## 1st Off

### Space Commercialization is key to Space Deterrence.

#### Klein 19

John J. Understanding space strategy: the art of war in space. Routledge, 2019. (a Senior Fellow and Strategist at Falcon Research, Inc. and Adjunct Professor at George Washington University’s Space Policy Institute)//Elmer

Recent U.S. space policy initiatives underscore the **[there are] far-reaching benefits of commercial space activities**. The White House revived the National Space Council to foster closer coordination, cooperation, and exchange of technology and information among the civil, national security, and commercial space sectors.1 National Space Policy Directive 2 seeks to promote economic growth by streamlining U.S. regulations on the commercial use of space.2 While the defense community generally appreciates the value of services and capabilities derived from the commercial space sector—including space launch, Earth observation, and satellite communications—it often overlooks one area of strategic importance: deterrence. To address the current shortcoming in understanding, this paper first describes the concept of deterrence, along with how space mission assurance and resilience fit into the framework. After explaining how **commercial space** **capabilities** **may influence** the **decision calculus of potential adversaries**, this study presents actionable recommendations for the U.S. Department of Defense (DoD) to address current problem areas. Ultimately, DoD—including the soon-to-be reestablished U.S. Space Command and possibly a new U.S. Space Force—should incorporate the benefits and capabilities of the commercial space sector into flexible deterrent options and applicable campaign and contingency plans. Deterrence, Mission Assurance, and Resilience Thomas Schelling, the dean of modern deterrence theory, held that deterrence refers to persuading a potential enemy that it is in its interest to avoid certain courses of activity.3 One component of deterrence theory lies in an understanding that the threat of credible and potentially overwhelming force or other retaliatory action against any would-be adversary is sufficient to deter most potential aggressors from conducting hostile actions. This idea is also referred to as deterrence by punishment.4 The second salient component of deterrence theory is denial. According to Glenn Snyder’s definition, deterrence by denial is “the capability to deny the other party any gains from the move which is to be deterred.”5 The 2018 U.S. National Defense Strategy (NDS) highlights deterrence, and specifically deterrence by denial, as a vital component of national security. The NDS notes that the primary objectives of the United States include deterring adversaries from pursuing aggression and preventing hostile actions against vital U.S. interests.6 The strategy also observes that deterring conflict necessitates preparing for war during peacetime.7 For the space domain, the peacetime preparedness needed for deterrence by denial occurs in the context of space mission assurance and resilience. Mission assurance entails “a process to protect or ensure the continued function and resilience of capabilities and assets—including personnel, equipment, facilities, networks, information and information systems, infrastructure, and supply chains—critical to the performance of DoD mission essential functions in any operating environment or condition.”8 Similar to mission assurance but with a different focus, resilience is an architecture’s ability to support mission success with higher probability; shorter periods of reduced capability; and across a wider range of scenarios, conditions, and threats, despite hostile action or adverse conditions.9 Resilience may leverage cross-domain solutions, along with commercial and international capabilities.10 Space mission assurance and resilience can prevent a potential adversary from achieving its objectives or realizing any benefit from its aggressive action. These facets of U.S. preparedness help convey the futility of conducting a hostile act. Consequently, they enhance deterrence by denial. Commercial Space Enables Deterrence The commercial space sector directly promotes mission assurance and resilience efforts. This is in part due to the distributed and diversified nature of commercial space launch and satellites services. Distribution refers to the use of a number of nodes, working together, to perform the same mission or functions as a single node; diversification describes contributing to the same mission in multiple ways, using different platforms, orbits, or systems and capabilities.11 The 2017 U.S. National Security Strategy, in noting the benefits derived from the commercial space industry, states that DoD partners with the commercial sector’s capabilities to improve the U.S. space architecture’s resilience.12 Although U.S. policy and joint doctrine frequently acknowledge the role of the commercial space sector in space mission assurance and resilience, there is little recognition that day-to-day contributions from the commercial industry assists in deterring would-be adversaries. The commercial space sector contributes to deterrence by denial through multi-domain solutions that are distributed and diversified. These can deter potential adversaries from pursuing offensive actions against space-related systems. Commercial launch providers enhance deterrence by providing options for getting payloads into orbit. These include diverse space launch capabilities such as small and responsive launch vehicles, along with larger, reusable launch vehicles; launch rideshares for secondary payloads; and government payloads on commercial satellites. Various on-orbit systems also promote deterrence. For example, if an aggressor damages a commercial remote sensing satellite during hostilities, similar **commercial satellites** in a different orbital regime, or those of the same constellation, may **provide** the **needed imagery.** If satellite communications are jammed or degraded, commercial service providers can reroute satellite communications through their own networks, or potentially through the networks of another company using a different portion of the frequency spectrum. Regarding deterrence by punishment efforts, the commercial space sector can play a role, albeit an indirect one, through improved space situational awareness (SSA) and space forensics (including digital forensics and multispectral imagery). The commercial industry may support the attribution process following a hostile or illegal act in space through its increasingly proliferating network of SSA ground telescopes and other terrestrial tracking systems. The DoD may also leverage the commercial space sector’s cyber expertise to support digital forensic efforts to help determine the source of an attack. **By supporting** a **credible** and transparent **attribution** process, **commercial partners may cause a would-be adversary to act differently** **if [an adversary]**  it **perceives that its** aggressive, illegal, or otherwise nefarious **actions will be disclosed.** Doing so can help bolster the perceived ability to conduct a legitimate response following a hostile attack, which may improve deterrence by punishment efforts. Commercial space capabilities may also facilitate the application of force to punish a potential aggressor. In addition to traditional military space systems, **commercial satellite imagery and communication capabilities may be used in cueing and targeting for punitive strikes against an aggressor.** Although the commercial space sector is not expected to be involved directly in the use of retaliatory force following a hostile act, commercial partners may help in **provid[e]**ingthe **information used to identify those responsible and** to **facilitate** any **consequent targeting efforts.**

