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# Analysis of a Dual-Track Approach to Legislating Military and Economic Activities in Space

## Introduction

The current framework of space law emerged as a direct result of the Cold War security architecture based on the need to prevent superpower conflict. This requirement has led to treaties enshrining state responsibility in all space activities, limiting the potential for armed escalation. These international agreements, however, also curb the potential scope of economic activity by restraining sovereignty and ownership in space. In recent years New Space has developed rapidly despite the constraints. Technologically viable solutions have emerged enabling economic utilisation of all potential assets even beyond high Earth orbit.[2] These assets include the Moon, Mars, asteroids and other celestial bodies and theoretically even deep space assets. Despite these developments all these new methods for the utilisation of outer space assets are facing legal constraints. This however does not hinder the ongoing shift in investment, with capital pouring into these enterprises involving the Moon and beyond. The prospect of a dynamically expanding outer space economic activity in spite of the legal constraints are pointing to a difficult and potentially dangerous situation in space governance. At the same time the much-needed legal reform of the regulation of military space activities is blocked by the dual need to guarantee security in space and enable private ventures and research in outer space.

In this study I argue for the viability of a dual-track approach in legislating space activities to resolve the conflicts and asymmetry between the two aspects of space law. There is a differing need and willingness to reform the security and the economic aspects of space law. Security guarantees stemming from the UN Charter and the *Outer Space Treaty* (OST) are sufficient, and peace and

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[2] High Earth Orbit meaning a geocentric orbit above 35,786 kilometers.

https://doi.org/10.36250/01192_03

security in space also ultimately depends on the hard military power of the states. Naturally, with all the development in the use of force in space, a reform of the legal framework to respond to the emerging threats would be also welcomed. On the other hand, the existing international legal framework regulating the economic aspect of space is not only lacking, but also debilitating and insufficient. Therefore, I suggest creating a distinct legal regime for space economy, namely a mid-tier legal instrument between hard law represented by the Outer Space Treaty and the soft law and project based legal agreements. This would permit a limited, international form of ownership and sovereignty on celestial bodies and enable the utilisation of profits generated from space ventures, but also guarantee a robust level of state and international oversight, and a rules-based advancement of space economy.

## *The security track*

Security in the military dimension is fundamentally dependent on the balance of power between the actors in the international system, which is an "anarchic" structure with no monolithic guarantor of peace and stability. In such a system the states need to act in three fundamental ways, build up their own military power, cooperate with other states to maximise their security and thirdly deter their enemies or fight them if the use of force is required.[3] This anarchical structure naturally extends into outer space, and similarly to Earth, the main actors are the states. It could be even argued that power relations between states matter much more in space than on Earth, as there are no significant sub-state actors such as insurgents, terrorists, etc. in space due to the technological barriers of launching space objects. As such, states need to develop the defence capabilities in space, build coalitions to guarantee their security and deter and potentially win the conflicts with their enemies. Therefore, in such an anarchical system and a state dominated security environment, it is logical to rely on the legal framework which has emerged on Earth after the Second World War and later extended into outer space as well. The current legal framework is a manifestation of the balance of power as the fundamental force which maintains security in space, displayed in the UN Charter and the OST.

[3] Mearsheimer 2014: 32–40.

The argument of this paper is that relying on the existing security guarantees in space is sufficient, if states understand that their assets' security can only be guaranteed ultimately by hard power and not solely by hard law. Hard law is needed to have codified rules for an otherwise anarchic system and to regulate, but not to exclude the possibility of the use of force. The current legal framework is sufficient but not optimal and significant gaps exist due to new technological achievements of the last decades, leading to new possibilities for using force in space. This approach would enable a focused legislative deliberation of the changed nature of space security in an era which is characterised by heightened great power competition and a higher reliance on space assets. During the Cold War era, because of the heightened tensions, the destruction of a critical military satellite belonging to either superpower would have been considered a direct prelude to an all-out nuclear attack.[4] This threshold has been lowered with the end of the heightened tensions of the Cold War, which on the one hand is welcome news, however, it leaves open the possibility for using force in space under the assumption that it does not necessarily lead to a nuclear Armageddon.

