COUNCIL OF COUNCILS

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Sunday, May 18, 2025 5:00 p.m. to 8:00 p.m.

Monday, May 19, 2025

8:30 a.m. to 5:00 p.m. 6:30 p.m. to 9:30 p.m.

Tuesday, May 20, 2025 8:30 a.m. to 2:30 p.m.

The 2025 Council of Councils Annual Conference *Background Memos*

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An Initiative of the Council on Foreign Relations



Session One

The Future of the World Order After Disruption: No Rules, New Rules, Spheres of Influence, and the Limits and Prospects for International Cooperation



Background Memo Building a Transformed World Out of the Current Global Transition

Council of Councils Annual Conference May 18–20, 2025 Council on Foreign Relations, New York, NY

Fonteh Akum, Institute for Security Studies (ISS)

The Peace of Westphalia in 1648 established the foundations for state-driven international relations based on territoriality and sovereignty in Europe (though it allowed colonial wars of conquest, occupation, and independence elsewhere). Through treaty negotiations, the state, in the form of Europe's republics and monarchies, became the most important actor in international relations.

In the three hundred years between Westphalia and the Potsdam Conference in 1945, humanity experienced over twenty major conflicts, including pandemics, economic calamities, and war on a global scale. The multilateral system that emerged from the ashes of the Second World War was intended, as inscribed in the UN Charter, to "save succeeding generations from the scourge of war."

Today, eighty years after the UN Conference on International Organizations took place in San Francisco, the world is experiencing tectonic shifts that will inevitably push the multilateral system toward an inflection point.

Five countervailing yet integrated forces characterize this inflection point. First, there is the rather controversial issue of state fragility around the globe, with implications for the state's capacity to deliver at home while harnessing regional and global partnerships. Whether considering advanced or developing economies, surveys from the Organization for Economic Cooperation and Development (OECD) and Afrobarometer agree that trust in public institutions is declining. Whatever the drivers of this decline in trust are, this situation indicates destabilization and governance in crisis. States remain the central actors in multilateralism, and the stability and predictability of their actions fundamentally drive global stability.

Second, the global power landscape is changing. This shift is marked by the simultaneous resurgence of great power rivalry between the United States and China, exemplified by the latest round of trade wars, as well as the rise of regional middle powers. Despite this renewed great power rivalry, increasingly active and agile regional middle powers are reshaping the incentive structures that undergird alliance formation. Meanwhile, the growing insularity of African regional powers limits their capacity to drive cooperation and effectively address regional drivers and manifestations of insecurity. These power dynamics have significant implications for the emerging international order.

State fragility and the rise of regional middle powers are linked to the third factor: the changing effectiveness of hard power in achieving desired outcomes both nationally and internationally. From Iraq and Afghanistan to Ukraine, strong military powers have consistently failed to achieve desired battlefield outcomes that would have expanded their spheres of control and influence beyond national borders. Against the backdrop of changing nature and use of power, old and new players are redefining the parameters of influence. Power in therefore deployed through clientelist relationships backed by military force, thereby demonstrating the potency of smart and soft power in building friendships for comparative advantage.

Fourth, the growing power of global corporations—encompassing social, financial, and intelligence technology—shapes information flows and influences both soft and smart power through data access. This increase in powers is evident in the engagement of corporations with states competing for an edge in the nanochips race, as well as in their efforts to privatize the race for outer space resources or to compete over critical raw mineral assets.

The fifth inflection point is the need for states to address transboundary threats. Pandemics, cyberthreats, conflicts, and accelerating climate risks represent cross-border, pernicious, and unpredictable risks necessitating effective preventive responses. For example, the 2023 earthquakes in Türkiye and Syria were not circumscribed to one national border and are increasingly the norm.

These disruptive forces drive states to pursue the reification of territoriality and sovereignty by seeking greater autonomy in controlling economic, political, and cultural assets. This has also led to a transactional recourse to mini-lateral frameworks, which fosters multilateral fractures rather than streamlining efforts in pursuit of global public goods.

This pattern increasingly conflicts with inherent globalizing currents, metaphorically crystallizing consensus from Washington, DC, to Niamey, that the existing regional and global multilateral frameworks are ineffective in addressing their unique and differentiated challenges and, therefore, in serving people and planet.

While there is a preoccupation with institutional legitimacy, efficiency, and credibility at regional and global levels, disagreement persists on the pathways to delivering a more effective, inclusive, and equitable international law-based global governance framework, or even whether inclusion and equity should accompany effectiveness as outcomes of global systemic reforms. Despite the strong undercurrent of growing competition, cooperation remains relevant in addressing transcendental global challenges from conflict to climate and pandemics.

No countries are more vulnerable to the extreme shocks from global systemic transitional pressures than those at the lowest rungs of the human development index—the majority of which are in Africa. This exogenous vulnerability persists despite the continent's non-financial contributions to global productivity and well-being.

The current global transition could deliver a transformed multilateral system driven by strong states without ceding to the temptation of another world war as a catalyst. To achieve transformative outcomes, imperatives of international law-based order, inclusion, and equity should regulate issues of power, agency, and influence.

