OCTOBER 2026



Equity Insights

To infinity and beyond – the economics of space

Key Messages

1. **From geopolitics to economics.** Space was long perceived as the domain of governments due to prohibitively high costs.
2. **Small creates big opportunities.** Mastering propulsive landing and miniaturisations of tech hardware has been the bedrock of commercial space exploration.
3. **Some areas remains science-fiction, some create real opportunities:** The space industry is fundamentally a story of physical barriers yielding to industrial discipline and deflationary logistics. For investors willing to look past short-term volatility, the commercialisation of orbit is representing an interesting long-term opportunity.

It started as a geopolitical arms race

For decades, our relationship with space was defined by pure national prestige, funded by hundreds of billions of taxpayers' money (dollars) without a commercial business model. During the 1960s Space Race, the U.S. directed over 4% of its federal budget toward lunar exploration. Launch vehicles were treated as disposable, single-use assets, leaving the industry trapped in an economically stagnant, cost-plus paradigm where the barrier to entry hovered at a prohibitive USD50,000 per kilogramme.

Mastering the economics of gravity

The transition towards an orbital economy began when commercial innovators mastered the propulsive landing and reuse of orbital boosters, transforming spaceflight from bespoke manufacturing into routine logistics. This breakthrough triggered a collapse in launch costs, driving prices down by more than 95% to well below USD2,000 per kilogramme. Simultaneously, the digital revolution catalysed the rapid miniaturisation of spacecraft hardware. Today, high-performance CubeSats, which are the size of a milk carton, deliver superior computational throughput at a fraction of historical costs.

To grasp this commercial significance, consider deploying a modern broadband constellation of 4,000 satellites. During the expendable rocket era, lifting that payload would have incurred USD50 billion in freight expenses, suffocating the venture before it began. With reusable rockets, that identical mass is deployed for approximately USD2 billion. That USD48 billion margin difference is the catalyst transforming orbit into a commercial arena, driving a global space economy that generated nearly USD600 billion in 2023 and is compounding at 9% annually towards an estimated USD1.8 trillion by 2035.

Defying gravity – the space economy value chain

A trillion-dollar orbital economy rests upon a deeply integrated industrial value chain stretching from terrestrial mines to Low Earth Orbits (LEO). The architecture begins with critical raw materials. Spacecraft require structural metals, like aluminum, titanium, and specialised cryogenic steels offering maximum strength-to-weight ratios under severe mechanical loading. Propulsion engines endure temperatures exceeding 3,000°C, driving demand for refractory metals and high-temperature superalloys formulated with tungsten, nickel, cobalt, niobium, and rhenium. Electronic systems rely on rare earths, e.g. neodymium, for precision actuators, while gallium, tantalum, and high-purity copper form the circuits of power distribution units.

> ***"The exploration of space will go ahead, whether we join in it or not, and it is one of the great adventures of all time."***
>
> ***(John F. Kennedy)***

Stephan Kemper

Chief Investment Officer
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Once materials are cast, the supply chain funnels into engineered propellants, which comprise up to 90% of a rocket's total mass. The industry is structurally transitioning from refined kerosene to liquid methane, which burns cleanly, and drastically reduces refurbishment time for reusable rockets. Industrial gas providers also capture sustained revenue through engine static test firing cycles and supplying noble gases like xenon for satellite thrusters.

The payloads these rockets carry are effectively armoured computing platforms. Beyond Earth's atmosphere, hardware is bombarded by trapped high-energy particles within the Van Allen radiation belts, inducing rapid semiconductor failure. The orbital economy relies on specialised chipmakers to manufacture radiation-hardened microcontrollers and optical modules. These electronics are assembled alongside thousands of mission-critical subsystems—such as reaction wheels, star trackers, and high-tolerance fluid valves—operating under strict micron-level tolerances across thermal swings from below -100°C to over 150°C.

At the end of this industrial chain sit the satellite operators. Today, nearly 80% of the entire space economy's revenue is generated by downstream satellite operations and terrestrial ground equipment. Positioning, Navigation, and Timing (PNT) infrastructure accounts for over USD300 billion annually across added-value services and specialised hardware. PNT signals are the silent utility coordinating modern civilization, synchronising cellular networks, balancing power grids, and clearing high-frequency global financial transactions.

In broadband connectivity, LEO mega-constellations bypass legacy ground infrastructure. Operating at altitudes between 160 and 2,000 kilometres, these constellations slash latency to 20 to 50 milliseconds. Commercial satellite broadband connects remote schools, offshore platforms, and entire maritime fleets. Meanwhile, Earth observation networks provide an unblinking analytical layer. Financial analysts utilise orbital imagery to quantify customer traffic at retail chains, insurers evaluate property damage across disaster zones, and agricultural conglomerates track soil moisture to optimise global crop yields.

