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NEXT FRONTIER OF ECONOMIC SYSTEMS FOR THE NEW SPACE AGE: MODELS FOR A
MULTI-PLANETARY SOCIETY

Abstract

The growing scope of human activities in space and the new possible opportunities of human ventures beyond Earth, from human exploration to settlement on other celestial bodies, provides a rare prospect to rethink traditional economic paradigms and envision how different economic systems could function under an interplanetary society. From exploring how a theoretical space-based capitalist economy could function to novel economic frameworks tailored for space environments, while addressing the unique challenges and opportunities posed by living and working in space, resource allocation, trade, and governance, is the primary focus of this study.

Some of the systems that are discussed include:

- **Hybrid Models:** Combining elements of capitalist, socialist, and cooperative systems to balance innovation, equity, and collective welfare in space settlements.
- **Resource-Based Economies:** Leveraging in-situ resources such as water, minerals, and energy to anchor value systems and reduce dependency on Earth-based supply chains.
- **Decentralized Finance (DeFi):** Implementing blockchain-based systems to ensure secure, transparent, and decentralized transactions across the vast distances of space.
- **Capitalist Economics:** Building on the principles of private ownership, competition, and profit, explore the frameworks, policies, and infrastructure required for such a system to function.
- **Non-Profit Economics:** Operating on principles of public service, scientific advancement, and sustainability rather than profit maximization that benefits all of humanity while preventing the exploitation and monopolization of space resources.
- **Socialist Economics:** based on its traditional traits to foster shared prosperity and sustainable development in the extraterrestrial environment and center on collective ownership and management of resources, infrastructure, and technologies.
- **Communist Economics:** Where all extraterrestrial resources, infrastructure, and technologies would be collectively owned and managed for the benefit of all humanity, transcending national boundaries and corporate interests.

To account for any of these proposed economic systems, the establishment of a Space Economic Systems (SES) organization is recommended. The SES organization would serve as an international platform to coordinate policies, standards, and systems for activities such as resource extraction, orbital commerce, space manufacturing, and interplanetary trade. Establishing a suitable robust and adaptable economic system, humanity can create the foundation for sustainable interplanetary growth, turning space into a thriving domain of exploration, commerce, and cooperation. By addressing the complexities of operating in space, any one of these economic systems would aim to foster collaboration, innovation, and sustainability, ensuring that the next frontier of human exploration benefits all of humanity.