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# CHARTING THE STARS: VENTURE CAPITAL EMERGING IN SPACE EXPLORATION

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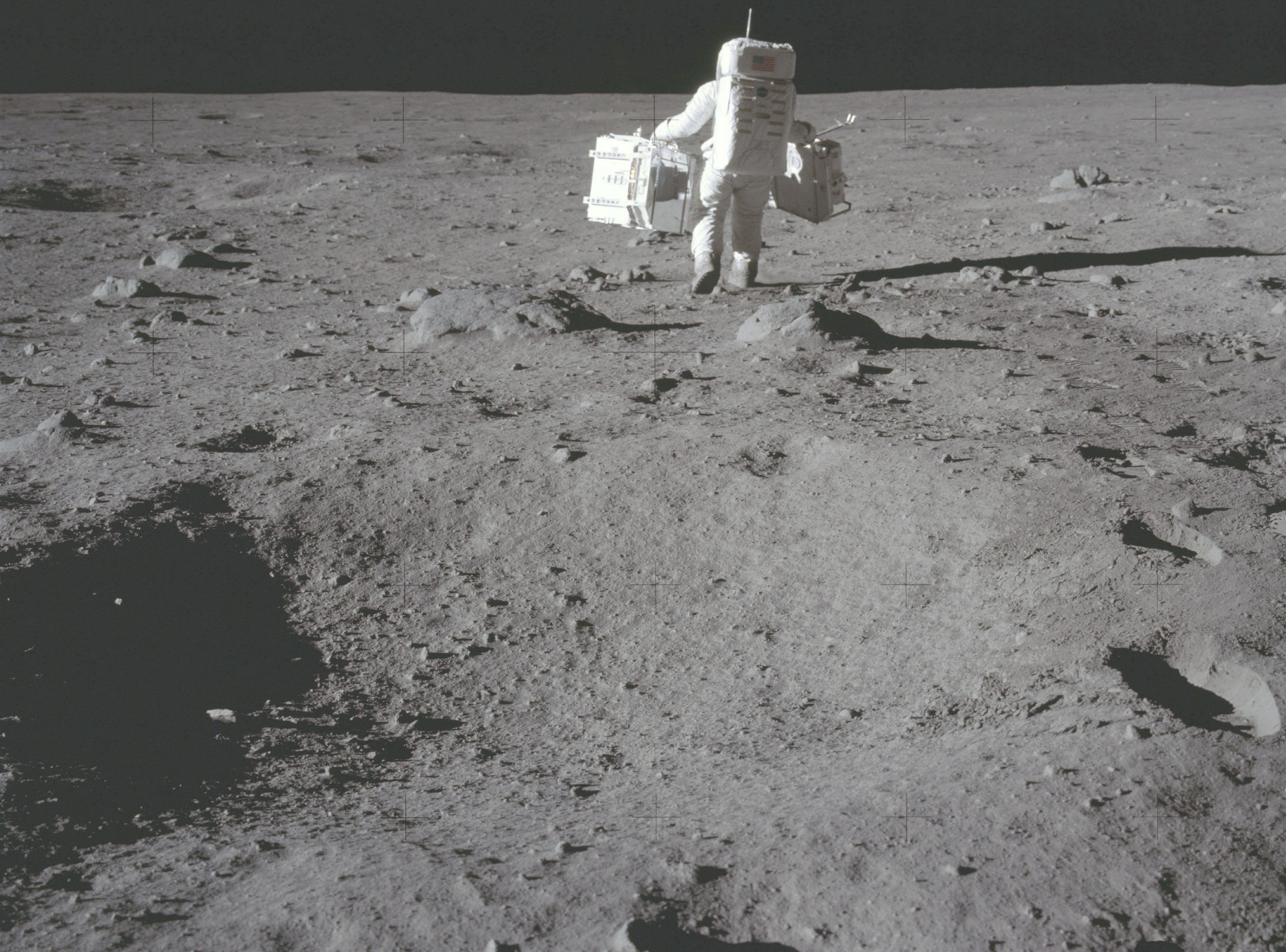


# Venture Capital Trends in Space Exploration: Key Insights for 2024

On October 13th, 2024, Elon Musk's Space X completed the world's first landing when it caught the rocket booster used in a space launch with mechanical arms, signaling the first step to sustainable space exploration.

