, a former army major and director of the Eisenhower Media Network. “You’re setting yourself up for accidents and miscalculation, and that’s when you can get out of control real quick, because there are domestic considerations both in Russia and in the United States. An American pilot dies – now what? I’m not saying that necessarily means we go to cataclysmic nuclear war but it escalates things.” The US national security adviser, Jake Sullivan, told CBS News on Sunday that the US had sought to be transparent about its troop deployments in eastern Europe in order “to avoid mistake, miscalculation or escalation and also to send a very clear message to Russia we will defend every inch of Nato territory”. There is a long history of close encounters over the Baltic and Black Seas. Earlier this month US jet fighters scrambled to intercept Russian warplanes operating close to Nato airspace while British and Norwegian planes took off to monitor Russian aircraft flying into the North Sea. While Russia has shut off large parts of the Black Sea to conduct its manoeuvres, Nato navies have stayed out of the immediate vicinity for now, while building up their presence in the Mediterranean. If they do decide to go through the Bosphorus in a show of strength, or to safeguard commercial shipping, the risk will rise again. Elisabeth Braw, a senior fellow at the American Enterprise Institute, said the danger was further heightened by Russia’s suspected use of “GPS spoofing”, interference with the navigational equipment of other vessels. On several occasions recently, civilian ships traveling in the Black Sea have encountered mysterious GPS troubles that showed the vessels being in a different part of the Black Sea or even on land. It was widely though the incidents were caused by Russia testing its technology. “It raises the risk for naval vessels that are in the Black Sea, which we should remember is not that big, and it’s crowded,” Braw said. “There’s enormous shipping activity in the Black Sea, and so all those crews face the risk of having no GPS.” The transfer of combat troops from Russia’s far east to Belarus has not only significantly increased the imminent threat to Ukraine, but also made eastern European Nato members increasingly nervous. “The closest training ranges in Belarus are 150 to 200km from Vilnius or Warsaw,” said Kristjan Mäe, the head of the Nato and EU department at Estonia’s ministry of defence. “This is a Russian force posture that hasn’t been there previously.” A refugee crisis at the Polish-Belarus border last year led to a close encounter between the troops facing each other, with Warsaw complaining that Belarus forces opened fire in the direction of their soldiers. “We have to remember that the people who are actually out on the frontline are very young men and women and they face enormous responsibility,” Braw said. “Yes there is a chain of command but if there is some sort of provocation or aggression, intentional or unintentional, that is directed against them, then they have to respond.” The close encounters so far have occurred in peacetime. In the event of war, nerves will be far more on edge, communications could be hampered or flooded with disinformation. “We cannot be entirely confident that in the lead-up to or during a conflict that Nato and Russia will be able to communicate, especially as current civil and military communication systems between them are not as robust or technically resilient as they should be,” Sahil Shah, a policy fellow at the European Leadership Network, said. “The world’s two largest nuclear-armed states have returned to the brink of conflict exactly 60 years after the Cuban missile crisis. If diplomacy is not pursued to the fullest extent, the risks of miscalculation and miscommunication could potentially pull in wider Europe into a devastating war. Without dialogue on how to manage de-escalation, it will be as if our leaders are running into a monsoon with newspapers over their heads.”

#### US-Russia escalation over Ukraine causes extinction

Helfand 2-8-2022, MD, is Immediate Past President of the International Physicians for the Prevention of Nuclear War, recipient of the 1985 Nobel Peace Prize, and cofounder and past president of Physicians for Social Responsibility, IPPNW’s US affiliate. He has published studies on the medical consequences of nuclear war in the New England Journal of Medicine, the British Medical Journal, and the World Medical Journal. (Ira, “Ukraine and the Threat of Nuclear War,” *The Nation*, <https://www.thenation.com/article/world/ukraine-russia-nuclear-threat/>)

As the crisis in Ukraine deepens, it is appropriate to consider what the actual consequences of war there might be. An armed conventional conflict in Ukraine would be a terrible humanitarian disaster. Last week, US government officials estimated that the fighting could kill 25,000 to 50,000 civilians, 5,000 to 25,000 Ukrainian military personnel, and 3,000 to 10,000 Russian soldiers. It could also generate 1-to-5 million refugees. These figures are based on the assumption that only conventional weapons are used. However, if the conflict spread beyond Ukraine’s borders and NATO became involved in the fighting, this would become a major war between nuclear-armed forces with the very real danger that nuclear weapons would be used—and the public debate about this crisis is utterly lacking in discussion of this terrible threat. Both sides in such a conflict would, of course, begin fighting with non-nuclear conventional weapons. But as a result of advances in technology and firepower over recent decades, these weapons possess much greater range and destructiveness than earlier models, enabling them to strike high-value targets—airbases, radar stations, command centers, logistical hubs, and so on—far behind the front lines. As the losses mounted up on both sides—and if one or the other faced imminent defeat—its leaders could feel driven to employ their tactical nuclear weapons to avert such an outcome. Both US and Russian military doctrines allow for the use of tactical nuclear weapons under such circumstances. Despite reductions in nuclear forces over the last several decades, Russia still has 1,900 tactical nuclear weapons and 1,600 deployed strategic nuclear weapons. On the NATO side, France has 280 deployed nuclear weapons and the UK, 120. In addition, the United States has 100 B-61 tactical bombs deployed at NATO bases in Belgium, Germany, Italy, the Netherlands, and Turkey, and an additional 1,650 deployed strategic warheads. If even a single 100-kiloton nuclear weapon exploded over the Kremlin, it could kill a quarter of a million people and injure a million more, completely overwhelming the disaster-response capability of the Russian capital. A single 100-kiloton bomb detonated over the US Capitol would kill over 170,000 people and injure nearly 400,000. But it is unlikely that an escalating nuclear conflict between the United States and Russia would involve single warheads over their respective capitals. Rather, it is more likely that there would be many weapons directed against many cities and that many of these weapons would be substantially larger than 100 kiloton. For example, Russia’s 460 SS-18 M6 Satan warheads have a yield of 500 to 800 kilotons. The W88 warhead deployed on US Trident submarines has a yield of 455 kilotons. A 2002 report showed that if just 300 of Russia’s 1,600 deployed strategic warheads were detonated over US urban centers, 78 million people would die in the first half hour. In addition, the nation’s entire economic infrastructure would be destroyed—the electric grid, Internet, food distribution system, transportation network, and the public health system. All of the things necessary to sustain life would be gone, and in the months following this attack the vast majority of the US population would succumb to starvation, radiation sickness, exposure, and epidemic disease. A US attack on Russia would produce comparable devastation there. And if NATO were involved, most of Canada and Europe would suffer a similar fate. Still, these are just the direct effects of the widespread use of nuclear weapons between NATO and Russia. The global climate effects would be even more catastrophic. Recent studies have confirmed the predictions, first advanced in the 1980s, that large-scale use of nuclear weapons would cause abrupt, catastrophic global cooling. A war involving the full deployed arsenals of the US and Russia could loft up to 150 teragrams (150 million metric tons) of soot into the upper atmosphere, dropping average temperatures around the world as much as 18 degrees Fahrenheit. In the interior regions of North America and Eurasia temperatures would drop 45 to 50 degrees, to levels not seen since the last ice age, producing a disastrous decline in food production and a global famine that might kill the majority of humanity. Even a more limited war involving just 250 warheads in the 100 kiloton range could drop average global temperatures by 10 degrees, enough to trigger a famine unprecedented in human history, which would almost certainly bring the end of modern civilization. The enormity of the risk inherent in the current game of nuclear chicken between the US and Russia demands a fundamental change in their relation to each other, and in the equally fraught relation between the US and China. The great powers can no longer pursue a zero-sum game to see who will come out on top. It is possible that one of them will emerge on top of the heap—but the heap may well be a global ash pile. Nuclear weapons are a discrete manmade threat to the survival of our species. Their elimination could be achieved within a decade if the leaders of the nuclear-armed states were committed to doing so. And the process of negotiating a verifiable, enforceable timetable for dismantling these weapons would establish a new cooperative paradigm in international relations that would enable them to address the other, more complex existential threat posed by the climate crisis. The elimination of nuclear weapons is not some pie-in-the-sky fantasy. It is an absolute necessity for our continued survival. We have not survived this far into the nuclear era because of wise leadership, or sound military doctrine, or infallible technology. As Robert McNamara famously observed, “We lucked out. It was luck that prevented nuclear war.” A hope for continued good luck is an insane security policy. A determination to eliminate these weapons is a policy grounded in reality, and it offers us the only acceptable path forward.

### 1AC — Plan

#### The United States federal government should substantially increase its prohibitions of anticompetitive vessel sharing agreements involving the acquisition, use, and sharing of mega-ships above 10,000 TEU capacity in container shipping.

### 1AC — Solvency

#### Solvency —

#### Prohibiting agreements forces a shift away from megaships

Haralambides 19, Professor of Maritime Economics and Logistics at Erasmus University Rotterdam. (Hercules, 2019, Gigantism in container shipping, ports and global logistics: a time-lapse into the future Maritime Economics & Logistics volume 21, pages1–60, https://link.springer.com/article/10.1057/s41278-018-00116-0)

Such consolidation in an industry that is already highly concentrated is bound to take place under the increasing scrutiny of the regulator who, with the final consumer in mind, is likely to encourage more competition rather than further consolidation. If the liner shipping market thus becomes more open and competitive in the future, i.e. if alliance agreements regarding vessel sharing, investment planning, etc. are scrutinized more closely for their compatibility with competition law, as I expect, the joint filling of the ship will become more difficult and ship sizes shall by necessity decrease, together with an increase in the number of ports of call. Low prices would then be achieved through higher competition rather than big ship sizes. In such a scenario, shipping companies will be forced to provide the services their customers want, rather than the ones they find it convenient to offer. Shippers do not like too much transshipment and, if they could help it, they would like their container as close to them as possible. Reduction in ship size and more direct calls could thus follow the example of the air-transport industry. The most common jet flying across the Atlantic is not the 420-seat 747 jumbo but the 200 plus-seat Boeing 767. Eight out of 10 transatlantic planes are twin-engine craft such as the 767, its bigger brother the 777, or the various airbuses. This taste for smaller international jets reflects the fact that travellers now like to shun big international hubs such as London and New York and fly directly to their destinations. This is changing the international market into a web of direct intercontinental flights rather than one big air-bridge between London and New York.

#### A reduction in ship-size leads to a more competitive industry

Haralambides 19, Professor of Maritime Economics and Logistics at Erasmus University Rotterdam. (Hercules, 2019, Gigantism in container shipping, ports and global logistics: a time-lapse into the future Maritime Economics & Logistics volume 21, pages1–60, https://link.springer.com/article/10.1057/s41278-018-00116-0)

The impact of alliances on container shipping and ports I just stated that the gigantism in shipping has been induced by both port competition and shipping alliances. Indeed, without the ability to use each other’s ships, no carrier alone would be able to achieve a capacity utilization high enough to justify the use of present day mega-ships, while at the same time offering the frequency that shippers demand. But carriers have gone a step too far: At the time of writing, three alliances carry 80% of global trade. Such consolidation, in an industry that is already highly concentrated, is bound to take place under the increasing scrutiny of the regulator who, with the final consumer in mind, is likely to encourage more competition rather than further consolidation. If this happens, i.e., if container shipping becomes more open and competitive in the future, and alliance agreements regarding vessel sharing, investment planning, etc. are scrutinized more closely for their compatibility with competition law, as I expect, the joint filling of the ship will become more difficult and ship sizes shall by necessity decrease, together with an increase in the number of ports of call. Low prices would then be achieved through more competition rather than big ship sizes. This is more so when it is doubtful if the economies of scale in shipping are passed on to the final consumer, as required by the consortia block exception from the provisions of competition law in Europe.Footnote51

#### Enforcement in shipping is effective and ensures compliance

Consadine 21, Attorney with Seward & Kissell LLP. (Michael, Shipping Companies Beware: Antitrust Challenges Ahead as DOJ Focuses On Industry, <https://www.sewkis.com/publications/shipping-companies-beware-antitrust-challenges-ahead-as-doj-focuses-on-industry/>)

In response to U.S. President Joseph Biden’s July 9, 2021 Executive Order to enhance competition and antitrust enforcement, the U.S. Federal Maritime Commission (“FMC”) entered into a Memorandum of Understanding (“MOU”) with the Antitrust Division of the U.S. Department of Justice (“DOJ”) to facilitate criminal investigations of violations of U.S. laws. Given that shipping companies and their employees may be separately charged by DOJ regardless of their physical location and face draconian penalties upon conviction, it is incumbent for all shipping companies – foreign and domestic – to monitor these recent developments and take steps to minimize the likelihood of harmful consequences, including by establishing or enhancing existing compliance programs.