In our current era the satellites themselves are critical assets which guarantee the states' security, stability and well-being, through providing communication, navigation, agricultural and meteorological services. We must understand clearly that currently the use of force in space primarily means the destruction of satellites.[5] A new legislation strictly banning the potential of utilising new and old military technologies to hinder satellite communication is in the interest of all countries. A military conflict between the largest space powers (United States, Russia and China) can cause a non-nuclear, indirect "mutually assured destruction" if they would knock out each other's critical satellite constellations which effectively guarantee 21st century state operation, including communications, meteorology and navigation services. Limiting the ambition of the envisioned reform of the hard legal framework of regulating the military application of space would enable the adoption of new clauses and monitoring processes such as governing the use of anti-satellite technologies without the need to accommodate economic interests. In such an approach the highest tier of space law would rely on hard law as a direct continuation of the UN Charter and the OST and adopt relevant security clauses from the Moon Agreement, without the additional restrictions on space economy.

4 Harrison et al. 2021.

5 Borgen 2020.

The evolving legal framework would be naturally supported by the states' need to maintain a balance of power in space, in which the expanding militarisation of space is a continued key feature of states' space policy. These endeavours for rules-based militarisation of space are demonstrated by national and alliance level efforts in establishing new legal frameworks for the use of force in space, exemplified by NATO after it has regulated space as another operational domain.[6] The paper argues that a legal reform aiming at further limiting the potential for use of force in space has to be in parallel with the development of hard power tools, offensive and defensive military space capabilities and monitoring and verifying technologies. Ultimately these would serve as the guarantors of any new regulatory framework. We know that such efforts aiming at further regulating the military application of space were well on track by the end of 2020.[7] Under the auspices of the Conference on Disarmament based in Geneva the details of such a regulation preventing an arms race in outer space were forming quite clearly. Naturally, there was a hurdle caused by great power competition which led to parallel tracks of furthering regulation, a Western one and a Chinese–Russian effort; however, the details were basically very similar.

While all states aim to maintain that space is undoubtedly a military domain, it does not have to become a war theatre. It is highly doubtful that in the current international environment any state would completely abandon its space weapons program and judging from the accumulation of hard power space assets and weapon development schemes in progress, this trajectory will likely continue. Even in such a volatile security environment favouring the militarisation of space, international norms can reduce the chance for open conflict and collateral damage. Such an initiative was the unilateral ban on ASAT tests by the U.S. in April 2022, which is slowly getting international momentum.[8] In December 2022, 155 countries voted in favour of halting the testing of direct-ascent ASAT weapons in the UN General Assembly based on the U.S. initiative. This shows that there is a broad agreement on the destructive nature of these tests, even if Russia, China and Iran and six other like-minded countries voted against it and India, among others abstained.[9] It is not surprising that these three space powers are reluctant to join such an initiative which does not provide

6 Nasu 2020.
7 European Space Policy Institute 2021.
8 Arms Control Association 2022.
9 General Assembly Resolution 77/41, 7 December 2022, U.N. Doc. A/RES/77/41.

a strong verification mechanism, only a voluntary abstention from the current hegemonic power which already possesses advanced ASAT capabilities. Even though we can see that parallel norm-setting endeavours are in development and a comprehensive international agreement seems impossible at this time, even a patchwork of international norms on limiting the militarisation of space is a highly welcome development. Too much depends on the peaceful usage of space and the above-mentioned initiatives stemming from this realisation shows that we can be optimistic about security in space, if we take a careful approach to the limits and expectations for a regulation and work with gradual steps instead of a comprehensive disarmament which might never come to be.

