



Seraphim Space Investment Trust

Investment companies | Update | 7 November 2024

Entering orbit

Seraphim Space Investment Trust (SSIT) continues to see its portfolio of SpaceTech companies achieve what its managers believe are key milestones. Over SSIT's financial year, its companies raised \$900m in new investments, with SSIT contributing £11m across 10 positions. Examples include the oversubscribed IPO of Astroscale, the successful capital raise of D-Orbit, and the rising share price of AST SpaceMobile. This has resulted in positive NAV growth for SSIT during the period.

SSIT's portfolio companies have also made progress towards profitability, with several expected to reach this milestone in 2025. SSIT's management hopes that the overall portfolio will achieve profitability by that time as well.

Despite these successes, SSIT continues to trade at a wide discount, currently about 52%, which could be explained in the context of the broader selloff in growth stocks and investment trusts. We note that SSIT may not have fully benefited from the effects of falling interest rates, unlike some comparable investments.

The world's first listed SpaceTech fund

A diversified, international portfolio of predominantly growth-stage, privately-financed 'SpaceTech' businesses that have the potential to dominate their field and are category leaders with first mover advantages in areas such as global security (defence), climate and sustainability, connectivity, autonomous mobility, telecommunication and smart cities.

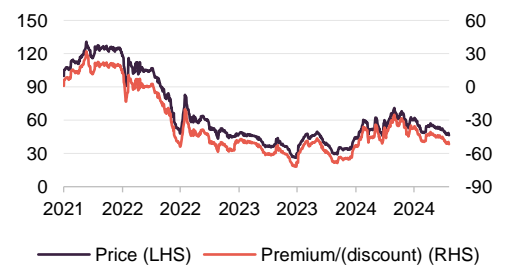
Year ended	Share price total return (%)	NAV total return (%)	MSCI ACWI total return (%)
31/10/2022	5.9	9.2	(23.9)
30/10/2023	(33.3)	(11.5)	4.4
31/10/2024	41.6	3.5	25.9

Source: Morningstar, Marten & Co

Sector	Growth capital
Ticker	SSIT LN
Base currency	GBP
Price	46.5p
NAV	96.2p
Premium/(discount)	(51.7%)
Yield	Nil

Share price and discount

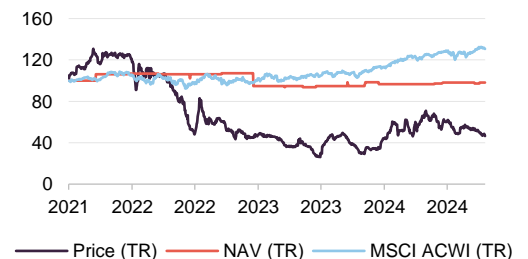
Time period 14/07/2021 to 31/10/2024



Source: Morningstar, Marten & Co

Performance over five years

Time period 14/07/2021 to 31/10/2024



Source: Morningstar, Marten & Co

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Domicile	England & Wales
Inception date	14 July 2021
Manager	Seraphim Space LLP
Market cap	110.3m
Shares outstanding (exc. treasury shares)	237,198,584
Daily vol. (1-yr. avg.)	354,728
Net gearing	Nil

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Crossing the threshold?

SSIT has recently published its annual results, for the year ending June 2024, and these suggest that SSIT sits on a possible threshold. As we point out on page 7, SSIT's portfolio companies have made progress in achieving profitability, with six of SSIT's holdings (five of which are in its top 10) expected to become EBITDA profitable by the end of 2025. While according to management forecasts of SSIT's portfolio companies, SSIT's overall portfolio will become profitable within the next 12 to 18 months.

While profitability is a milestone for any successful company, given the arguably fast-changing nature of the SpaceTech industry it may be more important as it demonstrates the commercial viability of these products.

Wide discounts seem to be the norm for SSIT's peer group, but its current discount of 52% is amongst the widest. The market may be yet to recognise the material SSIT's investments have made.

Market update – the (not so) final frontier

In our [previous note](#), we provided an outline of the opportunities the SSIT team believes are presented by the SpaceTech industry. We also gave an overview of what the manager believes are key developments that have opened up the market to innovative companies, offering previously unheard-of technological opportunities to a wider audience.

While we encourage readers to refer to that note for a more comprehensive explanation of the broader space opportunities, it is important to highlight recent developments that may have further evolved the investment case for SSIT. Throughout 2024, the space industry has witnessed several notable events, providing further evidence of the possible investment potential within the sector.

Japan's successful moon mission in January 2024 was followed shortly after by Intuitive Machines becoming the first commercial company to land on the moon. In February, Varda Space Industries recovered a capsule containing crystals of an antiviral drug that were grown in orbit, becoming just the third commercial company to achieve this. With this proof of concept, it has raised more money and is planning more missions in 2025.