World order exists only to the extent that there is consensus about the codified rules that govern the system and their impartial enforcement. Inherent to the post-Potsdam global system was the imperative to balance power

among countries with nuclear capabilities and endow existing powers with the responsibility to impose order on the rest of the world. However, the reality of power differentials between the states following Potsdam effectively defined roles and responsibilities, while infusing elements of influence, , security guarantees, and hegemony. While not distorting the rules themselves, these elements determine their application in a field of competing interests.

As these forces take shape, African countries grapple with capitalising on their opportunities, curbing vulnerability, and enhancing resilience. Further achieving those goals would make the difference between African countries being players or pawns in global order.

Despite uncertainties, current global transitions offer opportunities for cooperative solutions to national, regional, and global challenges. Given the cross-border nature of conflict, epidemics, climate, and organised criminal threats, regional cooperative arrangements are crucial for enhancing territorial security within Africa. The current conflict systems in the Sahel, the Lake Chad Basin, the Great Lakes, and the Horn of Africa demonstrate the necessity for effective territoriality harnessed through regional cooperation. They also show the simultaneous need to rework social contracts that consolidate effective statehood.

For African countries to rise beyond tokenism and altruism from the West in the emerging global order, they must contend with a changing landscape of power and influence while strategically mobilising and deploying both smart and soft power assets. All fifty-four African countries will not wield the same levels of smart and soft power, but their political and economic comparative advantages offer the bedrock for regional anchor states. Regional anchor states must balance national legitimacy and regional consensus in advancing integrated economic development and human security outcomes.

The African Union has been instrumental in establishing norms such as non-indifference that materialise into the responsibility to protect, subsidiarity, and complementarity, amongst others. Operational challenges in the implementation of these norms need not detract from their potential value in fostering prevention and responses to peace, security, and developmental challenges.

With the largest representative geographic bloc at the UN General Assembly, the African Union will benefit from concerting African agency through the development of common positions on crucial issues relating to the reform of the global financial and security establishment and on the transcendental challenges facing humanity. Fomenting this action by mobilising like-minded states would be transformative.

Finally, strong and smart institutional capabilities matter in restoring normative primacy that drives actions in response to global challenges. The equitable operationalisation of norms addresses the issue of double standards in the application of international law, which currently undermines the credibility of the existing multilateral system.



Background Memo The Future of the World Order After Disruption: No Rules, New Rules, Spheres of Influence, and the Limits and Prospects for International Cooperation

Council of Councils Annual Conference May 18–20, 2025 Council on Foreign Relations, New York, NY

Carlos Ivan Simonsen Leal, Getulio Vargas Foundation (FGV)

Many interpret the current moment as one of rupture, in which there is greater risk of international relations volatility than in previous decades. Ironically, those repeated warnings of potential turmoil raise the danger of a self-fulfilling prophecy, as fear could shape the very outcomes that analysts seek to avoid.

Historical patterns indicate that transformations in world order often coincide with phases of geopolitical disruption. Yet it remains challenging to identify the principal drivers of these historic shifts as they unfold in real time.

Typically, minor changes precede or follow small disruptions, often going unnoticed at first. Over time, their cumulative effects intensify, but few respond before catastrophes are knocking at the door. For example, China's accession to the World Trade Organization (WTO) represented a critical turning point in global trade by incorporating a totalitarian state into free international commerce—an opportunity the Soviet Union never had. This shift, coupled with the widespread push toward inexpensive outsourcing to boost profits and quarterly bonuses, constrained real incomes for blue-collar middle-class workers across much of the Group of Seven (G7). These economic pressures have contributed to internal political changes in numerous countries, which in turn fuel current trade frictions.

What we are witnessing today is, most likely, not the culmination of those changes, but the conclusion of the first stage of a complex transition.

Even as this first stage concludes, the shifts in economic power and political influence have been notable. The digital revolution has introduced unprecedented connectivity, reshaping how nations interact, conduct business, and wage conflicts. Cybersecurity, digital espionage, and information warfare have become essential elements of national security strategies. The influence of social media on public opinion and political outcomes cannot be minimized. Artificial intelligence and automation will redefine labor markets, potentially exacerbating existing inequalities and social unrest.

The complexity of global interdependencies suggests that what comes next will be a more fragmented international order, in which multiple power centers coexist and at times compete. This multipolar structure will demand innovative approaches to diplomacy and international cooperation.

Ultimately, the future will likely be shaped by a combination of historical trends, current disruptions, and emerging technological developments. The capacity to adapt and anticipate those changes will determine the relative success of nations on the global stage.

Several practical issues remain to be clarified. Short of envisaging a major conflict involving significant powers, I pose five questions:

- What are Europe's future economic and geopolitical roles?
- What will be the result of the ongoing trade war?
- How will the geopolitical balance in the South China Sea evolve?
- Is the concept of a reserve currency still valid in a multipolar world governed by regional rules?
- What is the true relevance of the BRICS?

At present, definitive answers to the five questions remain elusive; they belong to the next stage of an international game whose rules are still being written.

The intellectual residue of the Cold War continues to shape policymaking in both the United States and Russia, while European mistrust of Moscow reaches even further back. A pertinent inquiry is whether Washington and European capitals perceive present dangers in equal measure and, consequently, how each evaluates current and prospective sacrifices.

Questions remain over whether Europe is prepared to operate under a single budgetary framework, maintain a unified military command, allocate a larger share of resources to defence, and recalibrate its social welfare model.