### *The economic track*

On the second track the paper suggests creating a separate legal framework for orbital and in-space economic activity, including business, commercial transport and research-oriented space economic activities. Unlike security legislation which is underpinned by balance of power considerations and the process of the militarisation of space, current market forces rapidly erode any semblance of a rules-based economic order in space. Companies invest greatly not only in the well-regulated orbital economic ventures, but also into business opportunities aiming at the Moon and deeper into outer space. These initiatives grew to approximately one billion USD per year by 2021, or in relative terms 15% of all private space investment and they are expected to rise steadily in the future.[10] This means that the practice of space economy will quickly undermine any remaining chance for keeping relevant the current very limiting and ill-fitting space legislation. Instead of hard legal norms, soft law has emerged to provide temporary regulation, which, as one very fitting characterisation defines, these soft law instruments "work until they don't".[11] In the absence of strong legislative guidance in conducting business in space, states' and companies' business practices will only be limited by a threat of force from an adversary power. This state of future affairs rightly resembles the most dystopian kinds of science fiction depictions of space with megacorporations undermining state sovereignty

[10] Brukardt et al. 2022a.

[11] Freeland s. a.

and legal norms. Therefore, a reform of the legal framework has to accompany the unstoppable expansion of space economy.

The comprehensive legal framework governing economic activities in space should be based on, but not included in hard international law like the UN Charter and the OST, responding to the growing relevance and sophistication of potential economic activities in space. This approach envisions a mid-tier legal (and associated institutional) instrument between hard law represented by the OST and the soft law and project-based legal agreements. Such an agreement on economic activity in space would not require an agreement by all UN Security Council permanent member states, but it could be formulated, at least initially, as an agreement like the World Trade Organisation or other trade and labour-related international framework. As a minimum, such an agreement would need the buy-in from the United States, the European Union and Japan, in order to create a robust market governed by the new economic agreement. Accession of China, Russia and India is welcome but not necessary for the viability of such an agreement and the formation of competing space economy blocs would not jeopardise the Western-led endeavour. Once the initial Western space powers accept a dedicated space economy regulation, market forces would push other states to join the agreement in order to reap the benefits of joint regulation, security guarantees, opportunities for cooperation, joint ventures and naturally, the most important business motivation, the acquisition of greater profits. I argue that a potential Russian–Chinese space economy bloc, would have severe disadvantages compared to a Western-led one, including capital formation, regulation and providing the highest-tier of technological capabilities, including in microchip manufacturing. As with the Cold War Socialist economy bloc, which was only successful of providing the basics to the population, a less-then-optimal space economy bloc would be hard pressed to compete with the Western bloc in exactly those frontiers (outer space economy) which would bring the most benefit.

An international agreement on space economy would not have to overwrite any of the fundamental values of the OST, but it would need to conflict or at least interpret highly liberally a number of provisions of the internationally much less accepted Moon Agreement. To a great degree, the Moon Agreement became the end of the development of international hard space law exactly because of how it limits the extraction of resources on celestial bodies.[12] The OST bans the national appropriation of outer space, the Moon or other celestial object, which

[12] Ramey 2000.

is why the study argues that unilateral national space economy legislation is null and void in space, as national regulatory rights go hand in hand with full national sovereignty which does not exist in space outside of the space objects. The different national space legislations currently do not and cannot substitute for international law in fostering cooperation, but they do contribute to policy confusion in space governance.[13]

An envisioned international regime must also promote equitable access and the fair sharing of the benefits stemming from all space activities. This is why an international agreement on space economy should be adopted in parallel with the establishment of an 'Outer Space Economy Organisation' which would distribute the profits from space. The particulars of the sharing scheme are not part of this paper, but in order to maintain business incentives a redistribution mechanism should be limited to the profits and highly value what a particular company, the responsible state or international consortium bring to the enterprise. One particular scheme could involve empowering non-spacefaring nations by providing them subsidised or free access to space in order to jumpstart their own space-industry and participation in the space economy supply chains instead of "cash handouts" promoting dependence and exclusion.[14] It is important to note that all states must receive a certain share of the benefits, thereby creating a motivation to join the organisation and the international agreement, but also reward greater participation in each venture by less developed states as well. Such a framework would permit a greater scope of ownership, a limited and shared international sovereignty over celestial bodies and enable the utilisation of profits generated from space ventures, but also guarantee a robust level of state and international oversight, such as with critical economic ventures and infrastructure assets on Earth.

## Countering the counterarguments

There are two important counterarguments to this proposal. Firstly, that this could lead to parallel space economic systems, and the second, more serious threat, that unilateral steps taken by a coalition on the economic front would undermine the security achievements of the OST. The paper argues that both

[13] Goguichvili et al. 2021.