Star Wars

Because orbital infrastructure is vital to economic functioning, space is now an indispensable defence domain. Commercial assets in orbit operate as essential force multipliers, providing encrypted communications and synthetic aperture radar (SAR) imagery.

Consequently, global government space expenditure reached a record USD135 billion in 2024. The United States proposed expanding its Space Force budget to USD71.1 billion for fiscal year 2027 to develop missile-tracking architecture. Europe is pursuing strategic autonomy through the European Space Agency's EUR22.3 billion Strategy 2040 budget and the IRIS² secure satellite constellation.

What is realistic....

Over the next decade, the space economy will evolve towards active in-orbit operations. A commercial logistics market is forming to service, refuel, and relocate ageing satellites, extending the useful life of multi-million-dollar assets and tackling the growing issues of space debris.. In manufacturing, microgravity eliminates thermal convection, enabling the synthesis of advanced materials impossible to formulate on Earth, such as flawless ZBLAN optical fibres and complex therapeutic proteins. Even the emerging space tourism sector provides critical commercial proof-of-concept for human life-support systems, paving the way for private space stations that will lease lab space to corporate researchers.

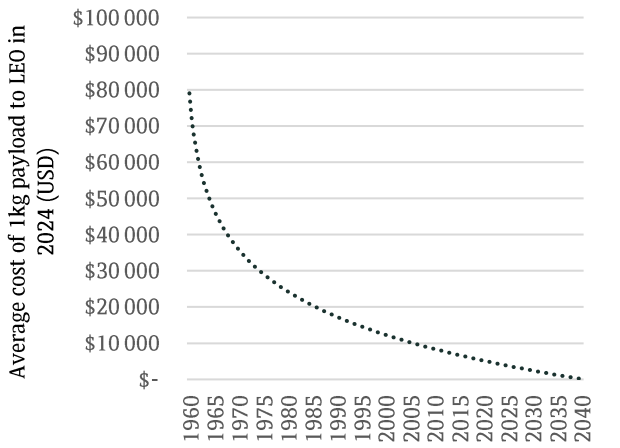
...and what will remain Science Fiction?

A clear distinction must be made and maintained between commercial expansion and speculative fantasy. Proposals for asteroid mining aimed at returning industrial commodities to Earth are economically unviable; capital expenditure vastly outstrips the terrestrial market value. Similarly, deploying gigawatt-scale data centres in space to bypass terrestrial power constraints requires rejecting massive thermal waste heat in a vacuum and lifting 20,000 metric tonnes of servers—presenting severe financial hurdles. In the near term, space-based computing will remain focused on edge processing aboard satellites.

Conclusion

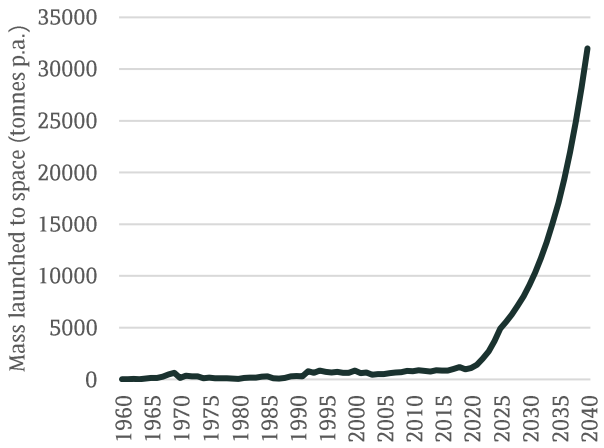
The space industry is a real story of physical barriers yielding to industrial discipline and deflationary logistics. It remains a capital-intensive and operationally risky sector. Because picking individual winners among early-stage entrants carries elevated idiosyncratic risk, broad diversification across the foundational value chain—from upstream critical alloys to downstream satellite analytics—represents the most prudent approach. For capital allocators willing to look past short-term volatility, the commercialisation of orbit is constructing the operational backbone of a multi-trillion-dollar macroeconomic arena that will shape global enterprise for decades to come.

CHART 1: PAYLOAD COSTS ARE EXPECTED TO KEEP FALLING...