SpaceX continues to pioneer new advancements in SpaceTech

SpaceX, the space exploration company that initially opened the market to wider participants, has made several strides in 2024, which could act as catalysts for the broader industry. In October, SpaceX successfully captured a rocket booster mid-air after its descent to earth. These boosters will power SpaceX's new giant Starship vehicle, which promises to redefine the cost of access to space, with most commentators expecting a further 50% fall in price per kilo. This is arguably a significant milestone, as not only does SpaceX produce the world's most powerful rocket boosters, but safely capturing a booster prior to impact enables easier reuse, potentially further reducing the cost of sending assets into orbit.

Starship has a large payload capacity of up to 150 tonnes (when safely recovered). It can also carry up to 100 people into space. This makes it the most powerful rocket ever to fly – twice as powerful as the Saturn V rocket that first took humans to the

moon. Its maximum payload is also twice that of some competitors, such as Blue Origin's newest rocket, which has a capacity of 45 tonnes. In September, SpaceX also completed the first commercial spacewalk, with two astronauts – one a paying customer – successfully exiting one of its orbiting ships.

China recently unveiled its Starship competitor, the Long March 9, which bears a marked resemblance to it. Elsewhere, other developments have been made by lesser-known companies, including those in SSIT's portfolio, with examples highlighted on page 10.

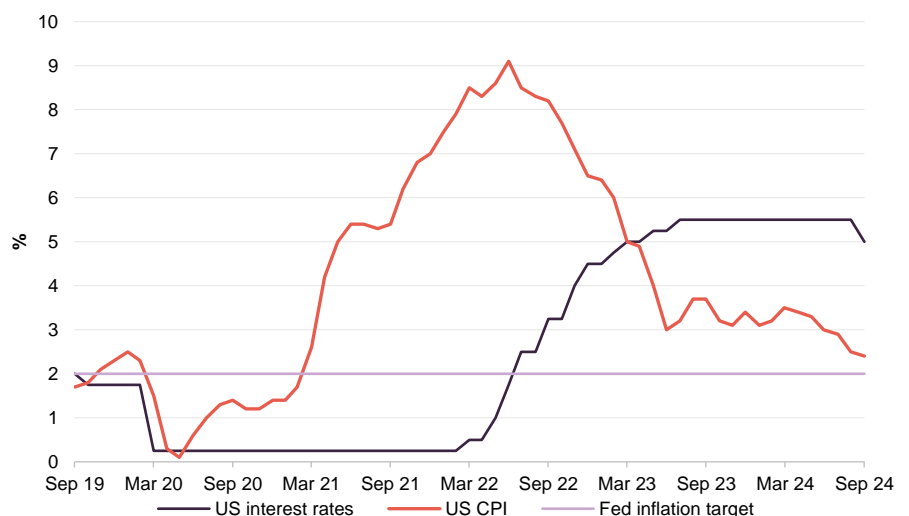
Expanding opportunities

The SpaceTech industry has opened up new possibilities for sectors such as pharmaceuticals and manufacturing, while tangible opportunities have already emerged from defence spending and efforts to combat climate change. These funding sources continue to drive demand for SpaceTech, with several of SSIT's portfolio companies securing contracts with governments and defence agencies (details on page 7). The US Space Force has requested a \$30bn budget for 2025, equating to 3.5% of the total defence budget request for that year. This is marginally higher than its 2024 budget and double its original request from five years ago. Private demand for SpaceTech also continues to show robust growth, the manager adds.

A recent report produced by the World Economic Forum and McKinsey & Company has estimated that lower costs and improved access to space-enabled technologies such as communications; positioning, navigation and timing; and Earth observation services could take the global space economy to \$1.8trn by 2035, up from \$630bn in 2023.

Interest rates have finally landed

Figure 1: US interest rates and inflation



Source: Bloomberg

While the fundamentals of the space industry continue to develop, sentiment and valuations may remain vulnerable to broader market forces, with interest rates being

Falling rates could be a catalyst for increased demand in high growth strategies like SSIT

a key factor. These cutting-edge growth companies may not use debt to finance their operations, but interest rate expectations have a big influence on the future value of their earnings.

2024 has seen a shift in market expectations around interest rates, with inflation in developed markets heading towards targets set by various central banks. The US Federal Reserve, arguably the most influential in global rate expectations, made a larger-than-expected 0.5% interest rate cut in September, citing “progress on inflation and the balance of risks”. This could be seen as a key turning point for growth investing and may serve as a catalyst for renewed demand for SSIT.