#### Private antitrust action is necessary to deter international collusion

Lande 16, Professor of Law at the University of Baltimore School of Law, Director of the American Antitrust Institute. {Robert; Spring 2016; Antitrust, “Class Warfare: Why Antitrust Class Actions Are Essential for Compensation and Deterrence,” <https://scholarworks.law.ubalt.edu/cgi/viewcontent.cgi?article=2019&context=all_fac>)

OUR RECENT EMPIRICAL STUDIES demonstrate five reasons why antitrust class action cases are essential: (1) class actions are virtually the only way for most victims of antitrust violations to receive compensation; (2) most successful class actions involve collusion that was anticompetitive; (3) class victims’ compensation has been modest, generally less than their damages; (4) class actions deter significant amounts of collusion and other anticompetitive behavior; and (5) anticompetitive collusion is underdeterred, a problem that would be exacerbated without class actions. Recent court decisions undermine class action cases, thus preventing much effective and important antitrust enforcement.1 Class Actions Are Virtually the Only Way for Most Victims of Federal Antitrust Violations to Receive Compensation The antitrust statutes provide that violations result in automatic treble damages for the victims.2 The legislative history 3 and case law indicate that compensation of victims is a goal, perhaps the dominant goal, of antitrust law’s damages remedy.4 Class actions play an essential role in ensuring that the treble damages remedy serves its intended function of “protecting consumers from overcharges resulting from price fixing.”5 As the Supreme Court noted, “[C]lass actions . . . may enhance the efficacy of private [antitrust] actions by permitting citizens to combine their limited resources to achieve a more powerful litigation posture.”6 Accordingly, “courts have repeatedly found antitrust claims to be particularly well suited for class actions . . . .”7 Without class actions, cartels and other antitrust violators that inflict widespread economic harm would have little to fear from the treble damages remedy. This is because, as a practical matter, class action cases are virtually the only way for most victims of anticompetitive behavior to receive compensation.8 A 2013 study that Professor Joshua Davis and I conducted documents the benefits of private enforcement by analyzing 60 of the largest recent successful private U.S. antitrust cases (defined as suits resolved since 1990 that recovered at least $50 million in cash for the victims9 ). These actions returned a total of $33.8–$35.8 billion in cash to victims of anticompetitive behavior.10 These figures do not include products, discounts, coupons, or the value of injunctive relief or precedent—only cash.11 Consequently, these totals significantly understate the actual benefits of this litigation to the victims involved. And, of course, this study covered only 60 suits (albeit 60 of the largest private recoveries) out of the many hundreds of private cases filed in the United States during this period. Of these 60 large private cases, 49 were class action suits.12 These cases recovered a total of $19.4–$21.0 billion—the majority of the amount analyzed in our study.13 Since these were among the largest private actions ever filed, specific conclusions based upon these results may not generalize perfectly to all class action cases. They do suggest, however, that without class action cases, effective and significant victim compensation would be reduced dramatically. Most Successful Class Actions Involve Collusion that Was Anticompetitive Almost every private antitrust case that results in a remedy does so through a settlement,14 so the underlying merits of the plaintiffs’ claims usually have not been definitively assessed by a court or jury. Critics sometimes use this fact to support assertions that class actions usually are meritless, that plaintiffs often receive huge sums from cases not involving anticompetitive conduct, and that private antitrust actions often amount to legalized blackmail or extortion.15 Antitrust class actions arise in widely varied market and factual settings, and views about the merits of specific cases and the litigation risks involved vary as well. This makes it extremely difficult to draw objective conclusions about the merits of settlements. Nevertheless, there are good reasons to believe that the vast majority of class action cases in the Davis/Lande study involved legitimate claims. Forty-one of the 49 class actions involved allegations of collusion,16 and the same conduct supporting the settlements gave rise to criminal penalties in 20 cases; to civil relief by the FTC or DOJ in 8 cases; to civil relief by a state or other governmental unit in 9 cases; to a trial that the defendants lost and that was not overturned on appeal in 7 cases; to a class being certified in 22 cases; and to plaintiffs surviving or prevailing at summary judgment in 12 cases.17 Overall, 44 of the 49 class action suits (90 percent) exhibited at least one of these forms of legal validation as to their merits. (The 5 actions that did not have at least one of these indicia settled too early for a substantive evaluation of their merits).18 These results are broadly consistent with a finding that Professor John Connor derived from an analysis of 130 private recoveries worldwide in international cartel cases for which he could obtain the necessary data.19 He found that of the 50 largest worldwide settlements, measured by their monetary recoveries in constant dollars, 49 had been filed against international cartels.20 Of these, 51 percent were follow-ups to successful DOJ prosecutions, and another 8 percent were filed after fines by the EC or other non-U.S. antitrust authorities.21 Using a different data set, Connor and I found that 36 of 71 (also 51 percent) successful U.S. class action recoveries followed successful DOJ criminal cases.22 This data does not prove that these or any other specific class action cases involved anticompetitive conduct. But critics who assert that most antitrust class actions are little more than legalized blackmail rely only on anecdotes, hypotheticals, and opinions (often of defendants in the cases), without support from studies, and with no reliable empirical evidence that the actions lack merit or that settlement amounts are excessive compared to the anticompetitive harm.23 To be fair, one should compare the above indicia of validity to the absence of any systematic evidence underpinning the critics’ charges. Critics also sometimes assert that remedies typically secured in class action settlements are at best dubious and often are completely worthless, consisting of useless coupons, meaningless discounts, and obsolete products. They argue with regard to cash payments (without providing even a single anecdote) that “issuing [class members] a check is often so expensive that administrative costs swallow the entire recovery.”24 According to many critics the only ones to benefit from private enforcement are the attorneys involved.25 The critics who make these charges, however, never offer evidence beyond opinions, hypotheticals, and occasional anecdotes. Indeed, for the 49 antitrust class action cases that Davis and I studied, the data show that, overall, only a total of approximately 20 percent of the recoveries went for attorney fees (14.3 percent) or claims administration expenses (4.1 percent).26 The rest was returned to the victims. This result is consistent with older estimates of legal fees in antitrust class action cases in the 6.5 to 21 percent range.27 Critics also sometimes examine what happened in other areas of law and assert that these outcomes occur in contemporary antitrust class action suits as well. But they never offer systematic evidence from antitrust cases to support their opinions.28 Interestingly, only one of the lawsuits in the Davis/Lande study involved a coupon remedy—the Auction Houses cases. However, those coupons were fully redeemable for cash if they were not used for five years.29 The actions Davis and I studied were among the largest antitrust class actions ever brought and therefore might not be representative of class action cases in general. Abuses surely occur from time to time in class action cases, as they do almost everywhere in the legal system. But a majority of the critics’ most egregious examples are from other areas of law or are quite old.30 No one has ever presented reliable evidence showing that such examples occur frequently or are typical of contemporary antitrust class action cases.31 Class Victims’ Compensation Has Been Modest, Generally Less than Their Damages Even though the $19.4–$21.0 billion that Davis and I showed had been returned to victims in 49 class action cases is a significant figure when viewed in absolute terms, it probably was not nearly enough to fully compensate all of the victims involved. To ascertain “Recovery Ratios” (the percentage of the illegal overcharges that was obtained in the form of monetary payments to victims in private actions), Professor Connor and I assembled a sample consisting of every completed private case against cartels discovered from 1990 to mid-2014 for which we could find the necessary information. For each of these 71 cases we assembled neutral scholarly estimates of affected commerce and overcharges and compared these estimates to the damages secured in the private actions filed against these cartels.32 The victims of only 14 of the 71 cartels (20 percent) recovered their damages (or more) in settlement. Only seven (10 percent) received more than double damages. The rest— the victims in 57 cases—received less than their damages. In four cases, the victims received less than 1 percent of damages, and in 12 cases they received less than 10 percent of damages. Overall, the median average settlement was 37 percent of single damages. The unweighted mean settlement (a figure that gives equal weights to the cartels that operated in large and small markets) was 66 percent. The mean and median average Recovery Ratios are higher (81 percent and 52 percent, respectively), for the 36 cases that were follow-ups to DOJ prosecutions that imposed criminal sanctions.33 Because these Recovery Ratios do not include any valuations of products, discounts, coupons, or the value of injunctive relief or precedent, the actual worth of these remedies to the victims is greater than the figures reported above. Nevertheless, it fairly can be concluded that antitrust class action cases often return important recoveries to victims that are significant in absolute terms, but usually are modest when measured against the sizes of the overcharges involved. Class Actions Deter Significant Amounts of Collusion and Other Anticompetitive Behavior Private class action cases serve to deter a substantial amount of anticompetitive activity, perhaps even more than the highly acclaimed anti-cartel program of the U.S. Department of Justice, which often results in prison sentences for cartel participants.34 Virtually every contemporary analysis of antitrust enforcement assumes that deterrence is an important purpose of the private treble damages remedy provision.35 The Supreme Court has underscored this point. For example, in Reiter v. Sonotone Corp., the Court explained: Congress created the treble-damages remedy of § 4 precisely for the purpose of encouraging private challenges to antitrust violations. These private suits provide a significant supplement to the limited resources available to the Department of Justice for enforcing the antitrust laws and deterring violations.36 The government, however, cannot be expected to do all of the necessary enforcement for a number of reasons, including budgetary constraints, “undue fear of losing cases; lack of awareness of industry conditions; overly suspicious views about complaints by ‘losers’ that they were in fact victims of anticompetitive behavior; higher turnover among government attorneys; and the unfortunate, but undeniable, reality that government enforcement (or non-enforcement) decisions are, at times, politically motivated.”37 A recent study highlights the deterrence benefits of private enforcement by comparing the likely deterrent effects of private antitrust enforcement to that of criminal anti-cartel enforcement by the Antitrust Division.38The surprising result is that private enforcement—and even just antitrust class action cases considered separately—probably deters more anticompetitive behavior. From 1990 through 2011 the total of DOJ corporate antitrust fines, individual fines, and restitution payments totaled $8.2 billion. (Dis)valuing a year of prison or house arrest at $6 million39 adds another $3.6 billion in total deterrence from the DOJ’s anti-cartel cases, yielding a total of approximately $11.8 billion. This is a substantial figure, and the possibility of incurring such sanctions surely has deterred a significant number of would-be antitrust violators.40 Nevertheless, these penalties amount to approximately 50 percent of the $19.4–$21.0 billion in cash alone (not including products, etc.) secured by just the 49 studied class cases that were completed during the same period.41 These private cases were only a portion of the hundreds of successful class action cases completed during this period (albeit they were many of the largest).42 The total amount of payouts in class action cases is so high that it probably deters more anticompetitive conduct than even the DOJ’s anti-cartel enforcement efforts.

#### Empirics prove antitrust enforcement deters cartelization

Bos et al 15, Professor of Economics Department of Organisation and Strategy Maastricht University. (Iwan, with Stephen Davies Centre for Competition Policy & School of Economics University of East Anglia and Peter L. Ormosi Centre for Competition Policy & Norwich Business School University of East Anglia, , The deterrent effect of anti-cartel enforcement: A tale of two tails <https://ueaeco.github.io/working-papers/papers/ccp/CCP-14-06v2.pdf>)

The empirical contribution of this paper derives from a novel comparison of the distributions of overcharge observed for cartels between jurisdictions which did and did not prohibit cartels. It shows that the distribution for legal cartels has significantly more mass in its tails than does the distribution for illegal cartels. This finding is robust to controlling for the time period in which the cartels occurred and the perceived quality of the sources of the data. We suggest it has two potential explanations, not necessarily mutually exclusive. It may be that anti-cartel law is most effective in deterring very low or very high overcharge cartels, or it may be that such cartels are least likely to be detected in a world where cartels are illegal. The remainder of the paper is designed to distinguish which of these potential explanations is more likely. To do this, we present a fairly general theoretical model which is representative of the previous literature on cartel formation. This establishes the conditions under which we can deduce that its is deterrence which drives the empirical result. We argue that only relatively weak assumptions are required: in essence, low-overcharge cases are deterred by fines which have (at least partly) a fixed element, while high-overcharge cases, in the face of a higher probability of detection, either moderate their overcharge to lessen the likelihood of detection and lower the expected penalty (composition deterrence), or entirely abandon the cartel (frequency deterrence) because incentives become incompatible. This has some potentially important implications. In the previous literature, evidence on the nature of detected cartels has been widely used as a key source of information about the nature of collusion in the real world. But it now needs to be underlined that this evidence emanates only from cases which are not deterred, and are detected, by active anti-cartel enforcement policy. In that this ignores cases 21 which are deterred, it may seriously underestimate the welfare-enhancing impact of policy, especially insofar as it is the most harmful cases which are most likely to be deterred.18 This also raises doubts about conventional empirical wisdoms on the structural factors which are conducive to collusion. The evidence of this paper is confined to overcharge, but it is not unlikely that overcharge will be related to the structure of the cartel (number and asymmetries of members, duration, etc). If so evidence from previous studies on the structure and stability of cartels may require revisiting.