In the past years, there has been a global increase in investments and in the resources allocated towards space exploration programs and satellite manufacturing and space systems. Companies like Blue Origin and Space X show steady signs of improvement, while satellite companies such as Eutelsat and SES also seem to have promising results. What is important to know is that most companies in this industry are privately held. This means that such firms have limited access to capital, in an industry where unit production costs are very high. At the same time though, their private status allows them to focus on long-term growth strategies rather than quarterly earnings reports and enjoy a smaller regulatory burden since they are not bound by the reporting and compliance requirements of publicly traded companies. Donald Trump's historic re-election is likely to enhance this the sector's financial performance. Considering his close relationship with Elon Musk, it is estimated that Trump will enforce favorable laws and regulations for space exploration. While US based companies have been dominating this sector, Trump's return to the White House is likely to alter the status quo. The introduction of sky-high tariffs on foreign products, to essentially force business to invest and move their manufacturing to the US, is expected to alienate and isolate US markets and deter trade with Europe and Asia.

US policies are anticipated to have a big impact on European and Asian markets. As the aristocratic Prussian diplomat Klemens Wenzel Furst von Metternich said, "When American sneezes, the world catches a cold". In response to Trump's projected policies, Europe is preparing itself for a trade war. Alliances combining space activity between Thales and Airbus would mean that European companies are finally able to compete with Elon Musk's Starlink in the telecommunications satellite market. Additionally, The Exploration Company GmbH completed its largest funding round, raising $160 million from investors such as French Tech Souveraineté and Germany's DeepTech and Climate Fonds.

It could be argued that a Trump victory helped European companies become independent from the US and become more competitive by finding innovative solutions to increase their market power to survive. It is interesting to also make a hypothetic comparison of how the world of space exploration would look like if Kamala Harris were elected president. In fact, her sustainability driven campaign may have clashed with the high waste and pollution associated with space exploration.

**Space:**

As companies get closer and closer to the stars, venture capital (VC) firms are lining up to invest. While larger firms including Space X, Blue Origin and Virgin Galactic are illustrating the space industry's potential, they are just the tip of the iceberg with many believing that the industry is poised for a major expansion in the coming years. This being reflected in the roughly $120 billion invested in space exploration over the last 4 years, with VC firms accounting for a large percentage, as they continue to be attracted by the innovation and potential commercial success.

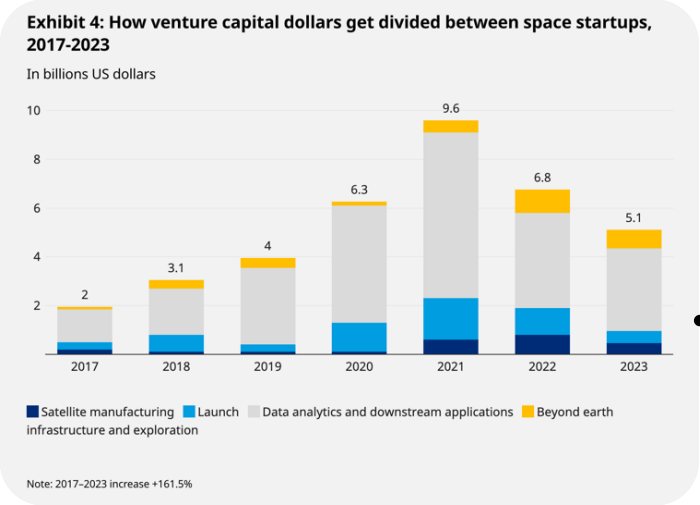
**Major Trends in the Space Industry for 2024:**

- *Opening space to all:* The increasing accessibility of space to the world has attracted more than just start-ups, with academic institutions and private individuals eager for a piece of the pie.

- *Marketplace:* The space sector is slowly becoming more of a marketplace where start-ups are creating more innovative products to meet consumer needs.

- *Government-Led Growth:* Governments around the globe are enhancing their space programs amidst heightening political tensions. Renewing a race for space superiority, whether through space missions, launch capabilities or satellites, this creates a platform for start-ups to grow.

Despite fluctuation year on year in venture capital investment in the space industry, Q1 2024 has shown a promising 33% increase on Q4 2023. As interest rates stabilize and investor confidence grows, VC funding looks set to continue on its upward trend from recent times. One thing catching people off guard is the way VC firms are investing their money, predictably satellites still provide the most value as seen through Eutelsat and SES's promising results. However, in 2024 a surprising 17.2% of investments have been into emerging industries – logistics, debris tracking, stations – with the majority being in logistics. Kurs Orbital (Italy) and Leo Labs (USA) are two firms benefitting from this switch in mindset, recently concluding large funding rounds for their logistics solutions.




In this figure from Oliver Wyman, you can see how venture capital investment slowed through 2022/23, yet all indicators suggest a rebound in 2024. What's also prevalent is the steady increase in percentage of investment being put into

Further evidence for venture capital firms moving away from investment in satellites for more high-risk opportunities is shown through two of the biggest funding rounds of 2023. Axiom Space, a Houston-based start-up raised $350 million for developing the first commercial space station. Sierra Space based out of Colorado raised $290 million for the same reason.