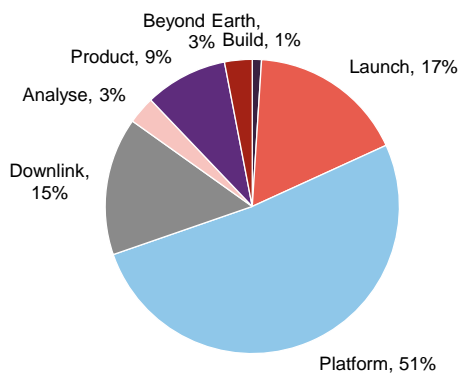
These positive developments have already started to benefit the largest growth stocks, with the Dow Jones Global Technology Index nearing all-time highs. The SSIT team is optimistic that this momentum will extend to SSIT and its underlying holdings in the near term.

Asset Allocation

SSIT converted its early-stage companies into a stake in Seraphim’s new venture fund.

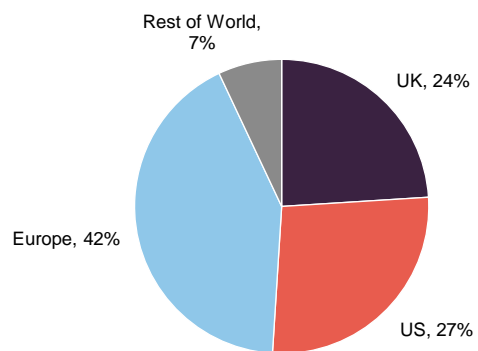
As of the end of June 2024 (SSIT’s financial year end), SSIT had a portfolio of 25 companies, valued at £201.5m. This compares to the 33 companies held at December 2023 (the data used in our most recent note), with a value of £198m. The fall in the number of companies reflects the sale of SSIT’s £3.6m investment in its ‘early-stage portfolio’ (nine companies that represent all of SSIT’s seed stage companies, leaving the fund focused on growth stage businesses) to Seraphim Space’s new early venture fund (Seraphim Space Ventures II LP). The companies were sold for £3.8m (a small profit) and the capital was used to acquire an equal stake in the venture fund, effectively swapping investments between the two. This transaction should allow SSIT to focus on the more mature assets which better characterise its investment process, and SSIT will make no further commitments to the venture fund.

Figure 2: SSIT portfolio by sub-sector as at 30 June 2024



Source: Seraphim Space

Figure 3: SSIT portfolio by geography as at 30 June 2024



Source: Seraphim Space

Figure 2 shows that SSIT offers exposure to a range of different subsectors. Its portfolio exposures remain largely in line with those of our last note, with platforms remaining the largest exposure. Platforms capture a wide range of companies

however, including GPS, observation, and 5G services. SSIT also remains diversified by region, as shown in Figure 3, retaining a similar geographical split as per our last note.

Top 10

Figure 4: SSIT 10-largest holdings as at 30 June 2024

Stock	Subsector	Country	As at 30/06/24 (%)	As at 30/06/24 (£m)	As at 31/03/24 (£m)	Change (£m)
ICEYE	Platform/Earth observation	Finland	20.9	47.8	45.4	(0.1)
D-Orbit	Launch/in-orbit services	Italy	14.5	33.1	33.5	11.9
ALL.SPACE	Downlink/ground terminals	UK	10.6	24.1	24.1	2.9
HawkEye 360	Platform/Earth observation	US	9.4	21.5	21.4	0.8
LeoLabs	Product/data platforms	US	5.7	12.9	13.2	0.8
SatVu	Platform/Earth observation	UK	4.9	11.2	11.0	(3.7)
Xona Space Systems	Platform/navigation	US	2.3	5.3	6.9	n/a
PlanetWatchers	Analyse/data analytics	UK	2.1	4.8	4.8	0.0
AST SpaceMobile	Satellite communications	US	1.9	4.4	0.9	3.5
Tomorrow.io	Platform/data platforms	US	1.7	4.0	4.0	0.0
Total			74.1	169.1		

Source: Seraphim Space

Figure 4 lists SSIT's top 10 holdings as at 30 June 2024. One company, Astroscale, has fallen out of the top ten since our last note (which used data as of 31 March 2024). SSIT sold 40% of its holding in Astroscale during Astroscale's IPO in June 2024. It was replaced with AST SpaceMobile, whose entrance in the top 10 reflects the strong rise in its share price. We described SSIT's major holdings in detail in our last note.

Investment activity

New investments

During its 2024 financial year, SSIT made 10 investments totalling £11m. Three of these were to new companies, including a £1.6m investment in Skylo, which provides global cellular network coverage through its satellites, and £0.9m across two early-stage ventures. Additionally, SSIT made its £3.8m investment in the Seraphim Space Ventures II LP, referred to above.