#### Shipping antitrust enforcement effectively deters

Smith 22, Attorney Reed Smith LLC. (Reed Smith, Antitrust insights in shipping – recapping 2021 and preparing for 2022, https://www.reedsmith.com/en/perspectives/2022/01/antitrust-insights-in-shipping-recapping-2021-and-preparing-for-2022)

In the same month that EO 14036 was issued, the FMC and the Antitrust Division of the Department of Justice (DOJ) entered into a memorandum of understanding relative to “Cooperation with Respect to Promoting Competitive Conditions in the U.S.-International Ocean Liner Shipping Industry.” The agencies agreed to share information “for the purpose of improving each agency’s effectiveness in carrying out its respective legal responsibilities.” They also agreed to confer, at least annually, to address law enforcement, regulatory, and other matters related to competitive conditions in the international ocean liner shipping industry. This is the first-ever agreement of this nature between the two agencies. Importantly, unlike the FMC, the DOJ has criminal enforcement capabilities. Specifically, the DOJ has jurisdiction to enforce U.S. antitrust laws not only against domestic business activities but also against foreign business activities that have a substantial and intended effect in the United States, up to and including criminal prosecution. In recent years, the DOJ has indicted a foreign ocean liner shipping company and its executives in relation to a conspiracy regarding allocation of customers and routes, bid rigging, price fixing, and other anticompetitive conduct in the international roll-on, roll-off ocean shipping industry, resulting in guilty pleas, hefty fines, and prison time for individuals, not just for the company and its executives, but also for four other competitors that were found to have participated in the conspiracy. The DOJ’s prosecutions followed a European Union antitrust probe into the container line shipping industry, which was resolved in 2016 when 14 companies entered into legally binding commitments to increase price transparency for customers and reduce the likelihood of coordinating prices. The FMC, on the other hand, has jurisdiction to investigate and sanction ocean carriers that implement unfair and unreasonable practices in violation of the U.S. Shipping Act. Specifically, the FMC brings enforcement actions and issues civil penalties against ocean carriers; the FMC also adjudicates private party actions brought by cargo owners and awards reparations. The FMC has intensified its efforts to use these tools against ocean carriers, in particular in relation to their demurrage and detention practices during the COVID-related port congestion crisis. The most recent illustrations are three policy statements issued by the FMC last month to encourage shippers to file private party complaints against ocean carriers, either individually or collectively, and to protect them from retaliation and attorney fees awards when such actions were brought in good faith. In one of these statements, the FMC recognized that private actions are important to alert the agency of potential violations and to deter

[marked]

unfair and unreasonable conduct by carriers.

#### \*\*Ocean shipping reform is progressing through Congress — Ocean Shipping Reform Act

Berman 4-4-2022, group news editor for Logistics Management, Modern materials Handling, and Supply Chain Management Review. (Jeff, 4-4-2022, “U.S. Senate approves Ocean Shipping Reform Act, bill to head to conference”, Logistics Management, [https://www.logisticsmgmt.com/article/u.s.\_senate\_approves\_ocean\_shipping\_reform\_act\_bill\_to\_head\_to\_conference accessed 4-8-2022](https://www.logisticsmgmt.com/article/u.s._senate_approves_ocean_shipping_reform_act_bill_to_head_to_conference%20accessed%204-8-2022))

The Ocean Shipping Reform Act (OSRA) took another step on its course to being signed into law, with the United States Senate late last week unanimously voted to sign off on it on a voice vote.

The bill will head back to the House of Representatives, with the expectation it will head to President Biden’s desk to be signed into law, following conferencing between the House and Senate on differences that need to be hammered out between the chambers.

This represents the most recent sign of progress for the OSRA, getting bipartisan approval from United States Senate Committee on Commerce, Science, and Transportation on March 22 and OSRA being passed in December 2021 by the United States House of Representatives by a convincing 364-40 vote and its subsequent introduction into the Senate in February by Senator Amy Klochubar (D-Minn.) and Senator John Thune (R-S.D.).

The House version of the bill was introduced by Representatives John Garamendi (D-CA) and Dusty Johnson (R-SD) in August, with the objective of making the Federal Maritime Commission (FMC) “a more effective federal regulator.”

Key components of the Ocean Shipping Reform Act of 2021 include:

requiring ocean carriers to certify that late fees —known in maritime parlance as “detention and demurrage” charges—comply with federal regulations or face penalties;

shifting burden of proof regarding the reasonableness of “detention or demurrage” charges from the invoiced party to the ocean carrier;

prohibiting ocean carriers from unreasonably declining shipping opportunities for U.S. exports, as determined by the FMC in new required rulemaking;

requiring ocean common carriers to report to the FMC each calendar quarter on total import/export tonnage and 20-foot equivalent units (loaded/empty) per vessel that makes port in the United States;

authorizing the FMC to self-initiate investigations of ocean common carrier’s business practices and apply enforcement measures, as appropriate; and

establishing new authority for the FMC to register shipping exchanges

#### \*\*Maersk was subpoenaed by the DOJ

Dixon 3-17, is a general assignment reporter at Law360. (Gracie, 3-17-2022, “DOJ Subpoenas Shipping Giant Maersk Amid Antitrust Focus,” Law360, https://www.law360.com/articles/1474850/doj-subpoenas-shipping-giant-maersk-amid-antitrust-focus)

The U.S. Department of Justice has subpoenaed Maersk, the Danish shipping giant confirmed Friday, a move in line with President Joe Biden's State of the Union promise to "crack down" on rising ocean freight shipping costs following the industry's rapid consolidation. The subpoena for A.P. Moller Maersk comes less than a month after the White House announced a concerted effort by the DOJ and the Federal Maritime Commission to ensure that three global alliances that have come to dominate ocean carrier freight shipping in the past decade are complying with competition laws. According to a Maersk spokesperson, the subpoena is part of the DOJ's ongoing investigation into supply chain disruption. "We have not seen evidence of any actual or alleged wrongdoing on the part of Maersk and will continue to cooperate with the U.S. Department of Justice as they continue their investigation," the spokesperson added. The White House had outlined concerns that spot rates for freight shipping between the U.S. and Asia have jumped 1000% since January 2020, while the container shipping industry pulled in $190 billion in profits last year, a seven-fold increase from 2020, in a fact sheet issued ahead of the State of the Union address. "Right now, three global alliances, made up entirely of foreign companies, control almost all of ocean freight shipping, giving them power to raise prices for American businesses and consumers, while threatening our national security and economic competitiveness," the White House said in the Feb. 28 statement. Ocean freight carriers enjoy a degree of protection from antitrust measures under The Shipping Act of 1984 and The Ocean Shipping Reform Act of 1988. The statutes give antitrust cover to ocean carriers' agreements on shipping rates, pooling arrangements and allotted routes if approved by the FMC, which regulates carriers. But the White House shared concerns that as the three alliances' control of the global container ship capacity ratcheted up from 30% to 80% since 2011, these protections have enabled the dramatic price hikes. The White House added that ocean carriers are now able to cancel or change bookings and impose additional fees without notice, often effectively refusing to take American exports altogether. Under the cross-agency initiative, the DOJ will provide attorney and economists' support for enforcement of Shipping Act violations, and the FMC will provide the Antitrust Division with maritime industry expertise for enforcement efforts as well. The rapid consolidation and rising prices have also garnered Congressional attention. The Subcommittee on the Coronavirus Crisis and the Subcommittee on Economic and Consumer Policy jointly requested information from ocean freight carriers Maersk, CMA CGM Group and Hapag-Lloyd AG regarding dramatic price increases and reports of exorbitant fees and surcharges in early March. "We are deeply concerned that [Maersk, CMA CGM, and Hapag-Lloyd] may have engaged in predatory business practices during the pandemic, making scores of essential goods needlessly expensive for consumers and small businesses," Chairmen Rep. James E. Clyburn, D-S.C., and Rep. Raja Krishnamoorthi, D-Ill., said in a statement at the time. The Ocean Shipping Antitrust Enforcement Act, a bipartisan bill introduced by Rep. Jim Costa, D-Calif., on Feb. 28 would walk back several antitrust exemptions currently in place for ocean freight carriers. And members of the Senate Commerce, Science and Transportation Committee held a hearing March 3 to consider the Ocean Shipping Reform Act, a separate bipartisan bill that would strengthen the FMC's oversight authority and ability to hear complaints against carriers.

# 2AC

## Adv---Mega Ships

### 2AC---US-Russia

#### No-fly zone causes nuclear escalation

Fisher 3-16-2022, international reporter and columnist for The New York Times. (Max, 3-16-2022, “As Russia Digs In, What’s the Risk of Nuclear War? ‘It’s Not Zero.’”, *New York Times*, <https://www.nytimes.com/2022/03/16/world/europe/ukraine-russia-nuclear-war.html> accessed 3-16-2022)

Escalation Risks “The escalation dynamics of a conflict between the U.S. and Russia could easily spiral into a nuclear exchange,” said Dmitry Gorenburg, an analyst of Russian military policy. Partly this is because, unlike Cold War proxy battles, Ukraine’s war is raging in the heart of Europe, with NATO and Russian forces massed a relatively short drive away from Moscow and several Western capitals. Partly it is because of Russia’s lowered nuclear threshold and heightened sense of vulnerability. But Moscow also seemingly believes that a sort of NATO-Russia conflict has already begun. Russian strategic doctrine is designed in part around a fear that the West will foment economic and political unrest within Russia as prelude to an invasion. With Putin now facing economic devastation and rising protests, “a lot of the pieces of their nightmare are already coming together,” said Samuel Charap, who studies Russian foreign policy at the Rand Corp. In these circumstances, Moscow could misconstrue NATO’s troop buildup or steps of military support for Ukraine as preparations for just the sort of attack that Russian nuclear policy is designed to meet. “Between volunteers from NATO countries, all this NATO weaponry, reinforcement of Poland and Romania,” Charap said, “they might connect dots that we didn’t intend to be connected and decide they need to preempt.” In such a climate, a few mishaps or miscalculations — say, an errant strike or clumsy provocation by one side that sets off a stronger-than-expected retaliation by the other — could escalate, in only a few steps, to the point of triggering Moscow’s fears of an attack. Putin has already said that direct Western intervention in the Ukraine war might trigger Russian nuclear retaliation. Now each uptick in Western support for Ukrainian forces tests those limits. “Part of our problem is that I’m not sure we have a clear sense of exactly where the lines are,” Gorenburg said. “This is why we’re seeing all the hemming and hawing back and forth with the question of providing aircraft. There’s just uncertainty as to how the Russians would take that.” Kühn, the German analyst, worried that U.S. domestic politics could play a role as well. Should Russia use chemical weapons or commit some other transgression, American leaders could face overwhelming pressure to retaliate beyond what Moscow anticipates. Many in Washington are already calling for a no-fly zone or other direct intervention, arguing that U.S. warheads would deter Moscow from nuclear retaliation. But clearing Ukraine’s airspace would likely require striking air bases and anti-air defenses within Russia that also serve to defend Russia’s borders. Analysts caution that such fighting could easily spiral out of control or trigger the Kremlin’s fears of a NATO push to Moscow, leading Putin to launch a last-resort nuclear strike.

## AT: T---Private Sector = All

### 2AC---AT: Private Sector

#### Counter-interpretation---the private sector includes an industry.

The Law Dictionary N.D., (The Law Dictionary: Featuring Black's Law Dictionary Free Online Legal Dictionary 2nd Ed. “Private Sector” , <https://thelawdictionary.org/private-sector/> , date accessed 9/11/21)

What is PRIVATE SECTOR? An industry that is composed of private companies. The corporate sector and the personal sector are encompassed in the private sector and they are responsible for the allocation of the majority of resources within the economy.