### Commercial actors, with public actors, deter adversaries.

**Klein 20**

​​John Klein, 6-5-2020, "Op-ed," SpaceNews, <https://spacenews.com/op-ed-to-deter-attacks-on-satellites-u-s-needs-a-strategy-to-identify-bad-actor> Chaminade AS

Because of the global reach and international nature of the space domain, allies and commercial partners must be part of a space attribution framework. **Including allies and commercial partners will greatly increase** the sharing of SSA, **intelligence collection, and forensics science data.** The existing Five Eyes (FVEY) intelligence alliance — Australia, Canada, New Zealand, the United Kingdom and United States — will be helpful for space attribution and intelligence sharing. Each country brings geographically specific or distinct tasking, collection, processing, exploitation, and dissemination methods that benefit the alliance and a possible collective self-defense response to harmful interference or attack. Furthermore, the Combined Space Operations initiative, which currently includes representatives from the FVEY partners plus France and Germany, seeks to enhance space collaboration by discussing operational concepts and infrastructure requirements. **Commercial partners** will also **enhance the space attribution process, because of the sheer number of commercial** small **sat**ellite**s** presently **operating**, along with those constellations planned for the future. The ongoing growth in proliferated low Earth orbit satellites has led to large **commercial constellations perform**ing communications, Earth **observation**, change **detection**, data **analytics**, **and other activities.** Some **commercial sat**ellite **communication providers** may **have** comprehensive **knowledge** **and** digital **forensics capabilities concerning** **interference** and attacks **against** their **networks** and those of other satellite operators, **which can** be used to **inform attribution.** The Commercial Integration Cell, which operates within the Combined Space Operations Center, could help integrate commercial capabilities into the attribution process.

### This is vital because Space Deterrence Breakdowns cause War and Extinction*.*

#### Parker 17

Clifton Parker 1-24-2017 “Deterrence in space key to U.S. security”<https://cisac.fsi.stanford.edu/news/deterrence-space-key-us-security> (Policy Analyst at the Stanford Center for International Security and Cooperation)//Elmer