A further question is whether Europe now holds diminished salience for many U.S. political actors and voters relative to earlier periods. This shift does not imply indifference; rather, it reflects a prevailing view that China has become the principal strategic rival and that Europe has benefited disproportionately from U.S. security guarantees—a situation some in Washington consider in need of prompt adjustment.

Comparable dissonant perspectives appear worldwide. A coherent global order cannot crystallise until certain foundational views converge, permitting the negotiation and application of new rules. Whether such convergence is attainable will hinge on demographic trends, the distribution of natural resources, technological capabilities, internal political cohesion, and the relative power of the principal actors.

In the near term, U.S. engagement in international cooperation may contract under fiscal constraints. Other states will likely assume part of the resulting burden. Even after budgetary pressures ease, renewed spending in this domain will depend on domestic political dynamics. It may take a long time for Washington to return to its earlier level of engagement.

A reduction in U.S. participation in international cooperation is also likely to weaken its cultural dominance. Some existing rules will probably persist, at least superficially. Whether they will ultimately coalesce into a coherent framework remains uncertain. Identifying which actors will set the rules in a new multipolar environment remains challenging. Should the number of poles be relatively small, an agreement could be reached more rapidly. The more effectively these principal poles interact, the greater the likelihood of converging on a single, workable set of rules. Initially, the absence of universally accepted rules may benefit hegemonic powers in certain markets such as technology. Over time, however, this weakened system is likely to fragment these markets and slow the pace of innovation. As a result, relative prices of innovation and natural resources may decrease. A parallel adjustment in external accounts—shrinking trade surpluses in services alongside persistent deficits in other current-account items—could erode the position of net creditor nations and even push some into debtor status.

Advanced economies may discover mechanisms that enable simultaneous competition and cooperation. Should this occur, an acceptable evolutionary path could be shaped by these states, their corporations, and the trade-oriented industries that stand to gain most.

Diplomatic capacity remains largely intact, though the introduction of additional principal actors may be required to foster a measure of strategic amnesia. Yet the façade of trust has already eroded, and leadership capable of orchestrating the resulting cacophony has not been tested. Consequently, the probability of miscommunication is significant.

Conversely, autocratic leaders—though operating under distinct constraints—also depend on domestic opinion. They may feel compelled to respond based on their publics' interpretations of messages and actions issued by foreign counterparts.

Finally, over the long term, states and their societies are expected to adapt. A phase of slower growth may ensue, yet sustaining peace will require that food and energy supplies remain dependable.

The complexity of geopolitics today requires a nuanced approach, balancing immediate needs with long-term strategies in a world that will have closed commercial blocs for technology.

Today's geopolitical complexity demands a nuanced approach that reconciles immediate imperatives with long-term objectives amid the emergence of technology-centred closed commercial blocs.



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Session Five The Future Frontier of Space: Cooperation, Competition, or Conflict?



Background Memo The Changing Geopolitics of Space

Council of Councils Annual Conference May 18–20, 2025 Council on Foreign Relations, New York, NY

Esther D. Brimmer, Council on Foreign Relations (CFR)

Modern life depends on data transmitted by assets in space. Every day, billions of people access information about weather, driving directions, or news updates provided by satellites orbiting the Earth. The number of satellites in space has increased dramatically in just a few years, and the number of satellites launched quadrupled between 2019 and 2023. As of July 2024, there were over ten thousand functioning satellites orbiting the Earth, with 60 percent owned by Starlink.

Space has become an international political issue because many countries benefit from its use. Currently, over ninety countries have satellites or other assets there, and innovation by commercial space companies has dramatically reduced the cost of launching a satellite into space. A country—or company—no longer needs to have its own launch capacity as it can buy a spot in somebody else's payload. Thus, the growing commercial sector has enabled more countries to use space—thereby changing the politics of the domain.

Human activity in space can be divided into three categories: civil, economic, and national security. There are dramatic changes occurring in all three areas. Policymakers will need to make important decisions to shape the future of human activity in space which could affect the lives of all people on Earth.

Civil space activities are largely conducted for scientific exploration. These activities encompass extraordinary scientific feats of discovery and analysis—expanding our understanding of the nature of the Earth, the Moon, and the solar system. Examples include the 1961 trip to space by cosmonaut Yuri Gagarin, the 1969 walk on the Moon by Apollo 11 astronauts Neil Armstrong and Buzz Aldrin, and the 2024 collection of lunar samples from the far side of the Moon by the Chang'e-6 robotic lander. Such endeavors uplift people on Earth and create a deeper understanding of the nature of our universe. It has been over fifty years since a human walked on the Moon, but there are now plans being made by the United States, China, and other countries to return to conduct further research.

The nature of competition in civil space has changed. In the 1960s, space flight was dominated by Cold War tensions between the United States and the Soviet Union. The period of détente was symbolized by the Apollo-

Soyuz docking in 1975. The end of the Cold War reduced strategic tensions and increased opportunities for other activities in space. Today, even more countries are active in this area.

Five countries have made successful "soft landings" on the Moon: the Soviet Union and the United States in 1966, China in 2013, India in 2023, and Japan in 2024. In addition, two private companies have landed devices on the Moon: Intuitive Machines in 2024 and Firefly Aerospace in 2025. Both are part of NASA's Commercial Lunar Payload Service, which hires private companies to help deliver payloads from NASA and other spacefaring entities to the Moon. Japan's ispace company is scheduled to land on the Moon in June 2025.