#### The private sector includes subsets---refers to many different actors.

Walker and Hofstetter 16 (Katharina Walker is Advisor for vocational skills development and Helvetas’ youth focal person. Sonja Hofstetter joined Swisscontact in Cambodia in July 2016. She is the Quality Assurance Manager and Deputy Team Leader of the Skills Development Programme. “ Study on Agricultural Technical and Vocational Education and Training (ATVET) in Developing Countries” Federal Department of Foreign Affairs FDFA, Swiss Agency for Development and Cooperation SDC, Global Programme Food Security, 25.1.2016, <https://www.shareweb.ch/site/Agriculture-and-Food-Security/focusareas/Documents/ras_capex_ATVET_Study_2016.pdf> , date accessed 7/19/21)

In many developing countries, the private sector1 [[BEGIN FOOTNOTE 1]] 1 The private sector is not perceived as a homogenous mass even though the terminology might suggest this to be the case. In this study, the term “private sector” is used to circumscribe the various actors such as small and medium sized companies, large companies, sectorial associations, business associations, chambers of commerce, etc.[[END FOOTNOTE 1]] faces challenges in finding adequately skilled employees. This also holds true for sectors linked to agriculture, e.g. processing, distribution, marketing, etc. The development of ATVET from a purely productivity-oriented approach to provide broader and more specialised skills sets along agricultural value chains is likely to raise the interest of private sector actors. This incentive can result in a stronger and more sustainable financial and conceptual engagement of employers in ATVET.

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

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

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

## AT: CP---CONCON

### 2AC---ConCon

**Consensus on amendments doesn’t matter---either it’ll be evaded completely or enforcement is inevitable---won’t set a precedent.**

**Strauss 01**, \*Gerald Ratner Distinguished Service Professor of Law and Faculty Director, Jenner & Block Supreme Court and Appellate Clinic; (David A. Strauss, "The Irrelevance of Constitutional Amendments," 114 Harvard Law Review 1457 (2001), pp.1457-1478, Available Online at <http://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=2986&context=journal_articles>)

One cannot, however, just say simplistically that any set of political forces strong enough to bring about a constitutional amendment is strong enough to change society in some other way, because that is not always true. A supermajority might act, and adopt an amendment, even if society has not fundamentally changed. An amendment might represent a momentary high-water mark of popular sentiment on a question, or an effective effort by an interest group at the height of its power to secure its position." At a later time, many people, even a majority, might decide that the amendment was a mistake - but there it is, entrenched in the Constitution. On these occasions the formal amendment will be relatively insignificant for a different reason. When there is no lasting social consensus behind a textual amendment, the change in the text of the Constitution is unlikely to make a lasting difference - at least if it seeks to affect society in an important way - unless society changes in the way that the amendment envisions. Until that happens, the amendment is likely to be evaded, or interpreted in a way that blunts its effectiveness. This is, in a sense, the other side of the fact that a mature society has a variety of institutions, in addition to the text of the Constitution, that can affect how the society operates. Those institutions can change society without changing the Constitution; but they can also keep society basically the same - perhaps with some struggle, but still basically the same - even if the text of the Constitution changes. This was, most notoriously, the story of the Fourteenth and, especially, the Fifteenth Amendment. The Fifteenth Amendment was somewhat effective in the short run, but within a generation it had been reduced to a nullity in the South. 12 It does not follow that, owing to some kind of historical necessity, formal amendments cannot ever cause important changes. Rather the point is that the formal amendment process will be the means of significant change only in certain limited circumstances that hardly ever occur in a mature society. In particular, three conditions must be present for the amendment process to make a difference. First, a formal supermajoritarian amendment process is unlikely to be an important means of change unless the other usual means of change, such as legislation and judicial interpretation, are unavailable for some reason.' 3 If other means of change are available, they will probably have effected the change to a significant degree before a supermajority can be assembled to amend the Constitution. Second, a formal amendment process is likely to make a difference only when the supermajority that adopts the amendment is a temporary one that was assembled even though society had not fundamentally changed. Deep, enduring changes in society will find some way to establish themselves with or without a formal amendment - if not through legislation or changes in the composition of the courts, then through changes in private behavior. The formal amendment process will have its most significant effect when the supermajority sentiment does not persist. Finally, for an amendment to matter, it must be unusually difficult to evade. An amendment that specifies a precise rule, for example, is more likely to have an effect than one that establishes only a relatively vague norm. If its text is at all imprecise, an amendment that is adopted at the high-water mark of public sentiment will be prone to narrow construction or outright evasion once public sentiment recedes, as the Fourteenth and Fifteenth Amendments were. If all these circumstances occur together, a temporary supermajority's ability to adopt a formal amendment might bring about a permanent change that would not have occurred without the formal amendment. But this confluence of conditions is unlikely to happen very often. I suggest below one instance in which it might have happened - the Twenty-second Amendment, which limits presidents to two terms. Even that example is not entirely clear. But that may be the only occasion since the early days of the Republic when the formal amendment process seems to have made a substantial difference.

#### Far right coopts the CP---extinction.

---their text fiated calling a “limited” concon, and passing the outcome---BUT did NOT fiat what happens in between, nor could they even if they wanted to

Marcetic 18, Staff Writer at Jacobin, holds an M.A. in History from the University of Auckland (New Zealand). (Branko. 11-16-18, Can Republicans Rewrite the Constitution?”, *Jacobin*, <https://jacobinmag.com/2018/11/gop-constitutional-convention-state-legislatures-balanced-budget-amendment/>)

In coverage of the midterms, we’ve heard a lot about the House, the Senate, governorships, and even ballot measures, but almost nothing about state legislatures. That may soon change, because the Democrats’ meager gains in this department will be crucial to stopping corporate America’s next strategy to further roll back the twentieth century. The weekend before election day, a little-noticed article was run by the Associated Press, detailing plans by right-wing groups to push for a constitutional convention after the midterms to alter the United States’ founding document. This itself is nothing new: the Right has spent the past few decades pushing for just such a thing. But with a historically radical GOP in power, and with the Democratic takeover of the House frustrating right-wing congressional legislation for the foreseeable future, the next couple of years could well see the Right go all in on circumventing Congress entirely by simply rewriting the Constitution. “Having a divided Congress may cause the proponents to feel even more committed to this idea,” says Michael Leachman, senior director of state fiscal research at the Center on Budget and Policy Priorities. “They might imagine that this is the only way they’re going to win the radical changes to the Constitution that they want.” There’s good news and, obviously, bad news to this. The bad news is, this is a scary prospect that would not only be a disaster for any future left-wing project — a Bernie Sanders presidency, for example — but would severely hobble efforts to mitigate rapidly intensifying environmental collapse. The good news is, it can be stopped. But first let’s back up for a second. For the last few decades, the Right has been gradually setting the table to pass a particular constitutional amendment (more on the details below). The most familiar way of doing this is to get two-thirds of both houses of Congress to approve it, before convincing three-fourths of all state legislatures — or thirty-eight of them — to ratify it. Congress actually came perilously close to doing this in 1995, when the amendment in question failed by one vote in the Senate. Now, with Democrats controlling the House and a thinning GOP majority in the Senate, this is a non-starter. But there is another way to pass an amendment: have two-thirds of all states, or thirty-four of them, adopt resolutions calling for a constitutional convention on just this issue. The proposed measure is the fabled balanced budget amendment. While its exact mechanics differ depending on who writes the language — in some versions Congress is simply barred from raising the debt ceiling, other times a supermajority is required to do so — the basic idea is to make it extremely hard, if not impossible, for the federal government to spend more than it takes in. It’s not hard to see why this measure would be disastrous. The strict spending limit would serve as a constant, ready-made pretext to slash social spending. It would debilitate any effort to forestall catastrophic climate change, such as through unprecedented, large-scale investment in infrastructure. And it would magnify the impact of economic crises by taking away the government’s ability to stabilize the economy through spending. According to a couple of different estimates, balancing the budget in the face of the Great Recession would have sent GDP plunging by 22 percentage points and doubled the unemployment rate to 18 percent. But wait, you say. Couldn’t a future Democratic president use this to jack up taxes on the rich? The answer is, not if the Right crams through any other constitutional amendments, such as an abolition of the federal income tax or a ceiling on federal spending, making brutal spending cuts the only avenue for meeting this legal standard. The Koch-funded American Legislative Exchange Council, one of the right-wing groups most aggressively engaged in this fight, included wording that would open the door to such limits in its model legislation in 2016. And that brings us to the other terrifying thing about an Article V convention, so-named after the constitutional provision that governs it: there’s a good chance it could see the entire Constitution rewritten amid an orgy of corporate spending and lobbying. This might sound like an exaggeration, but consider that the last time a constitutional convention met was in 1787. Originally called to simply amend the Articles of Confederation that then served as the country’s supreme legal document, the convention decided to rewrite the whole thing instead. Far from “the greatest document ever written,” the 1787 constitution — “the Constitution” — was the product of mess of bickering, wheeling and dealing, and bitter compromise that initially barely passed, and some of whose authors doubted would survive more than a couple of decades. Now imagine that already chaotic, rancorous process re-done, except with an army of lobbyists with bottomless wallets deployed to put their clients’ stamp on the process. Imagine every form of legalized bribery dangled in front of hapless delegates to ensure they vote in line with corporate America, from generous campaign donations to the prospect of cushy, well-paid corporate jobs just through the revolving door. “Ethics and campaign finance rules don’t apply to these delegates,” says Jay Riestenberg, who manages Common Cause’s campaign work on this issue. “I think Article V will work similar to ALEC — corporations and legislatures sitting around the table as equals.” “This would be the mother of all opportunities for powerful interests to change the country’s Constitution,” says Leachman. In such an environment, there’s no telling how many items on the Right’s long-term wishlist would be stuffed into a new founding document. One additional possibility mentioned in the AP report is a repeal of direct election of senators by voters, rather than selection by state legislatures, another anti-democratic bulwark against the GOP’s gradually fading electoral fortunes. There’s also no telling how the rules might be tilted to ensure the Right’s agenda passes. Republican dominance of the states guarantees the party would choose most of the delegates, and there’s no legal guidance as to how such a convention is supposed to work, from drafting all the way to voting. The ratification process could even be radically changed, as in 1787, when the convention straight up ignored the existing process and decided to make ratification substantially easier. But the sky would really be the limit. When 137 state legislators got together in 2016 to simulate such a convention, some of the drafted amendments required a congressional supermajority to raise taxes, empowered three-fifths of states to nullify federal laws, let congress override regulations, and limited the commerce clause of the constitution, which has been used to authorize everything from Obamacare to the Civil Rights Act. And it’s easy to imagine even more radical amendments being made: a constitutional ban on abortion, for instance, or all manner of language limiting government power at a time when large corporations, some industries in particular, are increasingly spooked about their future bottom lines.

## AT: CP---CIL

### 2AC---CIL

#### Perm do the plan and the CP’s justification — solves precedent

Bradley 15, William Van Alstyne Professor of Law at Duke Law School, where he is a co-director of the Law School's Center for International and Comparative Law (Curtis A. Bradley, 5-18-2015, "Customary international law’s uncertain status in the US Legal System," Oxford University Press Blog, https://blog.oup.com/2015/05/customary-international-laws-uncertain-status-in-the-us-legal-system/)

Even if customary international law does not have the status of self-executing federal law, it does not mean that its role in the US legal system is unimportant. Congress can incorporate customary international law into US law, and it has done so in a number of ways, such as by codifying the standards for foreign sovereign immunity, providing a civil cause of action for acts of torture committed under color of foreign law, and allowing for criminal prosecution of acts of piracy “as defined by the law of nations.” Courts also have long applied a canon of construction – known as the “Charming Betsy canon” – whereby they will construe federal statutes, where reasonably possible, to avoid violations of customary international law. In addition, it is possible that in developing some rules of federal common law relating to foreign affairs, courts will take account of a mixture of international law and domestic law considerations, even if they do not apply customary international law directly. This may be happening, for example, with respect to the law governing the immunity of foreign government officials, something that the US Supreme Court in its 2010 Samantar decision indicated should be developed as a matter of federal common law.

#### Perm do both — it solves AND no net benefit

<<scholars and judges give a “high degree of latitude” over solutions and CIL>>

<<AT: Perm Fails: combining and anchoring concepts is an inevitable facet of international law AND CIL’s uncertain — international lawyers debate over it, lacks authoritative texts, it’s self-referential, and lacks legal culture; this is a solvency advocate for the perm>>

<<takes out spill-over and is an alt cause to their internal link>>

Kammerhofer 4, University of Freiburg - Faculty of Law (Jörg Kammerhofer, 6-1-2004, "Uncertainty in the Formal Sources of International Law: Customary International Law and Some of Its Problems," European Journal of International Law, Vol. 15, Issue 3, pp. 523-553, https://doi.org/10.1093/ejil/15.3.523)

3 Conclusion

We have reached the end of my study. The reader might feel a certain unease about what I have actually accomplished by approaching the problem in this — admittedly peculiar — fashion. It may well be argued that none of the problems I have taken up in the course of the discussion have been treated with the necessary attention they deserve and the reader might feel that the topics have merely been ‘skirted’. That is true, but a fuller discussion would neither have been economical nor was it necessary for the purpose the article was meant to fulfil. That purpose is to show the reader what uncertainty looks like and what causes it. Customary international law just happens to be a topic where uncertainties abound. The results are now in and I can draw tentative inferences from the various ‘test-trenches’ to ascertain the layout of the hidden structure called ‘uncertainty’. Uncertainty is multi-phenomenal; we have seen throughout this study that it can take many different forms. Let me remind the reader what we have seen:

(a) There is considerable disagreement amongst international lawyers as to the scope and formation (and even existence) of customary international law. While no question of law is undisputed and while international law is especially notorious in this respect, debates on customary international law have been marked with a high degree of latitude in the ‘solutions’ proposed by scholars and judges.