[14] Brukardt et al. 2022b: 33.

counterarguments are false. Regarding a countering Russian–Chinese space economic bloc would be as economically viable as the Communist economic bloc was during the Cold War, where inevitable market collapse was only slowed down by political repression, which cannot lead to state of the art and profitable economic enterprises, especially not in space. Naturally, Russia and China possess a high degree of technological prowess in space activities; however, they do not have the agile capitalist economic ecosystem. Russia is not a major financial power, while China on paper is, however, under the burden of years of grave financial mismanagement and bloated domestic debt. Neither of them is able to offer a safe haven for private space companies as they look for legal stability to reap the benefits of the risk-heavy investments in outer space economy. It could be even argued that a danger to a US–EU–Japan lead space economic bloc would not be a parallel Russian–Chinese system, which is effectively being built by China encompassing every major type of international organisation.[15] The greater threat would be a Janus-faced effort of these anti-status quo powers to join the bloc and reap undue benefits from it, like we have seen with Chinese efforts of joining WTO.[16]

Regarding the second, more serious argument, the security aspect of space legislation, it is important to point out that Russia and China have just as much to lose on the security front from an all-out space war as the Western allies. Both countries rely on satellite services in managing their national and international operations and none can afford to completely lose space-based services. The security guarantees in space are underwritten by hard power and the resulting security mechanisms such as balance of power and mutual threat, which would not be negated by any advancement in economic activities. If one country would risk using force in space despite the UN Charter and the OST, it would by extension invite similar or exceeding counterforce by the attacked power or coalition. Based on our current reliance on space services, an open space war would be not unlike a nuclear exchange between the major powers. The main difference would be that a nuclear war would lead to direct devastation, while a non-nuclear space war would strip us of meteorological, agricultural, communication and navigation technologies, thereby indirectly leading to the collapse of modern civilisation as we know it. Therefore, there is no reason to believe that we must maintain the status quo in the space economy in order to keep the status quo in

[15] Heilmann et al. 2014.

[16] Mavroidis–Sapir 2021.

the security dimension. This however does not mean that there are no red lines for Russia and China, Western states must not believe that these states will not resort to waging an all-out space war if their core national interests would be threatened. The possibility of a space war, similarly to a nuclear war, is coded into the system of international relations. A space war would be a logical escalatory step before a nuclear war due to the less direct devastation it would cause and relative advantages a self-sufficient country like Russia would gain compared to the United States. This is to say, however, that economic advancement in space is not a sufficient reason for starting a space war by those actors who are left out of the suggested new economic framework.

## Conclusions

This paper argued that it is vital to separate the legal instruments aiming at regulating space security on the one hand and economic activity in space on the other. The reason for this is based on the differing nature of the two dimensions. Security is first and foremost guaranteed by the hard power of the actors, while international law, including the UN Charter has a meaning only to the degree as it is enforceable by hard power. On the other hand, economic activity requires a solid legal framework to operate effectively. Business activities are based on calculations of value and risk based on a particular regulatory framework, which is sorely lacking for space economy. The issue is the lingering Cold War mentality of putting security first is space legislation, which does not enable the emergence of new regulation on space economy. A partial decoupling the security and economic aspects of space policy and space law can lead to more successes on both fronts. Elevating a nascent "dual-track approach" to official level would in effect lift the block on the development of hard space law under the UN, which occurred with the sparse ratification of the Moon Agreement and return on building on the fundamentals of the UN Charter and the OST. Security in space can only be legislated if all major actors, especially the U.S., Russia and China are parties to any emerging treaty. On the other hand, coalitions of the willing can advance faster on the economic track without endangering the security dimension and establish new norms for the benefit of all mankind. A less constraining, more business-friendly legislation of business activities in space would enable the inherent advantages of the economic systems of the European Union, United States and Japan to create a flourishing in-space economy and

greater buy-in from private companies. This is a necessary step to start a new, rules-based space age, based not only on exploration of outer space on and beyond the Moon, but also on bringing life into outer space through economic activity.

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