The most dramatic change in spacefaring is the expansion of private companies providing services in and through space. The most visible are launch providers, such as SpaceX, but also important are companies that provide services from space such as Earth observation. For example, farmers around the world can consult information provided by satellites about growing conditions that helps enhance productivity and output. The space economy is expected to grow dramatically over the next decade as companies in multiple countries expand space-based services that can improve life on Earth.

The most significant expansion of space economy is in the field of communications. The best-known example is SpaceX's Starlink megaconstellations, which have dramatically increased the number of satellites in space. As of March 2025, there are over seven thousand operational Starlink satellites in orbit. However, there are other constellations being launched as well. In August 2024, Shanghai Spacecom Satellite Technology Ltd., a Chinese state-owned company, launched its first eighteen satellites for its Qianfan "Thousand Sails" megaconstellation, which could have fourteen thousand satellites once fully deployed. In April 2025, the first twenty-seven satellites for Amazon's Project Kuiper megaconstellation were launched. The initial phase of this constellation is expected to contain 3,200 satellites.

These megaconstellations are located in low Earth orbit (LEO), which is the zone of space from the edge of Earth's atmosphere (using the Kármán line at 100 kilometers, or 62 miles) up to 2,000 kilometers, or 1,243 miles. LEO is high-value celestial real estate, as operations there can be supported from the Earth. The International Space Station and the Tiangong Space Station also orbit there.

These innovations in the commercial space economy have occurred in an era of relative peace. Space assets have long been used for observation to verify arms control agreements. The end of the Cold War created a period in which the great powers reduced military competition. Still, there were also important advances in the use of space for national security purposes, as was demonstrated in the first Gulf War, when the United States used assets in space to communicate tactical information to military units on the ground. The importance of spacebased communications was further demonstrated by the fact that just before its 2022 invasion of Ukraine, the Russian Federation disabled the ViaSat commercial satellite terminals that provided internet service to Ukraine. Afterwards, Ukraine eventually began to receive vital information via Starlink.

In 2024, U.S. officials claimed publicly that the Russian Federation might be planning either to introduce nuclear-powered satellites into space or, worse, introduce a nuclear weapon into space. Such an action would be a violation of the principal document of space governance, the 1967 Outer Space Treaty (the formal title of which is the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies). The Outer Space Treaty forbids the deployment of weapons of mass destruction in space. This and other treaties, however, do not address the issue of introducing

conventional weapons into space. More clarity about Russian plans will be needed to more effectively address this potential escalation, but it nevertheless remains an area of international concern.

Debates are ongoing over potential agreements for international space traffic management, standards for safe operations in space, and different avenues of cooperation for spacefaring nations. Some models already exist. Over fifty countries are part of the U.S.-led Artemis Accords, a set of principles that set standards for safe behavior in space. The Russian Federation and China have also put together the International Lunar Research Station program, but the components of this program are not publicly available. Participation in these two groups has largely fallen along geopolitical lines. However, it is possible for a country to belong to both programs; as of early May 2025, Thailand is the only example.

The Council on Foreign Relations Task Force Report *Securing Space: A Plan for U.S. Action* posited that there could be improved cooperation among spacefaring countries. The report suggested that there could be targeted space-related engagement between the United States and China on "hotline" communications, space traffic management, and the rescue of spacefarers in distress. A reliable "hotline" for important emergency communications between the United States and China could help them avoid collisions in space. Plans could be made now to improve the interoperability of certain spacecraft to facilitate rescue in space or on the Moon.

Regarding national security issues, countries should continue to band together against the weaponization of space and resist plans to introduce weapons into space. In particular, states should continue to support policies, at the United Nations and elsewhere, that deter the use or testing of ground launched direct-ascent anti-satellite missiles. The UN General Assembly adopted a resolution to this effect in December 2022.

Policymakers could work together to improve international mechanisms to help govern space. It is particularly important to address congestion in LEO, where the number of satellites has increased dramatically. As discussed above, the number of communication satellites in LEO has soared. The International Space Station and the Tiangong Space Station orbit are in LEO, meaning that the human beings who live on these spacecraft are in zones of increasing congestion.

Furthermore, spacecraft may often encounter space debris. Thousands of pieces of debris from the break-up of human-built machinery circulate the globe at over seventeen thousand miles an hour. Space debris can damage a spaceship, and astronauts on space walks have had to shelter in their spacecraft to avoid being hit by dangerous debris. The International Space Station has had to maneuver numerous times out of harm's way. States and companies could cooperate on efforts to remove debris and implement standards on deorbiting defunct spacecraft. However, these solutions would also pose problems, as the disintegration of spacecraft in orbit produces chemicals that could harm the Earth's atmosphere.

There is a need for greater space governance. States should help support the institutions already doing this work within the United Nations, especially the UN Committee on Peaceful Uses of Outer Space (COPUOS). Policymakers also will need to find ways to engage spacefaring companies in governance measures, since these companies have both crucial expertise and a stake in a sustainable space domain. Governments are deciding now how they will operate on the Moon and could look for better ways to cooperate there. A concerted effort should be made to improve space governance so that humanity can benefit from access to information from space while still preserving the environment on Earth—the only planet on which we can live without technological support.