(b) Sometimes the law cannot be concretized in a sufficient manner to make it ‘work’ in practice. This ‘inoperationalizability’ of certain formulae which scholars happen to generally agree on can be seen clearly in the case of the quantity of state practice needed to constitute a behavioural regularity sufficient to constitute the material element.

(c) Due to the peculiar nature of customary international law as a law-making law (a formal source), we may be faced with a problem of self-referral: if customary international law’s meta-meta-level is at the same time its meta-level (i.e. if customary law were made by rules that govern their own creation) we potentially have to know the meta-law before we can ascertain what the meta-law looks like.

(d) Very often, uncertainties simply refer us to hierarchically higher — legal theoretical — questions. The difficulty of arguing for or against the relevance of acts and statements as state practice, for example, results from the unsolved question of the nature of state practice.

These are merely examples of what kinds of uncertainties may be abstracted from this article and this list is by no means exhaustive. Uncertainty is not only multi-phenomenal, but also multi-causal. Section 2 of this article served a dual purpose; not only did I intend to continue unearthing manifestations of uncertainty on the theoretical level, but I also wanted to expose some of the reasons why law — and international law in particular — is uncertain:

(a) There is a marked absence of authoritative texts regarding customary international law. While the presence of such texts may give rise to different problems — the reader will be aware of the problems of interpreting the United Nations Charter, for example — customary law is a law without authoritative texts.

(b) International law does not have a dominant theory, ideology or assumption, not even a dominant legal culture. This is perhaps the most damning of all reasons and it is certainly responsible for the high degree of academic disagreement. If it were simply taken for granted and not seriously disputed, for example, that elements x, y and z make customary international law, or that 24 instances of state practice suffice, the dominance of the theory would smother criticism. While the ‘real’ law may be different from the dominant theory, it can conveniently be ignored — as is the case with other normative systems vis-à-vis a dominant written constitution in municipal law (Sections 2E1 and 2E3). If international law had a dominant legal culture, if it were to be placed squarely within the family of continental legal systems or if it were a common-law jurisdiction, jurists could employ the dominant default theories of their culture. According to the maxim, ‘every international lawyer a national lawyer first’ our colleagues often bring their preconceptions of how a legal system works — their ‘cultural prejudice’ — in arguing an international legal case.

(c) Because of the absence of a dominant theory and because there is no written constitution of international law, the structure of the highest echelons of international law is very unclear. This structural uncertainty is not merely a matter for the international legal theorist. It is also relevant for so-called ‘technical’ questions, because problems of substantive or meta-law often point directly to an unsolved question, an uncertainty, of international constitutional law.

As scholars of international law, we must make assumptions of how we think the highest echelons of international law are shaped. At this level of abstractness, we have no legal argument left, because we are, so to speak, peering over the edge of the disc that is the subject of our study. Our ‘anchors’, our ‘arbitrary origins’ that connect international law to other concepts cannot be legal. They might be political or philosophical, practical or logical, but a determination of an object of study by reference to itself is not possible. In the end, a legal order must be based on an arbitrary determination by humans of what it is. The law, like all ideas, remains intangible and empirically incognizable — a fiction. Like any ideal, law only exists because we choose to think it. This figment of our collective imagination would only become certain, if all humans thought about the same thing when they thought about ‘norms’ or ‘law’. But this will not happen, not as long as our consciousness is individual consciousness.

#### Can’t enforce it

Walt 13, American professor of international affairs at Harvard University's John F. Kennedy School of Government (Steven Walt, February 2013, “Why Jurisprudence Doesn’t Matter for Customary International Law, William & Mary Law Review, Vol. 54 (2012-2013), Issue 3 (Law Without a Lawmaker Symposium), Article 10)

For the same reason, custom has no necessary priority over other norms. While customary law, unlike simple custom, creates legal obligations, those obligations may not be superior to other legal obligations. Whether customary law operates only at the state level or also domestically can depend on the content of the particular custom. Although customary international law does not require recognition by a domestic legal system to create legal obligations, these obligations need not have priority over domestic law or automatic effect domestically. There is nothing in the bare notion of customary international law that gives it priority over inconsistent domestic law or makes customary international law applicable in domestic law without domestic implementation. The mere fact that international and domestic law are part of the same or different legal orders does not by itself give international law priority over domestic law or make it self-executing. Put another way, even if customary international law and domestic law are parts of a single legal order, international law might give priority to domestic law over customary international law, or domestic law might give priority to customary international law over domestic law. The priority or effect of customary international law depends on particular facts: facts about the priority or effect international law gives it. This is a contingent matter. Finally, if customary international law is not self-executing, so that its domestic application requires incorporation into domestic law, domestic law controls the recognition of customary international law. Erie’s limit on federal judicial law making extends to customary international law, requiring a source of authority in federal or state law for its application. Customary international law might be federal law for purposes of the Supremacy Clause in Article VI of the Constitution. Alternatively, its recognition might be authorized by legislation.127 In both cases, the limits on the judicial recognition of customary international law are constitutional or statutory, not jurisprudential.

#### Lack of credibility

Joyner 19, Elton B. Stephens Professor of Law, University of Alabama School of Law (Daniel H. Joyner, 2019, “Why I stopped believing in Customary International Law,” Asian Journal of International Law, Vol. 9, Issue 1, pp. 14-15)

Conclusion

So again, I think there is a big problem here. The problem is that the agencies that are looked to as identifiers of CIL – international courts, the ILC, and academics - have been demonstrated to typically go about that exercise in methodologically bankrupt ways. And we don’t just do it because we are lazy or incompetent, we do it so that we can use the resulting assertions of CIL obligations in instrumentalist ways, typically to expand international law to apply in areas where states have not given their explicit consent to be bound through agreed treaty text. The asserted rules of CIL which the shortcut methodologies of identification creates, are therefore of low credibility in the ~~eyes~~ of states, who are understandably reluctant to have judges and academics creating new legal obligations for them. This problem is so difficult to address because it is so institutionally entrenched. Courts and the ILC and many academics have every reason to continue to support the orthodox approach to CIL identification, which is so susceptible to this methodological mischief, because it serves their instrumentalist purposes. The ILC’s ongoing study on this topic, which will almost certainly provide yet another reaffirmation of the orthodox approach, will only further institutionalize the problem. Again, my problem is not with CIL itself as a source of law. In a theoretical sense, I have no problem with the idea that states can collectively make law that governs their interactions with each other, through an evolving process that is not necessarily written down in one lawmaking moment. Particularly under the modern approach that places emphasis and priority upon opinio juris, states can manifest their recognition of an obligation, and their consent to be bound thereby, through their subjective statements of legal understanding. The problem is that we simply do not currently have a structural framework within the international legal system that can support this methodological approach to law creation in a manner that satisfies concerns about objectivity and empirical verifiability of that positivistic manifestation of affirmation and consent. And without this institutional structure, the black magic that stands in for identification of CIL in practice undermines the credibility of every assertion of CIL. It also, by extension, undermines the credibility of the international legal system itself. In order for CIL to survive as a supportable source of international legal obligation, we need to create such a system structure for the objective manifestation and empirical verifiability of positive manifestations of affirmation and consent to be bound by states, resulting in the identification of CIL obligations. This structure must have in place an agreed set of rules and procedures for how this is to happen. Exactly what this institutional structure should look like, I don’t know. The conceptually easy proposal would be to create some sort of legislative body for the international legal system. Perhaps by amending the U.N. Charter to build on the existence and functions of the U.N. General Assembly. But frankly, this prospect is so unlikely, it hardly seems deserving of serious consideration.

### 2AC---Impact---AT: I-Law

#### I-law fails

Hiken & Hiken 12, \*JD, Attorney who has engaged in the Practice of Criminal, Military, Immigration, Appellate Law \*\*Former Associate Director of the Institute for Public Accuracy and Former Chair of the National Lawyers Guild Military Law Task Force (\*Luke Hiken \*\*Marti Hiken, 7-17-2012, “The Impotence of International Law,” Foreign Policy in Focus, https://fpif.org/the\_impotence\_of\_international\_law/)

Whenever a lawyer or historian describes how a particular action “violates international law” many people stop listening or reading further. It is a bit alienating to hear the words “this action constitutes a violation of international law” time and time again – and especially at the end of a debate when a speaker has no other arguments available. The statement is inevitably followed by: “…and it is a war crime and it denies people their human rights.” A plethora of international law violations are perpetrated by every major power in the world each day, and thus, the empty invocation of international law does nothing but reinforce our own sense of impotence and helplessness in the face of international lawlessness. The United States, alone, and on a daily basis violates every principle of international law ever envisioned: unprovoked wars of aggression; unmanned drone attacks; tortures and renditions; assassinations of our alleged “enemies”; sales of nuclear weapons; destabilization of unfriendly governments; creating the largest prison population in the world – the list is virtually endless. Obviously one would wish that there existed a body of international law that could put an end to these abuses, but such laws exist in theory, not in practice. Each time a legal scholar points out the particular treaties being ignored by the superpowers (and everyone else) the only appropriate response is “so what!” or “they always say that.” If there is no enforcement mechanism to prevent the violations, and no military force with the power to intervene on behalf of those victimized by the violations, what possible good does it do to invoke principles of “truth and justice” that border on fantasy? The assumption is that by invoking human rights principles, legal scholars hope to reinforce the importance of and need for such a body of law. Yet, in reality, the invocation means nothing at the present time, and goes nowhere. In the real world, it would be nice to focus on suggestions that are enforceable, and have some potential to prevent the atrocities taking place around the globe. Scholars who invoke international law principles would do well to add to their analysis, some form of action or conduct at the present time that might prevent such violations from happening. Alternatively, praying for rain sounds as effective and rational as citing international legal principles to a lawless president, and his ruthless military.

## AT: DA---BLOCKCHAIN

### 2AC---Blockchain DA

#### Ocean Shipping Reform Act thumps — removed exemptions and expanded FMC enforcement

Berman 4-4-2022, group news editor for Logistics Management, Modern materials Handling, and Supply Chain Management Review. (Jeff, 4-4-2022, “U.S. Senate approves Ocean Shipping Reform Act, bill to head to conference”, Logistics Management, [https://www.logisticsmgmt.com/article/u.s.\_senate\_approves\_ocean\_shipping\_reform\_act\_bill\_to\_head\_to\_conference accessed 4-8-2022](https://www.logisticsmgmt.com/article/u.s._senate_approves_ocean_shipping_reform_act_bill_to_head_to_conference%20accessed%204-8-2022))

The Ocean Shipping Reform Act (OSRA) took another step on its course to being signed into law, with the United States Senate late last week unanimously voted to sign off on it on a voice vote.

The bill will head back to the House of Representatives, with the expectation it will head to President Biden’s desk to be signed into law, following conferencing between the House and Senate on differences that need to be hammered out between the chambers.

This represents the most recent sign of progress for the OSRA, getting bipartisan approval from United States Senate Committee on Commerce, Science, and Transportation on March 22 and OSRA being passed in December 2021 by the United States House of Representatives by a convincing 364-40 vote and its subsequent introduction into the Senate in February by Senator Amy Klochubar (D-Minn.) and Senator John Thune (R-S.D.).

The House version of the bill was introduced by Representatives John Garamendi (D-CA) and Dusty Johnson (R-SD) in August, with the objective of making the Federal Maritime Commission (FMC) “a more effective federal regulator.”