**Space is more important than ever for** the **security** of the United States, but it’s almost like the Wild West in terms of behavior, a top general said today. Air Force Gen. [John Hyten](http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/108115/general-john-e-hyten.aspx), commander of the U.S. Strategic Command, spoke Jan. 24 at Stanford’s Center for International Security and Cooperation. His [talk](http://cisac.fsi.stanford.edu/events/us-strategic-command-perspectives-deterrence-and-assurance) was titled, “U.S. Strategic Command Perspectives on Deterrence and Assurance.” Hyten said, “**Space is fundamental to every single military operation that occurs on the planet** today.” He added that “there is no such thing as **a war in space**,” because it **would affect all** realms of **human existence**, due to the satellite systems. Hyten advocates “**[without] strategic deterrence**” and “norms of behavior” across space as well as land, water and cyberspace. Otherwise, **rivals like China and Russia will** only threaten U.S. interests in space and **wreak havoc for humanity** below, he said. Most of contemporary life depends on systems connected to space. Hyten also addressed other topics, including recent proposals by some to upgrade the country’s missile defense systems. “You just don’t snap your fingers and build a state-of-the-art anything overnight,” Hyten said, adding that he has not yet spoken to Trump administration officials about the issue. “We need a powerful military,” but a severe budget crunch makes “reasonable solutions” more likely than expensive and unrealistic ones. On the upgrade front, Hyten said he favors a long-range strike missile system to replace existing cruise missiles; a better air-to-air missile for the Air Force; and an improved missile defense ground base interceptor. ‘Critically dependent’ From satellites to global-positioning systems **GPS**, space has transformed human life – and the military – in the 21st century, Hyten said. In terms of defining "space," the U.S. designates people who travel above an altitude of 50 miles as astronauts. As the commander of the U.S. Strategic Command, Hyten oversees the control of U.S. strategic forces, providing options for the president and secretary of defense. In particular, this command is charged with space operations (such as military satellites), information operations (such as information warfare), missile defense, **global command and control**, intelligence, **surveillance, and reconnaissance**, global strike and strategic deterrence (the U.S. nuclear arsenal), and combating weapons of mass destruction. Hyten explained that every drone, fighter jet, bomber, ship and soldier is **critically dependent on space** to conduct their own operations. All cell phones use space, and the GPS command systems overall are managed at Strategic Command, he said. “No soldier has to worry about what’s over the next hill,” he said, describing GPS capabilities, which have fundamentally transformed humanity’s way of life. Space needs to be available for exploration, he said. “I watch what goes on in space, and I worry about us destroying that environment for future generations.” He said that too many drifting objects and debris exist – about 22,000 right now. A recent Chinese satellite interception created a couple thousand more debris objects that now circle about the Earth at various altitudes and pose the risk of striking satellites. “We track every object in space” now, Hyten said, urging “international norms of behavior in space.” He added, “We have to deter bad behavior on space. We have to deter war in space. It’s bad for everybody. We could trash that forever.” But now rivals like **China and Russia** **are** **building weapons to deploy in** the lower levels of **space**. “How do we prevent this? It’s bigger than a space problem,” he said. **Deterring conflict in** the cyber, nuclear and **[the] space realm**s is the strategic deterrence goal of the 21st century, Hyten said. “The **[is the] best way** to prevent war is **to be prepared** for war,” he said. Hyten believes the U.S. needs a fundamentally different debate about deterrence. And it all starts with nuclear weapons. “In my deepest heart, I wish I didn’t have to worry about nuclear weapons,” he said. Hyten described his job as “pretty sobering, it’s not easy.” But he also noted the mass violence of the world prior to 1945 when the first atomic bomb was used. Roughly 80 million people died from 1939 to 1945 during World War II. Consider that in the 10-plus years of the Vietnam War, 58,000 Americans were killed. That’s equivalent to two days of deaths in WWII, he said. In a world without nuclear weapons, a rise in conventional warfare would produce great numbers of mass casualties, Hyten said. About war, he said, “Once you see it up close, no human will ever want to experience it.” Though America has “crazy enemies” right now, in many ways the world is more safe than during WWII, Hyten said. The irony is that nuclear weapons deterrence has kept us from the type of mass killings known in events like WWII. But the U.S. must know how to use its nuclear deterrence effectively. Looking ahead, Hyten said the U.S. needs to think about space as a potential war environment. An attack in space might not mean a response in space, but on the Earth. Hyten describes space as the domain that people look up at it and still dream about. “I love to look at the stars,” but said he wants to make sure he’s not looking up at junk orbiting in the atmosphere.

## 2nd Off

### Current business sentiment promises a slow but steady recovery.

#### Zandi 21

[Dr. Mark Zandi, PhD from UPenn, economist, and director of economic research at Moody’s Analytics, 11/15/21, “Moody's Analytics Survey of Business Confidence,”<https://www.economy.com/economicview/indicator/usa_dsbc/5C438EAA-8AA1-484E-8931-62208FCACE22>] Recut by Chaminade AS

Abstracting from the weekly ups and downs of responses to the global business survey, business **sentiment remains** stuck **consistent with a** slowly **recovering** global **economy**. Most encouraging, more than one-third of respondents to the survey say present business **conditions are improving** and more than half say their sales are strengthening. **Hiring and investment** intentions aren’t as strong, but they are much **improved** since the dark days of the pandemic. Demand for office space remains depressed, inventory accumulation is weak, and though **financial conditions are good**, they aren’t as good as they were prior to the pandemic.

