

International Economic Space Law: Emergent Autonomous Division of International Law

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ABSTRACT

International Economic Space Law represents an emergent autonomous division of International Public Law, dedicated to regulating economic activities conducted in outer space. In the context of the rapid development of the space industry and the increasing involvement of both private and public actors, there arises a need for an autonomous legal framework that ensures legal predictability, investment protection, and the equitable use of space resources. This analysis addresses the theoretical and legal foundations of the field, the relevant sources of law (international, national, and soft law), as well as controversial issues concerning the property regime of space resources. Topics such as the regulation of trade in space goods, taxation of orbital activities, public-private partnerships, protection of the cosmic environment, and the resolution of economic disputes are examined. Furthermore, the study explores the impact of emerging technologies (artificial intelligence, nano-satellites) on existing legal structures and emphasizes the necessity for effective global governance. Thus, the premises for shaping a coherent, new, emergent autonomous division of Public International Law—International Economic Space Law—are outlined, one that is capable of responding to the challenges of a decentralized and continuously expanding space economy.

Keywords: International Economic Space Law, NewSpace Sector, space economy, Outer Space Treaty, emergent autonomous division

Derecho del Espacio Económico Internacional: División Autónoma Emergente de Derecho Internacional

RESUMEN

El Derecho Económico Internacional del Espacio representa una rama autónoma emergente del Derecho Internacional Público, de-

dicada a regular las actividades económicas realizadas en el espacio ultraterrestre. En el contexto del rápido desarrollo de la industria espacial y la creciente participación de actores tanto privados como públicos, surge la necesidad de un marco jurídico autónomo que garantice la previsibilidad jurídica, la protección de las inversiones y el uso equitativo de los recursos espaciales. Este análisis aborda los fundamentos teóricos y jurídicos del campo, las fuentes jurídicas pertinentes (derecho internacional, nacional y no vinculante), así como cuestiones controvertidas relativas al régimen de propiedad de los recursos espaciales. Se examinan temas como la regulación del comercio de bienes espaciales, la tributación de las actividades orbitales, las colaboraciones público-privadas, la protección del medio ambiente cósmico y la resolución de disputas económicas. Además, el estudio explora el impacto de las tecnologías emergentes (inteligencia artificial, nanosatélites) en las estructuras jurídicas existentes y enfatiza la necesidad de una gobernanza global efectiva. De este modo, se esbozan las premisas para la configuración de una nueva división coherente, emergente y autónoma del Derecho Internacional Público —el Derecho Económico Internacional—, capaz de responder a los desafíos de una economía espacial descentralizada y en continua expansión.

Palabras clave: Derecho Económico Internacional del Espacio, Sector Nuevo Espacio, economía espacial, Tratado del Espacio Ultraterrestre, división autónoma emergente

国际经济空间法：国际法的新兴自主分支

摘要

国际经济空间法是国际公法的一个新兴独立分支，致力于规范外层空间的经济活动。随着航天工业的快速发展以及公私部门参与度的不断提高，亟需建立一个独立的法律框架，以确保法律的可预测性、投资保护以及空间资源的公平利用。本文分析了该领域的理论基础和法律基础、相关法律渊源（国际法、国内法和软法），以及与空间资源产权制度相关的争议性问题。文章探讨了空间货物贸易监管、轨道活动税收、公私合作、宇宙环境保护和经济争端解决等议题。此外，本文还探讨了新兴技术（人工智能、纳米卫星）对现有法律结构的影响，并强调了“有效全球治理”的必要性。因此，本文概述了构建一个连贯、新兴的、自主的国际公法分支——国际经济空间法——的前提条件，该分支能够应对去中心化且不断扩张的空间经济所带来的挑战。

关键词：国际经济空间法，新空间领域，空间经济，外层空间条约，新兴自主分支

The political, economic, and technological developments of the 20th Century and the early 21st Century constitute a complex historical context for all of humanity, particularly in light of the initial space explorations.

While, at first, ventures into outer space and the Moon landings were regarded as monumental achievements of humankind, we are now witnessing a phase in which states have begun to develop a range of economic activities in the space domain—activities that require exceptionally careful and comprehensive legal regulation.

Starting from the principle that outer space is the common heritage of humankind, the international community has established additional principles, which were embodied in the 1967 Outer Space Treaty. Since then, the trajectory of technological advancement—including commercial satellites and interplanetary missions—has further underscored the need for a legal framework that is both adaptable and dynamic. Notably, the 1970s and 1980s saw the adoption of agreements such as the *Treaty on the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, which brought to light many of the emerging economic challenges (Kaul, 2024, p. 194).

Thus, the exploration and exploitation of extraterrestrial resources, as well as environmental concerns, have

taken shape, highlighting the intersection between economic development and regulatory challenges. At the same time, the rivalry between major world powers—particularly during the Cold War—shaped both the direction and substance of the legal and economic discourse.