Key components of the Ocean Shipping Reform Act of 2021 include:

requiring ocean carriers to certify that late fees —known in maritime parlance as “detention and demurrage” charges—comply with federal regulations or face penalties;

shifting burden of proof regarding the reasonableness of “detention or demurrage” charges from the invoiced party to the ocean carrier;

prohibiting ocean carriers from unreasonably declining shipping opportunities for U.S. exports, as determined by the FMC in new required rulemaking;

requiring ocean common carriers to report to the FMC each calendar quarter on total import/export tonnage and 20-foot equivalent units (loaded/empty) per vessel that makes port in the United States;

authorizing the FMC to self-initiate investigations of ocean common carrier’s business practices and apply enforcement measures, as appropriate; and

establishing new authority for the FMC to register shipping exchanges

#### No link---It’s impossible for antitrust agencies to crack down on blockchain---it’ll be adopted inevitably

Lika Kapanadze and Nika Sergia, New Visions University, ’21, “The Challenges of Blockchain Technology to Antitrust Law” https://openscience.ge/bitstream/1/2670/1/Lika%20Kapanadze%20%20Samagistro.pdf

7. Effectiveness of Antitrust Law

Anticompetitive practices that violate antitrust laws are usually detected and then stopped and sanctioned by the public authorities. However, doing so in relation to the blockchain technology is tricky, as identities of the perpetrators are anonymous, it is impossible to determine the relevant jurisdiction and remedy the anticompetitive practices due to the immutability of the blockchain.

Antitrust authorities have no ability to detect anticompetitive practices as well as the identification of users who engage in those practices, due to the privacy and pseudonymity of the users.98 If new technologies develop, that enable tracking such practices and perpetrators by the public authorities, it would significantly affect the cornerstone “values” of the blockchain and change the nature of it. Therefore, it is highly unlikely, to implement such technologies on the blockchain. Besides, inherent nature of the blockchain creates a real barrier to antitrust enforcement authorities to remedy, delete or stop anticompetitive practices, since the network is distributed, and no one is in control, but at the same time everybody is, except for the authorities themselves.99 Even if authorities will have a power to track the practices and determine the identities of the perpetrators, they will not be able to stop such practices. Immutability of blockchain ensures, that platform will continue to function (as long as the people who interact with it pay the transaction fees charged by miners who support the blockchain) and there is no server to shut down the blockchain, even if authorities impose strict regulation or penalties on the original parties who developed or promoted such blockchain.100 In other words, if anticompetitive practices are implemented on a blockchain and public authorities detect them, authorities will not be able to stop it and blockchain will continue to perform the transactions.

Anonymity of the parties creates another challenge as well - business transactions on the blockchain are encrypted and location of the transacting users (and thus, legal entities behind the users) is completely unknown, making it impossible to determine the relevant jurisdiction.101 In contradiction with blockchains, determining the jurisdiction on the internet is simple and it is based on internationally recognized jurisdiction principles (territorial jurisdiction, effective jurisdiction, personal jurisdiction, passive personal jurisdiction, protective jurisdiction, and universal jurisdiction), namely, each internet user is subject to national legal regime, where they decide to create content and enable it online.102 In technical terms, every computer or device that goes on the internet needs its own IP address and the main central authority, the Internet Corporation for Assigned Names and Numbers, manages and controls assigning and distributing such IP addresses and domain registrations in the regions and continents, making it easy to detect parties ’locations on the basis of the registrations of IP Addresses.103 In case of blockchain, the data storage is virtually everywhere making it impossible to determine jurisdiction on the blockchain and its transactions.104 In traditional law, and in absence of any agreement stating otherwise, blockchain disputes would be normally settled by state courts, but in this digital economy not only it is impossible to determine the jurisdiction, but also there is no technical necessity for the stakeholders to be attached to any jurisdiction at all.105 For that reason, self-regulation of the market participant may play an important role, one part of which could be dispute settlement by an arbitral tribunal, and other part of which could be compliance of blockchains with a potentially unwieldy number of legal and regulatory regimes and settle disputes in courts.106 The success of the former approach solely depends on the enforcement. The states retain certain control over private arbitration with recognition and enforcement procedures, and as jurisdiction on the blockchain is not recognized by any state jurisdiction, it would be difficult to have the awards enforced.107 The latter approach is also unclear, as the transactions may occur simultaneously in a few different places, which again makes it nearly impossible to determine the competent jurisdiction and even if jurisdiction were to be determined, state courts would not be able to decide any dispute fast enough compared to the rapidly proceeding blockchain applications without having any technological expertise to sufficiently understand the mechanism of blockchains

8. “Law is Code” Paradigm

As demonstrated in the previous chapter, there are no effective ways to apply antitrust law to the blockchain, and almost every measure used before seems to be extreme and drastic in the context of blockchain, jeopardizing the blockchain technology and its true nature. Considering above, it appears necessary to code and integrate legal requirements into the technology itself - this is the concept of “law is code.”108

#### They would register the blockchain in another country.

BRIAN P. MILLER, Counsel of Record, AKERMAN LLP, ’18, “UNITED AMERICAN CORP., a Florida company, Plaintiff v. BITMAIN, INC.” UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF FLORIDA Case 1:18-cv-25106-KMW Document 1 Entered on FLSD Docket 12/06/2018

The China International Capital Corporation (“CICC”) is one of China’s leading investment banking firms that engages in investment banking, securities, investment management, and other financial services. 50. CICC has the exclusive mandate for the Initial Public Offering of Bitmain Technologies Ltd. 51. Bitmain Technologies Ltd. – founded in 2013 by Jihan Wu and Micree Zhan – is the largest designer of what is referred to as “ASIC” or Application Specific Integrated Circuit chips for mining operations. The Bitmain ASIC chip powers the Antminer series of mining servers that are the dominant servers operating on a number of cryptocurrency networks such as Bitcoin and Bitcoin derivatives.

52. Estimates of Bitmain’s market share for ASIC servers ranges from 67 to 80% and it is estimated that Bitmain controls well in excess of 60% of the world’s cryptocurrency mining computer (hashing) power. 53. Bitmain also operates Antpool and BTC.com, two of the largest Bitcoin and Bitcoin Cash mining pools in the world. As of December 2, 2018 (based on a 7 day average) these two pools collectively controlled 31% of Bitcoin mining and 40% of Bitcoin Cash ABC.

Bitcoin.com is a privately‐owned company registered in the off shore islands of St Kitts and Nevis under the organization of Saint Bitts LLC (with headquarters in Tokyo). Bitcoin.com provides Bitcoin and Bitcoin Cash services, such as purchasing and selling these cryptocurrencies, and choosing a wallet for both. It has servers and programmers in the United States and operates the Bitcoin.com pool (currently 7.4% of Bitcoin Cash ABC) with hash power provided by Bitmain. It also offers other services such as news, an online store and online gaming.

55. Bitcoin.com was founded and remains owned by Roger Ver (“Ver”), a U.S. natural citizen who renounced his U.S. citizenship in 2014 after obtaining a Saint Kitts and Nevis passport. Upon information and belief, Ver is currently living in Tokyo. 56. Ver is a self‐described “Bitcoin Angel Investor” and became interested in cryptocurrencies early in Bitcoin’s history. He invested in a number of Bitcoin projects and startups including the Kraken trading platform, Ripple and BitInstant – founded by ex-convict Charlie Shrem.4 57. Ver is a strong advocate of Bitcoin Cash and the original forking of Bitcoin into Bitcoin and Bitcoin Cash in 2017. He has openly supported the development and implementation of the ABC version of Bitcoin Cash.

#### the technology isn’t there yet

Dr. Thibault Schrepel, LL.M. (The aff’s Blockchain Daddy), ’21, “Computational Antitrust: An Introduction and Research Agenda” Stanford Computational Antitrust VOL. 1 2021

Eventually, technical questions will get technical answers. The most critical challenge for developing computational antitrust is related to the interaction between our legal systems and technical tools. This is a human challenge. As one author put it in 1962, “we must bear in mind that it is not machines that have changed the lives of men, but the adaptations that men themselves have adopted in response to machines. It is not the invention of tools, however subtle, complex, or powerful, that constitutes man’s greatest achievement, but the ability to use the tools that man has developed within himself.”81

Providing this challenge a satisfying answer will require West Coast Code and East Coast Code to cooperate.82 This collaboration requires coders (computer scientists, data scientists, developers) and the antitrust community (companies, policymakers, regulators) to prepare their respective fields so computational antitrust can thrive. Coders will be required to devote their time to developing the recipes—the programming of sequences of specific instructions to achieve a specific result. Companies and agencies will provide the ingredients—which requires identifying the ones needed and how to get them (i.e., how to transform data into information). In the end, these recipes and ingredients will complement each other; the nature of one will change the nature of the other.

Institutional changes will facilitate the cooperation of these two communities. Several actions are required in this regard. First, one will be required to create proper incentives for computational antitrust development. On the side of coders, computer scientists, and data scientists, this implies the creation of different reward systemsto ensure they get (and stay) involved in the field. On the side of companies and agencies, this requires enlarging the teams dedicated to these subjects and giving them appropriate means.83 Second, one will have to establish the conditions for sustained collaboration between companies and agencies. Computational antitrust should not become a zero-sum game in which the gains made by companies or agencies systematically penalize the other. One must question the creation of safe harbors, new procedural rules, and, overall, a less confrontational approach between the different stakeholders. They will cooperate if they have a vested interest in doing so.84 Of course, achieving such cooperation will be difficult; Justice Holmes’s “bad man” will not disappear.85 But it is possible.

### 2AC---Impact---AT: Warming

#### No warming impact.

Ord 20, research fellow at the Future of Humanity Institute at Oxford University, has advised the World Health Organization, the World Bank, the World Economic Forum, and the UK Prime Minister’s Office and Cabinet Office. (Toby, “4. Anthropogenic Risks”, *The Precipice: Existential Risk and the Future of Humanity*, Oxford)

Major effects of climate change include reduced agricultural yields, sea level rises, water scarcity, increased tropical diseases, ocean acidification and the collapse of the Gulf Stream. While extremely important when assessing the overall risks of climate change, none of these threaten extinction or irrevocable collapse.

Crops are very sensitive to reductions in temperature (due to frosts), but less sensitive to increases. By all appearances we would still have food to support civilization.85 Even if sea levels rose hundreds of meters (over centuries), most of the Earth’s land area would remain. Similarly, while some areas might conceivably become uninhabitable due to water scarcity, other areas will have increased rainfall. More areas may become susceptible to tropical diseases, but we need only look to the tropics to see civilization flourish despite this. The main effect of a collapse of the system of Atlantic Ocean currents that includes the Gulf Stream is a 2°C cooling of Europe—something that poses no permanent threat to global civilization.

From an existential risk perspective, a more serious concern is that the high temperatures (and the rapidity of their change) might cause a large loss of biodiversity and subsequent ecosystem collapse. While the pathway is not entirely clear, a large enough collapse of ecosystems across the globe could perhaps threaten human extinction. The idea that climate change could cause widespread extinctions has some good theoretical support.86 Yet the evidence is mixed. For when we look at many of the past cases of extremely high global temperatures or extremely rapid warming we don’t see a corresponding loss of biodiversity.87

So the most important known effect of climate change from the perspective of direct existential risk is probably the most obvious: heat stress. We need an environment cooler than our body temperature to be able to rid ourselves of waste heat and stay alive. More precisely, we need to be able to lose heat by sweating, which depends on the humidity as well as the temperature.

A landmark paper by Steven Sherwood and Matthew Huber showed that with sufficient warming there would be parts of the world whose temperature and humidity combine to exceed the level where humans could survive without air conditioning.88 With 12°C of warming, a very large land area—where more than half of all people currently live and where much of our food is grown—would exceed this level at some point during a typical year. Sherwood and Huber suggest that such areas would be uninhabitable. This may not quite be true (particularly if air conditioning is possible during the hottest months), but their habitability is at least in question.

However, substantial regions would also remain below this threshold. Even with an extreme 20°C of warming there would be many coastal areas (and some elevated regions) that would have no days above the temperature/humidity threshold.89 So there would remain large areas in which humanity and civilization could continue. A world with 20°C of warming would be an unparalleled human and environmental tragedy, forcing mass migration and perhaps starvation too. This is reason enough to do our utmost to prevent anything like that from ever happening. However, our present task is identifying existential risks to humanity and it is hard to see how any realistic level of heat stress could pose such a risk. So the runaway and moist greenhouse effects remain the only known mechanisms through which climate change could directly cause our extinction or irrevocable collapse.