**What are VC firms looking for?**

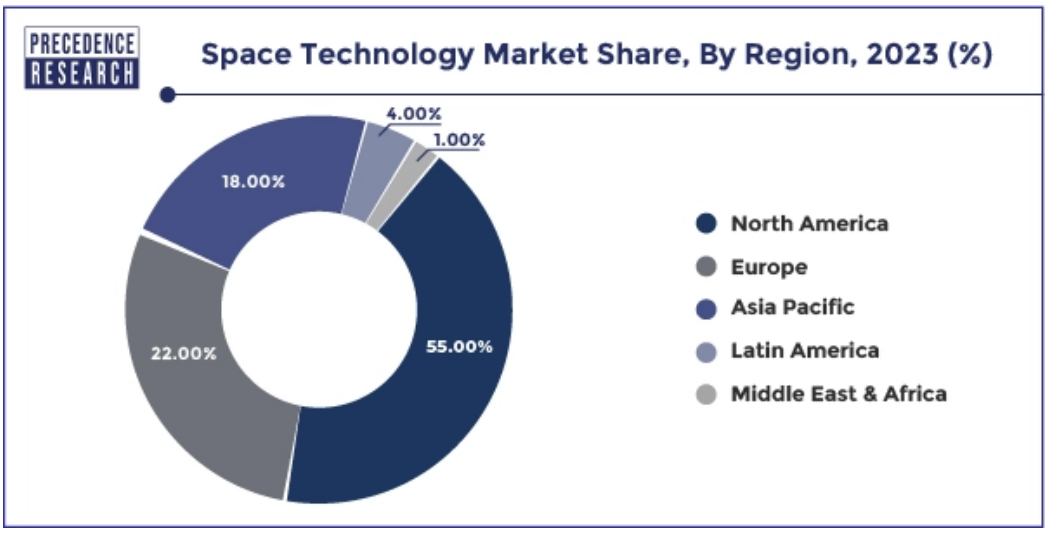
Two of the leading VC firms in the space industry, Seraphim Capital and Space Capital, emphasize a few of the main benchmarks and factors emerging in the industry: a focus on immediate revenue possibilities with one VC mentioning an expectation of 10-15x return on invested capital due to the high risk in the industry. Developing on this, venture capital firms want to see clear and intentional commercial objectives as strong footholds in the commercial market can lead to increased success. Additionally, proprietary technology mixed with experienced executives is extremely necessary to protect against market dilution.

**US Dominance:**

Clearly, the USA and North America are leaders in the space industry holding 55% of market share in 2023 as shown in the graph above. It is also equally clear to see why, with the likes of Space X and Blue Origin being from the USA and dominating the market.

In particular, Space X continues to push the boundaries of innovation and pave the way for others through reusable rockets and Starlink telecommunications. The robust private-sector ecosystem further solidifies the USA as a space powerhouse. However, potentially beneficially for the European market Trump's proposed policies mean that they must work a lot harder to compete with the American market,

this could propel European and other global firms into more collaborative mergers and research ideas, as already seen through the potential merger of Thales and Airbus. Specifically, their satellite and space operations.




**Downsides of VC in Space**

On the other hand, although venture capital has fueled innovation and growth in the industry and will continue to do so in the coming years, there are significant downsides to investing in the space industry.

- Firstly, venture capital tends to be relatively short-term focused, wanting immediate results, whereas with space projects there are long development cycles, meaning firms can start to cut corners to prioritize short-term revenue over long-term innovation.
- On top of this, the high risk of failure and market volatility creates notable problems. Due to the complexity of the technology involved and the dangers of space it is quite likely that investors can lose their entire investment. The market requires regulatory approval, government contracts and the right economic conditions to not only survive but thrive, as a consequence of the volatility of these conditions there is lots of fluctuation in space investment.
- Finally, space start-ups face exit challenges, as the industry currently lacks a robust market for IPO's or acquisitions compared to other tech sectors. This limit on exit opportunities pressurizes companies to generate liquidity, also limiting ROI for VC firms.

**The US Election's Impact on the Venture Capital Landscape**

The presidential election in the US has long been one of the most consequential global events, shaping not only domestic policy but global economic trends and business dynamics. The venture capital space, specifically, is particularly sensitive to market shifts and regulatory changes implemented by the incoming administration, so we pose the question; what is the contrast between the state of the industry prior to the election, the possible implications each candidate would have brought to the space, and the tangible results we are already seeing post confirmation of Donald Trump?