### Consistent space regulations are key to business confidence – stopping appropriation is seen as a 180.

#### Christensen 16

[Ian Christensen is a Project Manager at Secure World Foundation, and has eight years of experience as a consultant and analyst focused on international and domestic commercial space, satellite, and aviation markets.  "Building Confidence and Reducing Risk in Space Resources Policy," Room, 2016, The Space Journalhttps://room.eu.com/article/building-confidence-and-reducing-risk-in-space-resources-policy/] Recut Chaminade AS

Like most areas of economic activity, **space** resource utilisation **business plans** are **based upon the ability to access a resource,** produce a product, service, or goods based from the resource, **and produce revenue** from that product based on established market activities. An economic system requires a level of regulation and oversight to ensure it functions. **Regulation** and governmental oversight **is part of a**n overall market **framework** **that provides stability and confidence** in validity for commercial entities and those that invest in them. Just as the commercial companies are in the initial stages of developing and validating hardware, governments have begun to establish regulatory and policy frameworks.

### Unpredictable shifts ruin Confidence – prevents growth and recovery.

#### Cambon 21

Sarah Chaney Cambon 21, Reporter on The Wall Street Journal's Economics Team, BA in Business Journalism from the University of North Carolina-Chapel Hill, “Capital-Spending Surge Further Lifts Economic Recovery”, Wall Street Journal, 6/27/2021, <https://www.wsj.com/articles/capital-spending-surge-further-lifts-economic-recovery-11624798800> Recut Chaminade AS

**Companies** are **ramp**ing **up** orders for computers, machinery and software **as they grow** more **confident** in the outlook. Nonresidential fixed investment, a proxy for business spending, rose at a seasonally adjusted annual rate of 11.7% in the first quarter, led by growth in software and tech-equipment spending, according to the Commerce Department. Business investment also logged double-digit gains in the third and fourth quarters last year after falling during pandemic-related shutdowns. It is now higher than its pre-pandemic peak. Orders for nondefense capital goods excluding aircraft, another measure for business investment, are near the highest levels for records tracing back to the 1990s, separate Commerce Department figures show. “**Business** **investment** **has** really **been an important engine powering** the U.S. economic **recovery**,” said Robert Rosener, senior U.S. economist at Morgan Stanley. “In our outlook for the economy, it’s certainly one of the bright spots.” Consumer spending, which accounts for about two-thirds of economic output, is driving the early stages of the recovery. Americans, flush with savings and government stimulus checks, are spending more on goods and services, which they shunned for much of the pandemic. Robust capital investment will be key to ensuring that the recovery maintains strength after the spending boost from fiscal stimulus and business reopenings eventually fades, according to some economists. Rising business investment helps fuel economic output. It also lifts worker productivity, or output per hour. That metric grew at a sluggish pace throughout the last economic expansion but is now showing signs of resurgence. The recovery in business investment is shaping up to be much stronger than in the years following the 2007-09 recession. “The events especially in late ’08, early ’09 put a lot of businesses really close to the edge,” said Phil Suttle, founder of Suttle Economics. “I think a lot of them said, ‘We’ve just got to be really cautious for a long while.’” Businesses appear to be less risk-averse now, he said. After the financial crisis, businesses grew by adding workers, rather than investing in capital. Hiring was more attractive than capital spending because labor was abundant and relatively cheap. Now the supply of workers is tight. Companies are raising pay to lure employees. As a result, many firms have more incentive to grow by investing in capital. Economists at Morgan Stanley predict that U.S. capital spending will rise to 116% of prerecession levels after three years. By comparison, investment took 10 years to reach those levels once the 2007-09 recession hit. Company executives are increasingly confident in the economy’s trajectory. The Business Roundtable’s economic-outlook index—a composite of large companies’ plans for hiring and spending, as well as sales projections—increased by nine points in the second quarter to 116, just below 2018’s record high, according to a survey conducted between May 25 and June 9. In the second quarter, the share of companies planning to boost capital investment increased to 59% from 57% in the first. “We’re seeing really strong reopening demand, and a lot of times capital investment follows that,” said Joe Song, senior U.S. economist at BofA Securities. Mr. Song added that **less uncertainty** regarding trade tensions between the U.S. and China should further **underpin** **business confidence** and investment. “At the very least, **businesses** will **understand the strategy** that the **Biden** administration is trying to **follow and** will be able to **plan around that**,” he said.