## AT: DA---COMPETES ACT

### 2AC---PC Not Key

#### Raimondo’s key, not Biden

Meyer 3-23-2022 (Theodoric, “Time is running out for a deal on the China competitiveness bill,” *Washington Post*, <https://www.washingtonpost.com/politics/2022/03/23/time-is-running-out-deal-china-competitiveness-bill/>)

Congress has tied itself into a Gordian knot over one of President Biden’s top legislative priorities: a bill to bolster American semiconductor manufacturing and help the country compete economically with China. It's Commerce Secretary Gina Raimondo’s job to help cut it — but time is running out. Raimondo is working to help lawmakers reach an agreement, which would give Democrats another achievement in the midterms. She told reporters in January that Congress “can’t wait until April, May” to pass the bill — a timeline that is now impossible to meet. Advertisement In an interview, Raimondo told The Early she thought the bill could be done by Memorial Day — maybe sooner. “There’s no deadline, per se,” Raimondo said. “We just have stay focused on it and do the work — sit at the table and do the work to reconcile the differences.” “I'm going to work on this and talk to members of Congress every single day until it does pass,” she added. While the bill is a top priority for the White House, Senate Majority Leader Chuck Schumer (D-N.Y.) and House Speaker Nancy Pelosi (D-Calif.) to help improve Democrats' standing ahead of the midterms, the negotiations also serve as a political opportunity for Raimondo. The former Rhode Island governor could burnish her reputation as a leading moderate in the party by showing she can help negotiate a deal with Republicans at a time when bitter partisanship reigns. “One of the most impressive things about Secretary Raimondo is that she is as comfortable, willing and happy to call a progressive member from California as a Republican senator from a deep-red state,” said Scott Mulhauser, who worked as a senior adviser to Raimondo for several months last year before returning to his consulting firm. Some Republicans have praised Raimondo's work trying to hash out a compromise. “Amongst many of the Senate Republican staff that I’ve spoken with on this matter, she has been very helpful,” said Ari Zimmerman, a Republican lobbyist at Brownstein Hyatt Farber Schreck who's lobbied on the bill. “She understands the problem in and out.”

#### If PC fails, they’ll just cut the trade provisions

Meyer 3-23-2022 (Theodoric, “Time is running out for a deal on the China competitiveness bill,” *Washington Post*, <https://www.washingtonpost.com/politics/2022/03/23/time-is-running-out-deal-china-competitiveness-bill/>)

The challenge facing Raimondo and Democratic congressional leaders now is how to strike a deal that keeps at least 10 Senate Republicans on board and still wins the support of wary House Democrats. That task grows harder each day as the midterms approach and Republicans lose any incentive to make compromises that would allow for passage of a bill Democrats could tout ahead of November's elections. Raimondo insists there is a deal to be had and argued that there’s already bipartisan agreement on “the bones of the bill” — a $52 billion program to combat a global shortage of computer chips by subsidizing manufacturing in the United States. But lawmakers are at odds over provisions that fall “outside of the core innovation package,” as she put it, such as climate change, financial services and human trafficking. The biggest gap between the two bills is on trade, according to Raimondo as well as several lobbyists tracking the legislation. Advertisement “That’s really where the two sides are the farthest apart,” said Brian Pomper, a Democratic lobbyist at Akin Gump Strauss Hauer & Feld who has lobbied on the bill. “And, I mean, they are universes apart.” Republicans and Democrats are preparing to hash out the differences between the two bills in a conference committee. If negotiations falter, though, Pomper said lawmakers might push to scrap the trade provisions and pass a more limited bill. “If you really get jammed up on the trade title, I think you’re going to see some members starting to say, ‘Well, why don’t we just ditch the trade title? And let’s do the rest of this bill, which is going to be a lot easier to figure out,” he said.

### 2AC---Won’t Pass

#### The bill is dead on arrival

Edmondson 1-26-2022, reporter in the Washington bureau (Catie, “Democrats Renew Push to Pass Industrial Policy Bill to Counter China,” *New York Times*, <https://www.nytimes.com/2022/01/26/us/politics/democrats-china-competitiveness-bill.html>)

Biden administration officials and Democrats in Congress are pushing to revive stalled legislation that would pour billions of dollars into scientific research and development and shore up domestic manufacturing, amid deep differences on Capitol Hill about the best way to counter China and confront persistent supply chain woes. House Democrats unveiled a 2,900-page bill on Tuesday evening that would authorize $45 billion in grants and loans to support supply chain resilience and American manufacturing, along with providing billions of dollars in new funding for scientific research. Speaker Nancy Pelosi said in a statement that she hoped lawmakers would quickly begin negotiations with the Senate, which passed its own version of the bill last June, to settle on compromise legislation that could be sent to President Biden for his signature. But the effort faces obstacles in Congress, where attempts to sink significant federal resources into scientific research and development to bolster competitiveness with China and combat a shortage of semiconductors have faltered. The Senate-passed measure fizzled last year amid ideological disputes with the House and a focus on efforts to pass Mr. Biden’s infrastructure and social policy bills. For months, the competitiveness measure was rarely even mentioned, except perhaps by Senator Chuck Schumer, Democrat of New York and the majority leader, who has personally championed it. But facing a disruptive semiconductor shortage that has broken down supply chains and helped fuel inflation, Democrats are now vigorously pressing ahead on the bill. With Mr. Biden’s domestic agenda sputtering, the party is eager for a legislative victory, and top administration officials and lawmakers have said they hope to send a compromise bill to the president’s desk in a matter of months. ADVERTISEMENT Continue reading the main story “We have no time to waste in improving American competitiveness, strengthening our lead in global innovation and addressing supply chain challenges, including in the semiconductor industry,” Mr. Schumer said. Both the House bill and the one that passed the Senate last year would send a lifeline to the semiconductor industry during a global chip shortage that has shut auto plants and rippled through the economy. The bills would offer chip companies $52 billion in grants and subsidies with few restrictions. The measures would also pour billions more into scientific research and development pipelines in the United States, create grants and foster agreements between companies and research universities to encourage breakthroughs in new technologies, and establish new manufacturing jobs and apprenticeships. “The proposals laid out by the House and Senate represent the sort of transformational investments in our industrial base and research and development that helped power the United States to lead the global economy in the 20th century,” Mr. Biden said in a statement. “They’ll help bring manufacturing jobs back to the United States, and they’re squarely focused on easing the sort of supply chain bottlenecks like semiconductors that have led to higher prices for the middle class.” Lawmakers will still need to overcome differing views in the House and Senate over how best to take on China and, perhaps more crucially, how to fund the nation’s scientific research. “There are disagreements, legitimate disagreements,” Gina Raimondo, the commerce secretary, said in an interview. “How do we do this? How do we get it right? There doesn’t seem to be much disagreement over the core $52 billion appropriation for chips. There is disagreement around how we make investments in research and development in basic science.” Sign Up for On Politics A guide to the political news cycle, cutting through the spin and delivering clarity from the chaos. Get it sent to your inbox. One major difference is that while the Senate bill invests heavily in specific fields of cutting-edge technology, such as artificial intelligence and quantum computing, the House bill places few stipulations on the new round of funding, other than to say that it should go toward fundamental research. In a memo on the legislation, House aides wrote that their measure was “focusing on solutions first, not tech buzzwords.” Some experts argue that approach lacks urgency. Stephen Ezell, the vice president for global innovation policy at the Information Technology and Innovation Foundation, a policy group that receives funding from telecommunications and tech companies, called the House bill “not sufficient to enable the United States to win the advanced technology competition with China.” He argued that the focus on advanced technology in the Senate-passed bill would do more to increase American competitiveness. How the Supply Chain Crisis Unfolded Card 1 of 9 The pandemic sparked the problem. The highly intricate and interconnected global supply chain is in upheaval. Much of the crisis can be traced to the outbreak of Covid-19, which triggered an economic slowdown, mass layoffs and a halt to production. Here’s what happened next: A reduction in shipping. With fewer goods being made and fewer people with paychecks to spend at the start of the pandemic, manufacturers and shipping companies assumed that demand would drop sharply. But that proved to be a mistake, as demand for some items would surge. Demand for protective gear spiked. In early 2020, the entire planet suddenly needed surgical masks and gowns. Most of these goods were made in China. As Chinese factories ramped up production, cargo vessels began delivering gear around the globe. Then, a shipping container shortage. Shipping containers piled up in many parts of the world after they were emptied. The result was a shortage of containers in the one country that needed them the most: China, where factories would begin pumping out goods in record volumes Demand for durable goods increased. The pandemic shifted Americans’ spending from eating out and attending events to office furniture, electronics and kitchen appliances – mostly purchased online. The spending was also encouraged by government stimulus programs. Strained supply chains. Factory goods swiftly overwhelmed U.S. ports. Swelling orders further outstripped the availability of shipping containers, and the cost of shipping a container from Shanghai to Los Angeles skyrocketed tenfold. Labor shortages. Businesses across the economy, meanwhile, struggled to hire workers, including the truck drivers needed to haul cargo to warehouses. Even as employers resorted to lifting wages, labor shortages persisted, worsening the scarcity of goods. Component shortages. Shortages of one thing turned into shortages of others. A dearth of computer chips, for example, forced major automakers to slash production, while even delaying the manufacture of medical devices. A lasting problem. Businesses and consumers reacted to shortages by ordering earlier and extra, especially ahead of the holidays, but that has placed more strain on the system. These issues are a key factor in rising inflation and are likely to last for months — if not longer. In addition, as lawmakers debate how to counter Beijing’s rising influence, efforts to compromise on the foreign policy components of the legislation will most likely create tensions between the chambers and between Democrats and Republicans. In the Senate, for example, lawmakers included stricter requirements for when universities must report foreign funding to the Education Department. Democrats in the House have resisted the Senate’s proposed foreign policy provisions, complaining that the chamber focused too narrowly on countering China rather than investing in domestic manufacturing. Much of the foreign policy legislation added by Democrats to the House bill is focused on climate change; the House measure would also authorize $225 million over five years to bolster the State Department’s military training and education programs in the Indo-Pacific region. Few Republicans are expected to support the House bill, though some of the measures included in the legislation have previously garnered bipartisan support. “It reflects virtually no Republican input and — to be frank — will be dead on arrival in the U.S. Senate,” said Representative Michael McCaul of Texas, the top Republican on the Foreign Affairs Committee, who said the bill did not take a hard enough line against China.

### 2AC---Link

#### PC is low---Inflation

Newman 3-28-2022 (Rick, with Sozzi and Human, “Biden to propose billionaire tax, approval rating falls to lowest of presidency,” Yahoo News, https://news.yahoo.com/biden-propose-billionaire-tax-approval-133719393.html)

BRIAN SOZZI: Rick, also a problem for the president, his approval ratings are at their lowest levels of his presidency. RICK NEWMAN: This is all about inflation. It's not about Ukraine. It's not about whether Biden's handling this foreign policy crisis well or not. I don't see how Biden's approval rating gets any better when we've got inflation close to 8% and gas prices around 4.25, 4.40 a gallon. So if you want to know what's going to help Biden get out of that hole, just watch prices. I think it's that simple. JULIE HYMAN: Well, but what does that do when he's got an approval rating like that? Traditionally-- I mean, already, we have a divided Washington. What does this do in terms of his agenda, going back to the budget and sort of signaling his priorities? RICK NEWMAN: It torpedoes his so-called political capital. With Biden just not that popular, it makes it easier for members of Congress, including members of his own party, to say, eh, I'm not really going to support this thing that Biden wants. What does this mean specifically? I mean, let's go back to the Build Back Better agenda, which died last year because Joe Manchin and maybe one or two other Democrats wouldn't support it. Now Biden's rebranding it as Build a Better America, BABA. And he's still going to try to get some of those policies passed, such as some green energy tax breaks, perhaps some social spending. The one thing that Biden seems to have highlighted in his budget is money for child care. So Democrats could still try to pass some of the Build Back Better stuff. But it just makes it that much harder, because when the president is not popular, it means that members of his own party can buck him, if they choose, without any punishment. Their own voters back home won't punish them. So I think it means we're just not going to see Democrats get very much done this year.

