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OUTER FRONTIERS OF BANKING: FINANCING SPACE EXPLORERS, AND SAFEGUARDING  
TERRESTRIAL FINANCE

**Abstract**

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At inception and for decades, governments alone financed launching, operating, and returning space objects and humans. Scientific exploration of space propulsion, navigation, communication, and life safety advances resulted in commercially viable technologies and business methods. Yet scientific research and mission goals depended on government space mission priorities and budget appropriation processes.

Government funding still predominates, outpacing private sector investments. Space entrepreneurs are emerging with the wealth and explorer spirit to attract teams to do what governments have not prioritized or funded: asteroid hunting satellites, space tourism, space freight, lunar and asteroid mining, and habitats on the Moon and Mars. Concurrently, developing countries are launching space satellites and missions, diversifying space entrepreneurship.

Space finance is an inherent barrier or right. Space finance is a silent technology enabler or mission continuity risk. Space exploration represents an opportunity to reimagine better space and terrestrial finance options and principles.

Space law was written in the language of foreign policy and security concerns rooted in the 1960's Cold War Era. For more private sector financing to explore space, space law frameworks will need updating.

Finance is essential to advance peaceful uses and discoveries in space. If exploring space is to be truly open to all humankind, then options for banking, financing and insuring space explorers and missions must expand accordingly, and inclusively, beyond governments and high net worth entrepreneurs.

This paper reviews relevant treaties and transactional frameworks for financing space operations. Historical context, principles and inspirations are gathered from bank, finance, and market precedents that funded terrestrial and maritime exploration and settlement. The paper summarizes transferable principles and practices of modern asset valuation models, transactional frameworks and strategies for allocating project benefits and mitigating project risk.

Based on such historical and modern market principles and precedents, the paper identifies the challenges of, and suggests arrangements for, banking as, and finance of, space-borne assets and activities. A humanitarian "space bank in a box" is described to prove banking in space is

viable and improves on terrestrial money flows for fragile regions affected by war, corruption, disaster or breakdown of basic human rights.

Weighing historical and modern context and space-based humanitarian and business continuity advantages, the paper concludes by recommending that policymakers elevate space banking, finance and insurance as topics of scientific inquiry, on par with other scientific explorations and technologies, to unleash a reliable future of human exploration of space.

Key words: space, banking, finance, insurance.