Background Memo The Geopolitics of the New Space Economy

Council of Councils Annual Conference May 18–20, 2025 Council on Foreign Relations, New York, NY

Juliana Süß, German Institute for International and Security Affairs (SWP)

Why Is Space an International Political Issue?

International politics, including the ambitions and strategies of states, are projected into space. This makes space a firm part of the international political landscape and a canvas for collaboration as well as competition.

Satellites form part of the infrastructure that enables essential services, such as bank transactions, navigation, and emergency services. They also aid in providing internet access in certain areas and enhance climate change monitoring.

Satellite services have also become essential for military purposes, such as missile early warning systems, navigation, communication, reconnaissance, and intelligence. As military utility is drawn from space, space structures (whether located on Earth, in space, or the signals in between) are rendered targets for adversarial nations. Though a nation has yet to cross the red line of carrying out a kinetic attack against another state's satellite, there have been temporary and non-kinetic attacks against space assets, such as signal jamming and spoofing, as well as cyberattacks.

The utility we draw from space highlights that this environment needs to be protected and sustained for the use of future generations. Aside from taking action to guarantee a sustainable use of space, governments should openly communicate the dependencies on space in everyday life.

How Are Countries (or Groups of Countries) Expanding Cooperation in Space?

Cooperation in space is taking place between states in both civil and military spaces, including scientific collaboration and shared plans for lunar exploration as well as joint ventures in the building and launch of satellite constellations. Space data, i.e., for Space Situational Awareness, is exchanged among partners regularly.

One of the most ambitious and successful cooperation projects, the International Space Station, is host to American, Canadian, European, Japanese, and Russian spacefarers. However, this collaborative project is set to be decommissioned by 2030, and no direct replacement, at this scale of collaboration, currently in sight.

The biggest collaborations are currently centred around lunar ambitions. China and Russia are leading a group of thirteen countries for the planned International Lunar Research Station. Meanwhile, the United States is leading the Artemis Accords—a conglomerate of over fifty countries that includes plans for lunar exploration and a set of larger nonbinding guidelines and principles on responsible space governance.

European Union (EU) countries are also collaborating on space and published a strategy in 2023 that further highlighted the importance of the safety and security of their own space assets. Moreover, the EU is building its own satellite constellations: Copernicus for Earth observation, Galileo for navigation, and, soon to follow, IRIS² for communications.

Collaboration does not always involve shared investment; NATO is not investing in sovereign capabilities and instead will rely on capabilities put forward by member states. In addition, the Alliance published its space strategy in 2019 and considers space the fifth operational domain.

Space is becoming more readily available to a larger number of countries as they launch their sovereign assets or as they gain access to space as a service in the form of space data available through partner nations or commercial operators. Enhancing cooperation, also with smaller and still advancing space powers, is crucial; it assists the growth of still emerging space powers, as resources and expertise can be shared. The increased potential for the sharing of space data, such as Space Situational Awareness, creates a more encompassing picture of the space environment, rendering it safer. Such efforts, in turn, help build trust, which is elemental for space governance structures, such as how to organise space traffic.

How Has the Growing Commercial Sector Changed the Politics of Space?

Space is no longer solely accessible to great powers. "New Space," referring to the increasing commercialisation of the domain, began in the 1990s and has grown exponentially ever since. Space has "democratised" to an extent: as the cost of launch has decreased significantly, space has become more accessible. At the same time, the entire world has grown more dependent on space.

Commercial companies are able to provide space services, including satellite imagery, that can be bought and used on an individual scale. This means countries do not necessarily have to invest in building sovereign assets for capabilities but can simply access them through commercial means, thus modernising their capabilities without lengthy processes or big budgets. At the same time, this means that countries could also circumvent sanctions and access technologies that would otherwise not be accessible to them, especially if the supply chains of private companies are not tightened up.

The war in Ukraine has shown that a country can utilise commercial space services for military operations. Ukraine has been able to use satellite imagery for intelligence, reconnaissance, and target identification. In addition, the operation of drones has been possible in part through satellite-enabled internet connections.

The commercialisation of space also means that space is becoming a more transparent environment. Activities can be observed, recorded, and published as open-source information. This includes imagery of space assets as

well as the movements of space actors. This has further implications for space governance possibilities, as attribution becomes much easier.

Commercial companies not only fill gaps in the sovereign space infrastructures of states but they can further add resilience and redundancy. NATO has woven commercial capabilities into its existing structures. The U.S. Space Force has already published a Commercial Space Strategy and others should follow suit; commercial integration is necessary, inevitable, and should be considered from the beginning to ensure the security and resilience of the system and the forces that will go on to rely on the services, as well as the potential risks for the contracted company.

All of the benefits of New Space considered, concerns about orbits becoming congested with mega constellations are real and should not be ignored. Opinions diverge on how many satellites are safe to be placed in orbit at any given time and there are further worries about how the atmosphere could change given the amount of aluminium that is burnt up whenever a satellite is deorbited. These changes also give rise to concerns for states that are not yet space powers but have ambitions to develop in that direction on whether the environment will still be accessible and safe for them to operate in.

What International Mechanisms Might Be Used to Shape Space Governance?