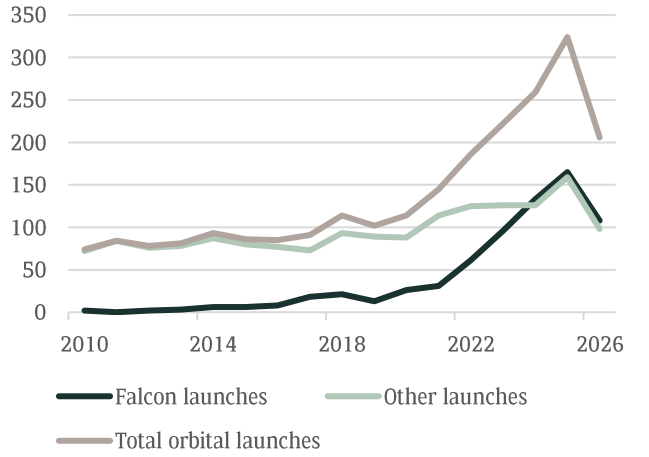
Source: BNP Paribas, Cambridge University

CHART 2: ...WHICH SHOULD SUPPORT LAUNCH GROWTH



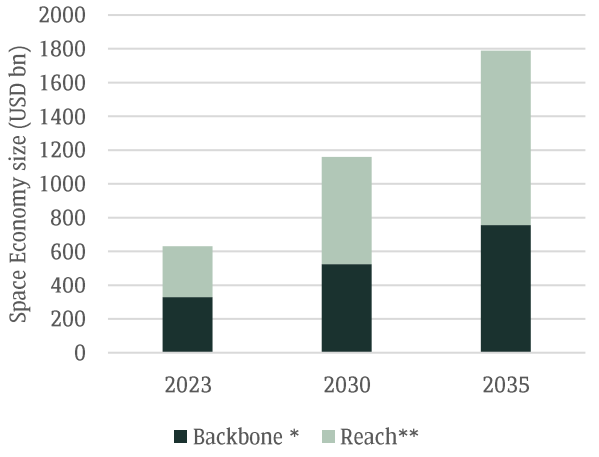
Source: BNP Paribas, Cambridge University

CHART 3: THE FALCON AS KEY DRIVER OF PAYLOAD COST REDUCTION



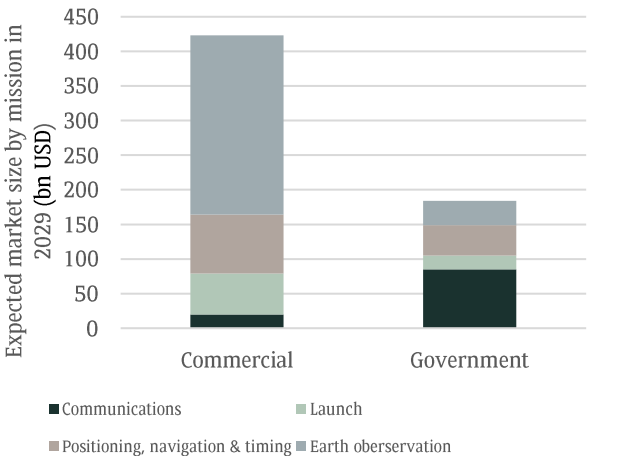
Source: BNP Paribas, Cambridge University

CHART 4: THE SPACE ECONOMY IS EXPECTED TO GROW BY 9% P.A.



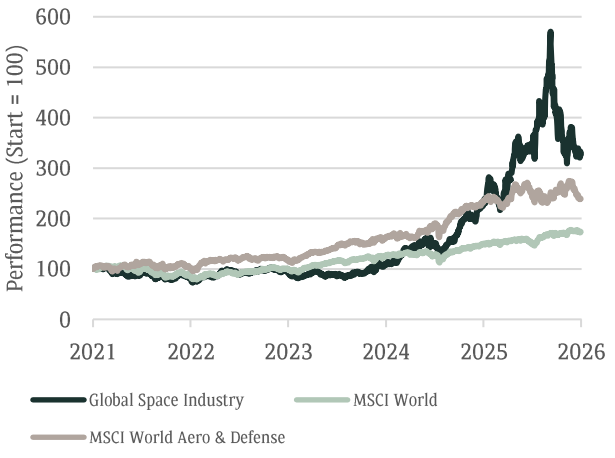
*Source: BNP Paribas, McKinsey / * satellites, launchers & services // ** services relying on the backbone*