#### Billionaire tax — it’s widely controversial and takes PC

Bolton 3-29-2022 (Alexander, “Biden moves to campaign mode with billionaire tax plan,” The Hill, <https://thehill.com/homenews/senate/600109-biden-moves-to-campaign-mode-with-billionaire-tax-plan>)

President Biden’s proposal to impose a 20 percent minimum tax on billionaires is a sign that Democrats are looking ahead to the midterm elections and scrambling for a good message in a tough political environment. The proposal itself has an uphill path to becoming law, as Sen. Joe Manchin (D-W.Va.) has previously expressed concern about targeting the super-rich, but it gives Democrats a great talking point to capitalize on the unpopularity of billionaires such as Jeff Bezos and Elon Musk. Whether moderate Sen. Kyrsten Sinema (D-Ariz.) will support the idea is another uncertainty. She opposed raising the top marginal income tax rate or the corporate tax rate during negotiations with the White House in the fall. Republicans are leery about attacking the proposal because they don’t want to be seen as siding with billionaires, which makes it a good talking point for Democrats when inflation is a major problem and much of their legislative agenda remains stalled on Capitol Hill. Policy experts predict that even if Biden can’t get his billionaires tax enacted this year, it will be a topic of conversation heading into his 2024 reelection campaign. “It’s important that you have the president propose it and if it doesn’t get done this year, I think it remains on the table. I think it’s something that will remain unfinished until it’s done. It’s such a glaring flaw that at some point it needs to be addressed,” said Chuck Marr, the vice president for federal tax policy at the Center on Budget and Policy Priorities, a liberal-leaning nonpartisan policy institute. “It’s a major policy issue for this year and every year until” it gets enacted, he added of the billionaires’ tax. “Once the Pro Publica story came out, I don’t think policymakers can ignore that.” Pro Publica published a bombshell story in June based on a trove of secret IRS files reporting that several of the nation’s richest multibillionaires, Bezos, Musk, Mark Zuckerberg and Rupert Murdoch, paid little and sometimes nothing in income taxes compared to their huge personal wealth. Musk, for example, the world’s richest man, didn’t pay any federal income taxes in 2018, according to the report. Bezos, who is worth an estimated $190 billion, didn’t pay federal income taxes in 2007 or 2011. Less than a year later, Biden is seeking to capitalize on the issue by proposing a new tax on billionaires in the budget plan he released Monday. The White House budget office on Monday said in a fact sheet explaining the proposal that “the tax code currently offers special treatment for the types of income that wealthy people enjoy.” Democratic strategists say the budget signals that Biden is pivoting to the center and closer to who he was when he ran for the White House and won two years ago. “I think it’s return to Biden 2020,” said Jim Kessler, executive vice president for policy at Third Way, a moderate Democratic think tank. “There’s deficit reduction, more money for police, a strong defense budget. “He ran as a centrist with big ideas in 2020 and that won the Democratic primary and it beat Donald Trump, and then early on he did what had to be done with the [American] Rescue Plan and getting through the pandemic and the infrastructure bill.” Kessler noted that Biden’s fall in the polls coincided with the Democrats’ push for what was initially envisioned as the $3.5 trillion Build Back Better climate and social spending bill. “I think Build Back Better started to get away from him,” he said. “Congress deserves some of the, definitely, blame on this, too. That $3.5 trillion price tag — no one thought that was real and that just hung around for too long.” Some progressives say Biden’s proposal doesn’t go far enough to raise to tax the rich. “I think it’s a good start. I think you got to go a little further,” Senate Budget Committee Chairman Bernie Sanders (I-Vt.) told The Hill. Biden’s proposal comes at a time when Democratic lawmakers have largely moved on from last year’s effort to muster 50 Democratic votes to implement Biden’s tax reform and social spending agenda. Many Democratic senators were left highly frustrated after months of negotiations with Manchin and Sinema that failed to yield a bill that could be brought to the floor for a vote. “I’ve taken the word reconciliation, I’ve put it over here on the shelf,” said Senate Majority Whip Dick Durbin (D-Ill.), pantomiming the act of setting something aside. “I’m focusing on everything else that’s going on around here, and most of it needs 60 votes, which means it’s very limited in scope.” “I don’t want to go through this exercise again of getting my hopes up that reconciliation is going to solve our problems and then losing it to one or two senators at the last minute,” he said. proposal Biden’s billionaire tax would need to pass under special budget reconciliation rules to circumvent a Republican filibuster, as it has no chance of getting 10 GOP votes in the 50-50 divided Senate. Durbin said he doesn’t know whether it would have the support of Manchin and Sinema. “I don’t know, it would be close,” he said when asked whether it would muster all 50 votes in the Democratic caucus. Manchin last year expressed some concern about targeting billionaires to raise revenue for Biden’s agenda but didn’t altogether shoot down the idea. “I don’t like it. I don’t like the connotation that we’re targeting different people,” Manchin told reporters when asked in October about a proposal sponsored by Senate Finance Committee Chairman Ron Wyden (D-Ore.) to tax the unrealized capital gains of billionaires and people who earned $100 million or more in three consecutive years. ADVERTISEMENT Manchin argued that ultra-wealthy individuals “bring a lot of jobs, invest a lot of money and give a lot to philanthropic pursuits.” Sinema was a major obstacle to the Democrats’ tax reform agenda last year. She stood firmly against proposals to raise the marginal income tax rate on the top income bracket and to increase the 21 percent corporate tax rate. Faced with Sinema’s opposition to raising the marginal and corporate rates, the White House instead proposed a 5 percent surtax on income above $10 million and an additional 3 percent surtax on income above $25 million. A major problem with that proposal was that it did little to tax multibillionaires such as Bezos and Musk, who in past years have avoided paying federal income tax or paid very little by declaring little to no income. Many billionaires can live lavish lifestyles by taking out big loans secured by their assets instead of accepting regular income or selling stock to cover expenses. Biden’s new plan would impose a minimum 20 percent tax on income and the unrealized gains of stocks and other liquid assets for households worth more than $100 million. But the idea of taxing unrealized gains is controversial among Republicans, independents and Democrats. A poll and study by professor Zachary Liscow of the Yale University Law School and Edward Fox of the University of Michigan Law School found that Americans are opposed to taxing unrealized gain by a margin of 3 to 1. So while the talking point of taxing the ultra-rich is a good political message for Democrats, getting the proposal outlined by Biden on Monday through Congress will be a heavy lift.

### 2AC---Semiconductor Turn

#### Semiconductor leadership immediately sparks invasion of Taiwan and US China War

Calhoun 21 (George, Quantitative Finance Program Director, at Stevens Inst. of Technology, “War With China? The Economic Factor That Could Trigger It” 9/12/21 https://www.forbes.com/sites/georgecalhoun/2021/09/12/war-with-china-the-economic-factor-that-could-trigger-it/?sh=5386ced95d26)

The Pentagon undoubtedly draws up various scenarios for how conflict between China and the U.S. might develop. Most of them would involve a Chinese move against Taiwan. But Taiwan and China have co-existed in intense but bloodless antagonism for seven decades without tipping into real war. The crucial question is: What would trigger an actual Chinese military adventure? I can answer that question. To step back – If there is to be a war, an open war, with China – and we may stipulate that this scenario is at the far end of the spectrum of possibilities, and yet not an impossibility – if there is to be a war, it will not arise from Western outrage at human rights violations in Xinjiang, or Chinese outrage at Western outrage, or cyber-crime, or technology theft, or currency manipulation, or security crackdowns in Hong Kong, or indignities visited upon the Filipinos or the Vietnamese or the Australians. It will arise from acute economic pain, inflicted on China by actions of the United States to deprive them of the most essential physical resource of the 21st century: semiconductors. “China’s aspiration to become a true technological rival to the U.S. faces a foundational challenge: The country doesn’t control the semiconductors that are the building blocks for everything from smartphones to automated cars…. ‘For our country,’ Vice Premier Liu He told the country’s top scientists in May, ‘this technology is not just for growth. It’s a matter of survival.’” – Bloomberg “American leadership in semiconductors is vital to the technological superiority of the U.S. military.” – The National Research Council (NRC) of the United States National Academies of Sciences, Engineering, and Medicine “Modern wars are fought with semiconductors.” - a U.S. Senator The semiconductor problem, and the increasing vulnerability of China’s economy – and its military – to supply constraints, is what will lead China to consider, finally, outright military action against Taiwan. In fact, there is a strong historical parallel: China in 2021 finds itself in a situation very much like the situation of Japan in 1941. The Japanese Precedent It’s pretty clear that Japanese military aggression in 1941 was driven by the need to secure the country’s oil supply. “A recently discovered diary from one of Emperor Hirohito’s aides makes clear how the Japanese viewed oil’s importance in the Pacific war. It quotes the late emperor as saying, after the war, that Japan went to war with the United States because of oil — and lost the war because of oil.” “The Japanese military was obsessed with oil. The Japanese military machine was almost entirely dependent upon imported oil — and that meant the United States, which supplied about 80 percent of Japan’s consumption in those days. ‘If there were no supply of oil,’ one admiral said, ‘battleships would be nothing more than scarecrows.’” Japan sought to address its vulnerability by investing in new technology. But it was unsuccessful, as detailed in a peer-reviewed article entitled “Synthetic fuel production in prewar and World War II Japan: A case study in technological failure,” published in 1993 in the journal Annals of Science. “To achieve independence in petroleum, the Japanese [sought to] establish a synthetic fuel industry for the conversion of coal to oil. Actually, the Japanese had begun research on synthetic fuel in the 1920s, only a few years after other countries, such as Germany and Britain, that lacked sources of natural petroleum. They did excellent laboratory research on the coal hydrogenation and Fischer-Tropsch conversion processes, but in their haste to construct large synthetic fuel plants they bypassed the intermediated pilot-plant stage and failed to make a successful transition from small- to large-scale production.” Japan’s only other “solution” involved military expansionism. After the Fall of France in 1940, Japan moved to occupy French Indochina, as a steppingstone to oil producing regions in Malaysia and the Dutch East Indies.

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### 1AR — Definitions

#### Private sector includes distinct segments

Lewis 16 (James A. Lewis is a senior vice president and program director at the Center for Strategic and International Studies (CSIS). Editors: Miguel Angel Porrúa Ana Catalina García de Alba Diaz. “Advanced Experiences in Cybersecurity Policies and Practices An Overview of Estonia, Israel, South Korea, and the United States”, *Inter-American Development Bank*, <https://publications.iadb.org/publications/english/document/Advanced-Experiences-in-Cybersecurity-Policies-and-Practices-An-Overview-of-Estonia-Israel-South-Korea-and-the-United-States.pdf?download=true> , July 2016, date accessed 7/19/21)

The term private sector can also be misleading. There are many different segments—critical infrastructure, international companies, and small and medium-sized enterprises. While there are commonalties in how governments work with companies on cybersecurity, each segment can also have differing requirements and must be engaged in ways tailored to best meet its cybersecurity needs. This adds complexity to any national effort, but a country can start with a simple, one-size-fits-all approach and then tailor it as needed.

#### Includes different actors

Perez-Pineda and Wehrmann 21 (Jorge A. Pérez-Pineda and Dorothea Wehrmann. "Ch. 30 Partnerships with the private sector: Success factors and levels of engagement in development cooperation." In *The Palgrave Handbook of Development Cooperation for Achieving the 2030 Agenda*. Palgrave Macmillan, Cham, 2021. 649-670. Date accessed 7/19/21).

When investigating these different levels of engagement and looking at the transnational level of engagement, for example, the case of the GPEDC illustrates that—due to its governance structure and the absence of security for private-sector actors—the potentials and benefits arising from their cooperation in such kinds of partnerships have not been clear. Engaging at the national level5 instead seems to provide more advantages for private-sector actors, allowing, among other things, for better knowledge-exchange on regulating frameworks and potentials for cooperation. In this way, the example from Mexico shows how concrete initiatives such as the AS can promote common goals and incentives among private and public actors. This case, however, also illustrates that—judging from the many actors categorised under the term “private sector”—it is still most often multi-national and large local companies that are addressed by development agencies.

#### Walker and Hofstetter used “The private sector” as a term of art – meets “The” in the context of the resolution

#### “The” can be a particular member.

Merriam-Websters 8 (Online Collegiate Dictionary, <http://www.m-w.com/cgi-bin/dictionary>)

the

used as a function word to indicate that a following noun or noun equivalent is a unique or a particular member of its class <the President> <the Lord>

#### Core laws are general and apply to different industries

DoJ 7 (“ANTITRUST DIVISION STATEMENT REGARDING THE RELEASE OF THE ANTITRUST MODERNIZATION COMMISSION REPORT”, Department of Justice Press Release, 4/3/2007, <https://www.justice.gov/archive/atr/public/press_releases/2007/222344.htm> , date accessed 9/4/21)

The AMC has made many specific recommendations in its report, and the Division is in the process of reviewing all of them. The Division commends the AMC for its three primary conclusions:

* Free-market competition should remain the touchstone of United States' economic policy. The Commission's conclusion in this regard is a fundamental starting point for policy makers. Over a century of experience has shown that robust competition among businesses, each striving to be increasingly successful, leads to better quality products and services, lower prices, and higher levels of innovation.
* The core antitrust laws—Sherman Act sections 1 and 2 and Clayton Act section 7—and their application by the courts and federal enforcement agencies are sound and appropriately safeguard the competitiveness of the U.S. economy.
* New or different rules are not needed for industries in which innovation, intellectual property, and technological innovation are central features. Unlike some other areas of the law, the core antitrust laws are general in nature and have been applied to many different industries to protect free-market competition successfully over a long period of time despite changes in the economy and the increasing pace of technological advancement. One of the great benefits of the Sherman and Clayton Acts is their adaptability to new economic conditions without sacrificing their ability to protect competition.

We look forward to reading the report in depth and considering all of the Commission's recommendations. The Antitrust Division appreciates the service and commitment of the AMC Commissioners.