Comprehensive arms control remains elusive in space. The Outer Space Treaty from 1967 continues to be the legal basis for space activity and does not prohibit the placement of conventional weapons in space—it only forbids the placement of weapons of mass destruction.

A proposal on responsible behaviours in space initially put forward in the UN General Assembly in 2020 has been discussed within an open-ended working group and garnered widespread support, but failed to be result in a report due to minority dissent. However, this bottom-up approach of focusing on behaviours instead of technology is crucial to the ultimate success of space governance and the sustainable and safe use of the space environment. The dual-use dilemma, of space capabilities being used for both civil and military purposes, as well as the characteristics of the space environment, such as the high speeds at which objects travel, render a discussion about technology alone useless. A capability may not have been designed for the purposes of attack but could very well be used for one. In addition, the increased congestion of orbit and high speeds of space objects threaten space assets and humans in outer space alike. Thus, the rules of the road and the establishment of norms should take precedence in discussions.

Even if formal arrangements cannot be found in the short to medium term, further discussions and the building of coalitions of the willing are essential. Evidence that success can be found is the moratorium on kinetic antisatellite weapon tests, which the United States initiated in 2022 and which has since been adopted as a resolution within the UN First Committee. The 154–8 vote (with 10 abstentions) shows that coalitions of the willing can make a difference in building informal norms and can potentially supplement future formal processes.

How Have Renewed Concerns About Nuclear Weapons Affected Space Policy?

Last year, intelligence reports were published indicating that Russia could be planning to station a nuclear weapon in space. A satellite with a dummy warhead may already be in orbit. The placement of a nuclear weapon in space would be an enormous setback for international space governance, and its detonation would cause vast

and indiscriminate destruction of the orbit in question and would likely render the environment unusable for a considerable amount of time.

Defence against a nuclear detonation in space is both elaborate, expensive, and, depending on the placement and size of the warhead, might be near impossible to achieve. If low Earth orbit (LEO), which hosts well over 80 percent of all satellites, was to be targeted, for example, commercial satellites in the orbit would be virtually unprotected against such a threat.

The concern over what would be a flagrant violation of the Outer Space Treaty has raised a wider discussion around the protection and resilience of satellite constellations. The world has become incredibly reliant on satellite services in both the civil and military dimensions. That being said, there are certain countries (including Russia) that would be set to lose less than others, as they are less reliant on such services than other dominant spacefaring nations, such as the United States.

The recommendations are diplomatic and technological in nature. Firstly, even though a formal consensus within the United Nations is lacking when it comes to space governance, continued discussions that highlight the risks and dangers of escalation potential and outline the importance of continuing discussions that seek transparency and improved communications are vital. This includes bringing spacefaring nations around the table that may not always have seen eye to eye in the past. The potential of a nuclear weapon being placed in space would cause devastation so vast and indiscriminate that the potential for consensus is bigger than in previous discussions about "conventional" space governance.

Secondly, advances in technology means that transparency is increasing in space. It also means that nefarious activity is more difficult to hide from other space actors. Continuing to develop this new technology to be able to observe irresponsible behaviours and to then to use it diplomatically to call out these behaviours is vital for strengthening deterrence.

Thirdly, deterrence in space must be considered by all spacefaring states and has to include the creation of resilient space systems. Ideally these would include considerations similar to a PACE approach in military communications—primary, alternate, contingency, emergency—to guarantee the continuation of vital services.



An Initiative of the Council on Foreign Relations



Session Seven

The Future Frontier of Economic Security: The Search for Critical Minerals





Background Memo The Future of Economic Security: The Search for Critical Minerals

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Since the end of the Second World War, Europe has been a net beneficiary of economic integration and globalization. It has also relied on nearly unfettered access to resources, including critical minerals. However, in the face of increasing geopolitical uncertainty, much of it related to rising tensions between the United States and China, European governments are under pressure to redefine their own economic security and develop strategies to ensure continued access to critical resources. Against that backdrop, the European Union (EU) has recognized that critical minerals diversification is a strategic imperative—one in which resource-rich countries of the Global South can play a critical role.

1. How will the need to acquire critical minerals shape state economic security strategies?

In the case of European states, there has been a growing awareness that economic security and access to critical raw materials (CRMs), especially critical minerals, is best pursued by the EU as a whole, rather than by individual member states with less economic clout. Since 2019, the EU's executive body—the European Commission—has set out to develop an economic security strategy for the first time. The strategy states the goal to enhance the EU's economic resilience and protect its economic security in an increasingly complex and competitive global environment. Defining a sovereign EU approach to securing access to critical materials is a central pillar of its economic security strategy, particularly in light of the green and digital transitions. To that end, the EU has started to implement its Critical Raw Materials Act in May 2024. The legislation is designed to create a framework for ensuring a secure and sustainable supply of CRMs for EU industry. Specifically, the European Commission has set targets in three areas: the sourcing, processing, and recycling of critical raw materials in Europe. In addition, the commission aims to significantly reduce the EU's dependence on imports from single-country suppliers. No more than 65 percent of the EU's annual requirements of each strategic raw material at each relevant processing stage should come from a single third country.