CHART 5: COMMERCIAL WILL OVERTAKE GOVERNMENT REVENUES



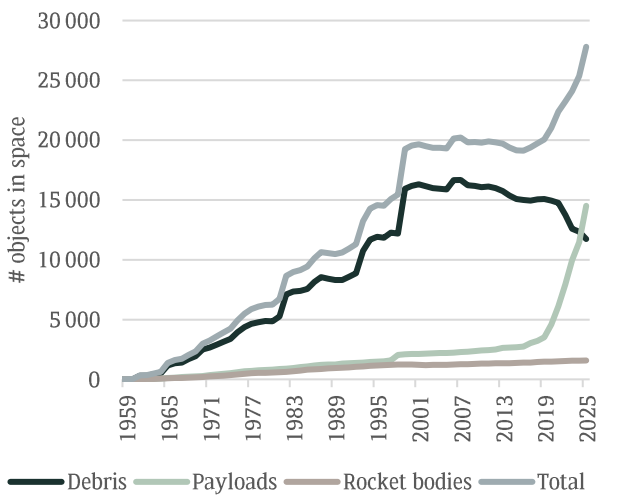
Source: BNP Paribas, McKinsey

CHART 6: SPACE OUTPERFORMED GLOBAL STOCKS DESPITE A RECENT CORRECTION



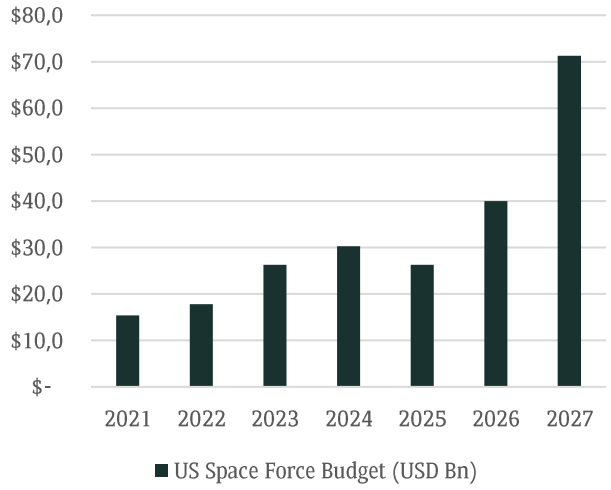
Source: BNP Paribas, McKinsey

CHART 7: MORE LAUNCHES MEAN MORE DEBRIS



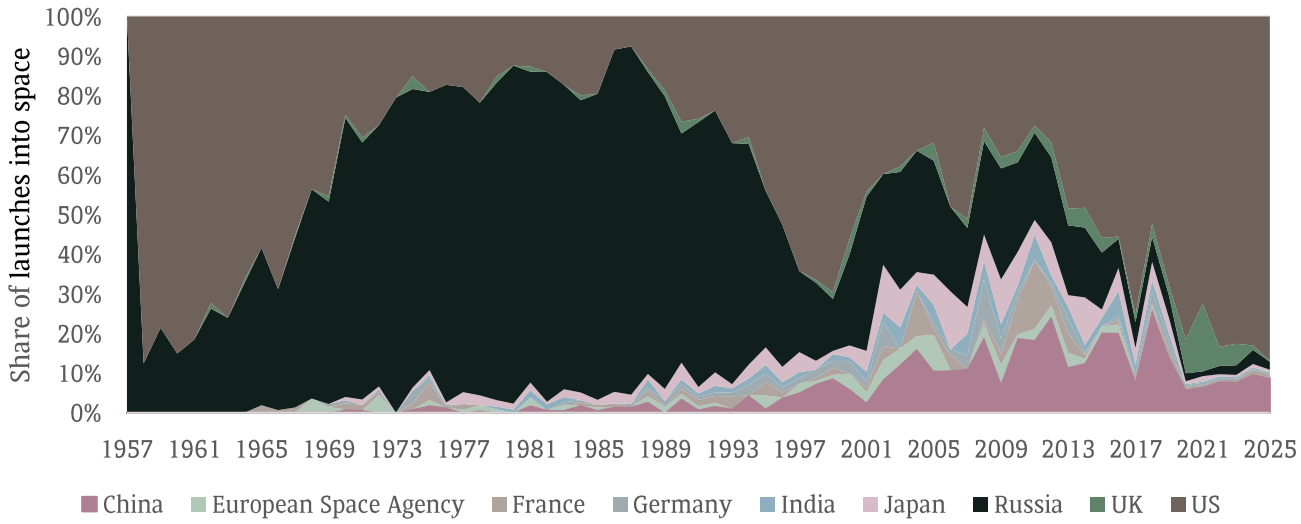
Source: BNP Paribas, ourworldindata.org

CHART 8: US SPACE FORCE SPENDING IS EXPECTED TO ACCELERATE SIGNIFICANTLY



Source: BNP Paribas, US Department of War

CHART 9: SPACE IS DOMINATED BY THE US



Source: BNP Paribas, ourworldindata.org

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