All of these factors have led, with the dawn of the 21st Century, to a new era in the commercialization of space activities—an era in which the regulatory landscape concerning economic rights in outer space is undergoing significant transformation, not least due to the growing number of actors involved, including private and international entities.

Concepts such as the space market economy and international collaborations in technology have emerged, clearly demonstrating that traditional regulatory frameworks must be strengthened and that existing legal doctrines require reassessment and revision.

Both national and international economies are deeply affected by the evolution of legal norms, which must also encompass the responsibility of actors operating in the space environment (Masson-Zwaan & Sundahl, 2024, p. 399).

The NewSpace sector (or the New Space Economy) represents a new generation of space-related econom-

ic activities, in which the primary actors are no longer solely governments and traditional space agencies. Private companies, startups, and commercial consortia are now entering the field, developing and deploying innovative technologies, services, and business models in the space domain.

The normative framework must consider not only the establishment of rights and obligations but also a broader vision—one that contributes meaningfully to the maintenance of peace, security, and international order in the exploration and utilization of space resources.

Grounded in the 1967 Outer Space Treaty, the vision for regulatory development must address the specific characteristics of the NewSpace sector (Doldirina & Wintermuth, 2024, p. 67], such as:

1. *Emerging services* (space tourism, space mining, 3D printing in space);
2. *Public-private partnerships* (government collaboration with private firms on transport, space stations, and missions) (Tani-Hatakenaka, 2024, p. 261];
3. *Start-ups and private innovators* (private investment, venture capital funding, and a significant influx of companies into the space sector);
4. *Cost-efficiency maximization* (reusable rockets and technological innovations that revolutionize launch paradigms and drastically reduce costs);
5. *Accelerated commercialization* (space becoming not only a strategic or scientific domain but also a highly profitable one).

In light of the above, it is essential to identify mechanisms through which the international community can adapt existing legislation to address emerging challenges, while ensuring a fair and equitable distribution of the benefits derived from space exploration and utilization.

Therefore, we are firmly convinced that the introduction of an interdisciplinary analytical vision, with a particular focus on International Space Law and International Economic Law, should highlight not only the necessity for clear and adaptable regulations, but also the essential importance of collaboration among the world's nations.

The approach must be both comprehensive and innovative, one that fosters peaceful exploration and international cooperation, while simultaneously protecting space resources and the cosmic environment. Collaboration should be grounded in ethical principles and responsibility, ensuring the sustainable use of outer space.

Given the scale of technological impact on the evolution of Public International Law in general, and particularly on the growing interdependence of its two subfields—International Space Law and International Economic Law—we believe there is a unique opportunity to shape and deepen an emerging subfield of Public International Law, namely **International Economic Space Law**. Al-

though the activities we have addressed clearly possess a commercial nature, we have deemed that a potential designation such as International Commercial Space Law does not fully capture the complexity and emerging character of this independent legal subfield, which in the future will witness a clearly defined development of the space economic dimension.

Thus, considering that commerce is a subset of the broader economic field, the title International Economic Space Law fully aligns with its conceptual and functional requirements.

International Economic Space Law is an emerging subfield of International Law that evolves in tandem with technological advancements and changes in global geopolitics. It is a dynamic subfield, reflecting both the complexity of human interactions and the universal aspirations of exploration and discovery.

Accordingly, **International Economic Space Law** can be defined as: *that emerging subfield of Public International Law that governs the legal regulation of the means and forms of the economic exploration and exploitation of outer space, by both public and private actors, in accordance with the principles of International Law, International Space Law, and International Economic Law.*

This subfield must explore the possibility of adapting complex legal norms and best practices to regulate, among others, the following:

- The exploitation of space resources by private entities;
- Ownership rights over retrieved objects and collected data;
- Liability and insurance regimes;
- Competition and equitable access to space, and more.

International Economic Space Law will need to deepen the development of norms already established in the other two subfields (International Space Law and International Economic Law), while also defining and regulating its own autonomous legal dimension—shaped as the distinct identity of International Economic Space Law—in accordance with the overarching principles of general International Law.

The fundamental principles of International Economic Space Law must harmoniously integrate pre-existing legal tenets, while also formulating new principles capable of addressing the full spectrum of regulatory requirements and needs related to economic activities in outer space. Their essence will be shaped by the complexity of legal and ethical challenges arising in an era where technological advancement stands as the central phenomenon demanding regulation.

The impact of technology on International Economic Space Law necessitates not only a reconfiguration of the normative framework, but also an adaptation of international practices concerning the use and exploration of outer space.

We express our hope and confidence that our new approach to this emerging subfield of International Eco-

conomic Space Law—will be received by the international academic community and with openness and positivity by the industry beyond.

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