2. How might disruptive technologies change current and future demand?

Disruptive technologies—such as artificial intelligence, advanced robotics, green energy, and quantum computing—are likely to significantly reshape both the volume and type of demand for CRMs in the coming

years. In its key strategic documents—the Critical Raw Materials Act and the Action Plan on Critical Raw Materials—the European Commission has acknowledged that trend and points out four potential effects:

Accelerated Demand for Specific Materials

Technologies such as electric vehicles (EVs), wind turbines, solar panels, and batteries are rapidly increasing demand for the following materials, among others:

- lithium, cobalt, and nickel (core components of lithium-ion batteries powering EVs, renewable energy storage systems, and portable electronics)
- rare earth elements (for permanent magnets in EV motors and wind turbines)
- silicon and gallium (for semiconductors and photovoltaics)

This aligns with the EU's strategic goals for a green and digital economy, which explicitly depend on secure supplies of those inputs.

Emergence of New Material Requirements

Emerging technologies such as quantum computing, advanced semiconductors, and 6G communications could require new and unexpected or previously less in-demand materials, such as tantalum, hafnium, germanium, and indium, as well as graphene and nanomaterials (used in next-generation sensors and conductors).

As those technologies scale, so will the demand for such specialized materials.

Material Substitution and Innovation

While demand rises, technological innovation could reduce dependence on certain critical materials through

- recycling and circular economy initiatives;
- material substitution (e.g., due to new composition of magnets); and
- advanced design (efficiency gains that reduce material intensity).

The EU wants to support those paths through its Horizon Europe research funding program and the Innovation Partnership for Raw Materials.

Geopolitical and Economic Realignments

Technologies enabling re-shoring or decentralized manufacturing (e.g., 3D printing of parts) could reduce reliance on imported material inputs. They could also concentrate demand on more localized or easily recyclable materials. If the EU supported local producers and recyclers through major investment initiatives drawing on public and private funding—it could help significantly reduce supply-chain vulnerability in certain areas. At that stage, however, it seems less likely that the EU could fully reduce its dependence on certain materials or technologies from current trading partners without significant costs.

3. What minerals are needed and where are they found—on land, on the seabed, elsewhere?

Most of the critical minerals mentioned above are found in both terrestrial and marine environments, each with its own geographic distribution and mining challenges but spread across a number of countries worldwide. One example is lithium, which is mined primarily in Argentina, Bolivia, and Chile (the so-called lithium triangle),

with hard rock deposits in Australia. Another is nickel, which is mined in Canada, Indonesia, the Philippines, and Russia. However, dependence on China as a single source is high in the case of cobalt (although it is currently mined in the Democratic Republic of Congo, with significant processing taking place in China), as well as rare earths, silicon, gallium, germanium, graphite, and, to a large extent, copper (although it is currently also produced in Chile and Peru). In addition to being a primary source, China dominates the processing of several critical minerals, including rare earths, cobalt, and lithium.

Although most of those and other materials could be sourced from deep-sea mining in the future, it remains risky and costly at present. Extraction from extraterrestrial sources appears to be similarly constrained by those factors.

4. How can developing and small countries protect their critical minerals?

Developing countries and small states should focus on domestic governance structures, regional cooperation, and strategic partnerships, including with the EU, for strategies to protect and exploit their critical mineral resources. Transparent and accountable governance structures to manage resources effectively, including strong regulatory oversight and protection of environmental and social standards, are key to securing critical minerals and reaping the benefits of production and potential local processing.

Other enabling factors include the involvement of local communities in decision-making structures and good fiscal management to ensure that revenues are used for long-term development. Rather than only exporting raw minerals, countries could focus on developing local processing industries. That approach adds value to resources and creates economic opportunities.

In addition, resource-rich countries could benefit further from regional cooperation, particularly in areas where countries with complementary mineral resources can work together to create integrated value chains. For example, the Democratic Republic of Congo and Zambia have signed agreements to develop local value chains for electric vehicle batteries. Not only can regional cooperation help reduce costs and improve resilience to external shocks, but it can also help strengthen the bargaining position in resource partnerships with powerful players such as the United States and the EU. Such partnerships should be based on mutual interests as well as respect for each other's development goals, including responsible extraction and processing practices.





Background Memo Beyond Geopolitical Weaponization: Rare Earth Minerals, Environmental Justice, and the Limits of Supply Chain Securitization

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In global policy discussions, rare earth elements (REEs) have increasingly been framed through the lens of geopolitics, emphasizing supply chain vulnerabilities and strategic dependencies. Legitimate concerns exist regarding critical mineral security, but the narrative frequently neglects the complex historical evolution of current market structures. China's dominance in rare earth supply chains developed incrementally over decades, shaped by both international market forces and domestic policy decisions. Critical contextual factors—such as the environmental burdens shouldered by producing nations, historical pricing mechanisms that undervalued these resources, and recent efforts to implement sustainable practices—are often overshadowed by geopolitical risk analyses.

1. The Environmental and Economic Costs of Rare Earth Exploitation in China

China commenced rare earth extraction in 1958, supplying vast quantities to global markets over the subsequent five decades. This sustained output precipitated a sharp decline in domestic reserves. Between the 1990s and 2010, China's rare earth exports surged tenfold, accounting for over 90 percent of global supply. Data from China's Ministry of Commerce, cited in a 2010 *Shanghai Securities News* report, revealed that the nation's share of global rare earth reserves plummeted from 43 percent to 30 percent within thirteen years. Experts warned that if extraction continued at this pace, China's reserves would be depleted within fifteen to twenty years.