### Econ decline as a result in business confidence drop fuels nationalism and undermines deterrence leads to great power war

#### Summers 17

* Think Germany after financial struggles post WWI

Lawrence H. Summers 17. Secretary of the Treasury (1999-2001) and Director of the US National Economic Council (2009-2010), former president of Harvard University, where he is currently University Professor. “Will the Center Hold?” *Project Syndicate*. 12/21/2017. <https://www.project-syndicate.org/onpoint/recession-or-financial-crisis-political-fallout-by-lawrence-h--summers-2017-12?a_la=english&a_d=5a37edac78b6c709b8d260dd&a_m=&a_a=click&a_s=&a_p=%2Fsection%2Feconomics&a_li=recession-or-financial-crisis-political-fallout-by-lawrence-h--summers-2017-12&a_pa=section-commentaries&a_ps=> Recut Chaminade AS

**There is** also **the question of financial institutions’ health**. While major firms appear far better capitalized and far more liquid than they were prior to the crisis, **market indicators of risk suggest we may not be quite as far out of the woods as many suppose. Despite apparently large increases in capital and consequent declines in leverage, it does not appear that bank stocks have become far less volatile**, as financial theory would predict if capital had become abundant. Financial markets are widely cited, including by US President Donald Trump, as providing comfort in the current moment. But **a relapse into financial crisis would likely have catastrophic** political **consequences, sweeping into power even more toxic populist nationalists. In such a scenario, the center will not hold**. Beyond the kind of near-term risks that markets price, **there is the question of an economic downturn**. The good news is that sentiment is positive in most of the world. Inflation seems unlikely to accelerate out of control and force a lurch toward contractionary fiscal and monetary policies. Most forecasters regard the near-term risk of recession as low. But **recessions are never predicted successfully, even six months in advance. The current expansion in the US has gone on for a long time, and the risk of policy mistakes** there **is** very **real**, owing to highly problematic economic leadership in the Trump administration. I would put the annual probability of recession in the coming years at 20-25%. So the odds are better than even that the US economy will fall into recession in the next three years. **The risk from a purely economic point of view is that the traditional strategy for battling recession** – a reduction of 500 basis points in the federal funds rate – **will be unavailable this year, given the zero lower bound on interest rates. Nor is it clear that the will or the room for fiscal expansion will exist**. **This means that the next recession**, like the last, **may well be protracted and deep, with severe global consequences. And the political capacity for a global response, like that on display at the** London **G-20 Summit in 2009, appears to be absent** as well. Just compare the global visions of US President Barack Obama and UK Prime Minister Gordon Brown back then with those of Trump and Prime Minister Theresa May today. I shudder to think what a serious recession will mean for politics and policy. **It is hard to imagine avoiding a resurgence of protectionism, populism, and scapegoating**. In such a scenario, as with another financial crisis, the center will not hold. But **the greatest risk** in the next few years, I believe, is neither a market meltdown nor a recession. It **is** instead **a political doom loop in which voters’ conclusion that government does not work effectively for them becomes a self-fulfilling prophecy. Candidates elected on platforms of resentment delegitimize the governments they lead, fueling further resentment and even more problematic new leaders. Cynicism pervades**. How else can one explain how the candidacy of Roy Moore for a US Senate seat? Moore, who was twice dismissed for cause from his post on the Alabama Supreme Court, and who is credibly charged with sexually assaulting teenage girls when he was in his 30s, could enter the US Senate as many of his colleagues look the other way. **If a country’s citizens lose confidence in their government’s ability to improve their lives, the government has an incentive to rally popular support by focusing attention on threats** that only it can address. **That is why in societies pervaded by anger and uncertainty about the future, the temptation to stigmatize minority groups increases. And it is why there is a tendency** for officials **to magnify foreign threats**. **We are seeing this** phenomenon **all over the world**. Russian President Vladimir **Putin**, Turkish President Recep Tayyip **Erdoğan, and** Chinese President **Xi** Jinping **have all made nationalism a central part of their governing strategy. So**, too, **has Trump, who has** explicitly **rejected** the international **community in favor of the idea that there is only a ceaseless struggle among nation-states** for competitive advantage. When the world’s preeminent power, having upheld the idea of international community for nearly 75 years, rejects it in favor of ad hoc deal making, others have no choice but to follow suit. **Countries that can no longer rely on the US feel pressure to provide for their own security. America’s adversaries inevitably will seek to fill the voids left behind as the US retrenches**.

# Case