The year leading up to the election was characterized by significant sectoral shifts and a cautious resurgence of funding levels compared to the downturn of previous years, driven largely by greater stability in markets and greater confidence in deal making due to high-growth opportunities in the technology sector. As of the second quarter of this year, we have seen global funding reach $94 billion across 4,500 deals, with Artificial Intelligence emerging as a dominant focus, with the likes of OpenAI and Anthropic both secured mega-rounds exceeding $1 billion each. We also saw significant interest in climate tech, including electric vehicles and carbon capture technology reaching $40 billion, and a further $35 billion in biotechnology such as gene therapy and telehealth. Within these notable areas, we notice a greater emphasis on late-stage investment and profitability reflecting a more measured approach by VCs. While the US remains at the forefront of venture capital, there is visible transition from traditional tech hubs like Silicon Valley and New York to the increasingly prominent cities of Miami, Austin and Denver. Facing a landscape shaped by evolving consumer behaviors and questions surrounding taxation, antitrust enforcement and immigration reform, the imminent election was a pivotal moment for either future growth potential or new barriers to navigate for the VC ecosystem.

Although Trump has already been confirmed as the 47th president of the US, we would like to contrast what both his and Kamala's agendas proposed with regards to VC. As the democratic nominee, Harris emphasized strengthened support for investment in green energy, healthcare, and digital infrastructure. These policies would have helped channel federal funding into climate-tech startups, enabling venture capitalists with portfolios in these areas to see more public-private partnerships and better grant opportunities. She also championed initiatives to bridge the funding gap for underrepresented entrepreneurs through an expansion in the Small Business Administration, combined with tax incentives for diversity in VC investment. Furthermore, H-1B visa expansion would have promised a more international talent pool and easier acquisition of such employees for internationally focused startups. On the regulatory side, Harris promised to double down on antitrust scrutiny, notably for Big Tech, and while

this may have lowered the barriers to entry for smaller players, it could have prevented later stage firms' exit strategies if they were reliant on acquisition by industry leaders.

Trump's promises during his campaign were a continuation of the priorities of his first term in office. Deregulation, tax cuts, greater national security and bolstering traditional industries like manufacturing and energy were all central to his plans, aimed to benefit the defense sector, as well as cybersecurity and fintech. While minimal regulation and simpler and more streamlined business processes sound promising for bold startup investment and the faster development of emerging technologies, restrictive immigration policy risked exacerbating talent shortages and a highly restrictive trade approach with China could complicate an already tense relationship and inject uncertainty into supply chains and American startups with international ambitions. Trump's view of traditional energy over renewables could go against the global momentum towards a more sustainable economy and limit VC backed startups in this area.

Now that we have seen the intentions both candidates had, we can delve into the post-election results. Based on the record donations of over $242 million from VC including Andreesen Horowitz, it's clear this result was the favored one within the industry. Immediately following the confirmation of Trump's win, the whole market soared in the US and to a smaller extent internationally, with notable examples including a 14% jump in Tesla's stock, gains for all the top oil companies, the dollar hitting its highest level in the past 4 months and a rise in the value of Bitcoin. This optimistic economic response translates well to increased venture capital activity, as both well-established firms and startups expect to benefit from the new White House administration. Donald Trump Jr. has joined 1789 capital, a conservative-aligned venture firm, indicating a strategic alignment with the new policies. Other key players are now making moves, such as TCV (investor in prominent tech companies such as Netflix and Spotify) raising $3 billion for growth stage startups, or Kris Frederickson (ex-Coatue Management) aiming to raise $150 million for his new firm Verified Capital, poised to invest in various sectors including AI. In short, we are seeing a cautious optimism from the industry, where firms are attempting to leverage the anticipated pro-business policies. In the longer term, we expect lower compliance burdens and tax cuts to enhance return on investments, but international uncertainties due to geopolitical tendencies may favor the domestic VC ecosystem to a greater degree.

In conclusion, the decreasing interest rates combined with the slow and steady resurgence of funding levels have boosted consumer and business confidence and increased investments in high-risk, high-reward sectors, like the space industry. The increased investments in space related VC, the government led growth, and the expansion of the marketplace have marked the beginning of a new era.

The risk-loving VC firms are willing to invest more in the space sector, especially in new satellite technology as it is associated with sky-high payoffs. However, it should be noted that sometimes the goals of VC investors for short-run profits clash with the time lags involved in the production of space-related products. Additionally, the high economies of scale that firms enjoy make it harder for smaller firms to enter the market, hence, decreasing the success probability of startup VCs.

On the other hand, the economies of scale firms enjoy are also a vital aspect of their survival. Considering how slow production output rises compared to production costs, only a few firms can profitably exist in the market. Donald Trump's antitrust policies are, therefore, expected to benefit the industry in contrast to Kamala Harris' plan to crackdown on monopolies. Essentially, the massive average costs and spending in R&D in the space sector require firms to maintain supernormal profits to preserve their incentive to innovate. This means that in this industry a monopolistic market outcome is desired.

Following the 2024 US elections, European markets are incentivized to work harder to compete with US companies for the first time. This trend implies that Europe currently represents an emerging market in space-related VC investments, and further contributes to the growth of the space industry.

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