Despite export quotas introduced in the early 2000s, overproduction and rampant smuggling persisted. In 2010, China exported 39,813 tons of rare earths—exceeding its 30,258 ton quota by 31 percent. Illegal mining operations exacerbated environmental degradation, prompting customs authorities to intercept tens of thousands of tons in smuggling cases during 2009 alone. A 2012 government white paper, *China's Rare Earth Industry: Situation and Policies*, acknowledged the industry's rapid expansion but underscored severe ecological consequences, including radioactive contamination from light rare earth mining. The report called for stricter environmental regulations to mitigate long-term damage.

Notably, China—holding just 23 percent of global reserves—supplied over 90 percent of the world's rare earths during this period, fueling advanced industries in developed economies. Decades of intensive extraction depleted key mining regions while perpetuating China's position at the lower end of the value chain: exporting raw materials at minimal margins and importing high-value processed goods. For instance, in 2019, China exported rare earth permanent magnets at an average price of \$46.59 per kilogram but paid \$84.89 per kilogram for imported high-end products from Japan and the United States—a stark reflection of persistent value-chain disparities.

2. Reforming Rare Earth Management: China's Policy Shift

"We are not pricing rare earths based on their scarcity; we are selling them as cheaply as soil," stated Xiao Yaqing, China's minister of industry and information technology, in March 2021. Confronting dwindling reserves and environmental pressures, China recalibrated its strategy by

- strengthening regulatory oversight to curb overexploitation and improve resource efficiency;
- enforcing ecological restoration standards to reduce environmental harm for future generations;
- investing in research and development to secure core patents, enhance pricing power, and ascend the value chain.

On June 29, 2024, the State Council promulgated the Rare Earth Administration Regulations (effective October 1, 2024), China's first administrative law governing rare earth development. The regulations codify state ownership of rare earth resources, prohibit unauthorized extraction, and mandate sustainable practices. Quota systems, protective mining protocols, and traceability mechanisms aim to ensure long-term industry stability.

In essence, China's decade-long governance reforms have prioritized curbing environmental degradation and illicit mining. Global rare earth supply remains robust, yet Western critiques often overlook a pivotal reality: the era of ultra-low prices—sustained by weak regulation and smuggling—is conclusively ending.

3. Key Observations from China's Experience

- **Technology, not monopoly, drives dominance**: Rare earth reserves are globally abundant, with no inherent supply scarcity. China's current advantage lies in refining and separation technologies, which are transferable and subject to innovation. Emerging producers in Brazil, Myanmar, and The Democratic Republic of the Congo, coupled with investments from the United States and the European Union (EU), signal intensifying competition and the fluidity of mineral dominance.
- Environmental externalities and global inequity: Developed nations have historically offshored the environmental costs of mining by importing cheap rare earths while monopolizing high-value applications. This dynamic perpetuates a Global North-Global South divide, where resource-rich nations bear ecological burdens while advanced economies reap disproportionate profits.
- Market fragility: Unlike high-tech sectors, rare earth production has a relatively low barrier for entry. Rising profitability could attract new entrants, rendering market dominance transient. Thus, REEs offer limited utility as a long-term geopolitical instrument against U.S.-EU containment strategies.
- **Sustainability as a global imperative**: Developing nations entering the rare earth market must prioritize sustainable practices early. Accelerated extraction driven by geopolitical competition risks environmental harm and undermines global resource efficiency. The neglect of climate policy by and

short-term thinking of the Donald Trump administration further jeopardize the prospects for a cohesive global sustainability framework.

4. Contextualizing China's Export Restrictions

Since 2009, new rare earth discoveries in Brazil, Greenland, and The Democratic Republic of the Congo, alongside revived Australian and U.S. production, have diluted China's market share. Western efforts to exclude China from supply chains persist, yet China has refrained from weaponizing REE exports—its policies remain anchored in environmental and pricing equity.

Recent U.S.-targeted measures are proportional responses to:

- Retaliatory tariffs: The United States imposed tariffs of up to 245 percent on Chinese goods, initiating a trade war. Reciprocal measures align with international norms.
- Hypocrisy in trade practices: The United States is a historic proponent of tariff weaponization and falsely labels China's defensive actions as "economic coercion."
- Technological legitimacy: China's rare earth prowess stems from decades of industrial advancement, not monopolistic practices. Export restrictions remain narrowly targeted, addressing U.S. hostility rather than broad market disruption.
- U.S. securitization: By branding China an "unreliable supplier," the United States prioritizes supply chain fragmentation over efficiency, politicizing global commerce.

China's policies reflect a transition from exploitation to stewardship, emphasizing multilateral cooperation. The bifurcation of rare earth markets—a wasteful outcome of U.S. containment—contradicts China's commitment to integrated global trade.

5. Conclusion

Rare earth elements should catalyze international collaboration in green energy and advanced technology, not geopolitical confrontation. A cooperative framework—balancing strategic resource management with equitable benefits for producing nations—offers far greater promise than zero-sum competition.

The U.S.-led push for decoupled supply chains embodies economic inefficiency and dangerous politicization. Today's decisions will shape global resource governance, environmental sustainability, and international relations for generations. Establishing equitable rules for critical minerals is not merely an economic imperative but a foundational step toward a just ecological and technological future.