SSIT also made six follow-on investments, including £2.8m in ALL.SPACE, £1m in Xona Space Systems, £0.2m each in SatVu and Voyager, and £0.5m across two early-stage investments. SSIT's management notes that companies used the newly raised capital to support growth, while early-stage companies focused on implementing their proof-of-concepts.

Of the three major investments made over the financial year (those exceeding £1m), we have already covered SSIT's transactions in ALL.SPACE and Skylo in our previous note. Regarding Xona: in May 2024, SSIT made a follow-on investment as part of a \$19m Series A funding round. Xona is developing a next-generation GPS satellite system, designed to provide more secure and precise positioning and timing data than current GPS systems. Xona used the new capital to launch its first production satellite and fulfil the government contracts relating to its private GPS network.

Since the year-end, SSIT has made a further \$5m investment in ALL.SPACE as part of a funding round in August.

Disposals

In addition to the previously mentioned sale of SSIT's early-stage companies, another notable disposal was the partial sale of Astroscale. Astroscale, a Tokyo-based company, is developing solutions to remove debris from earth's orbit. The company has benefited from a potentially unique opportunity – regulation of the space industry. As the space sector advances, the issue of space debris has become an increasingly costly side effect, and Astroscale may be at the forefront of addressing this challenge.

Astroscale completed an oversubscribed IPO

On 5 June 2024, Astroscale successfully completed a heavily oversubscribed IPO on the Tokyo Stock Exchange, raising \$113m of new capital. Due to high demand, the stock closed its first trading day at 1,281 yen per share, compared to an initial IPO price of 850 yen. SSIT sold 40% of its investment in Astroscale during the IPO, equivalent to 530,000 shares, for a total of £3m – representing a 6% discount to SSIT's last reported fair value (in sterling terms).

Since the end of its financial year, SSIT has sold an additional 629,240 shares, equivalent to 47% of its remaining holding, for a further £3m – meaning that SSIT had sold 87% of its initial investment, at an average 15.2% discount relative to the last reported fair value (in sterling terms).

Corporate activity

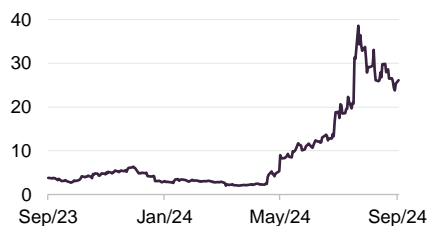
Beyond SSIT's own investment activities, many of its portfolio companies have made advancements over the year, hitting milestones in their business objectives, or successfully completing fundraising rounds. During SSIT's financial year, \$900m was raised by its portfolio companies. Below are some noteworthy examples of these developments.

SSIT's holdings have raised \$900m in new capital over its financial year

ICEYE, which provides highly detailed observation and imaging of the earth's surface, has continued to grow. It completed an oversubscribed capital raise of \$93m and also signed several new contracts with government agencies.

D-Orbit, a space logistics and transportation provider, completed a capital raise of approximately €150m, one of the largest by a European space company and among the largest by any company over the past 12 months. The raise, led by Japanese investment bank Marubeni, resulted in a valuation uplift for SSIT, as it was priced at a premium to SSIT's book value. D-Orbit also secured a €119m contract with the European Space Agency for its inaugural satellite service, outside of SSIT's financial year.

Figure 5: AST SpaceMobile (USD)



Source: Bloomberg

HawkEye 360, a signals intelligence firm, completed a \$68m funding round led by BlackRock and launched three satellite clusters (each containing three satellites) over the last 12 months. SSIT's management note that this enhanced the quality of its data and allowed it to expand its client base, particularly among US defence clients.

AST SpaceMobile, which operates a space-based cellular broadband satellite network, experienced a recovery in its share price over the past 12 months, increasing eightfold. This increase in investor demand may have been driven by a \$200m strategic investment from Google and AT&T, alongside an agreement with AT&T and Verizon to provide the company's first space-based broadband network directly to subscribers' mobile phones. The increase in share price has brought AST's market cap to \$6.7bn. AST also successfully launched the first batch of its five industrial cell towers in space.

A strong cash runway and a path to profitability

Based on the fair value of SSIT's private companies, 77% of its portfolio is either fully funded (has sufficient cash flow to meet its spending needs) or has a cash runway of at least 12 months or more. Six of SSIT's holdings are fully funded, five of which are in the top 10. Among those that are not fully funded, the average cash runway is 14 months, meaning they can sustain projected expenditures for that period. Only five of SSIT's holdings have less than 12 months of cash runway, though SSIT's management notes that these companies are actively working to extend their runway beyond 12 months.

This financial stability may lead to a reduction in certain risks, as the majority of SSIT's portfolio are more likely to remain operationally viable in the near future (based on their cash runways). SSIT's management also notes that a cash runway of less than 12 months is not uncommon for venture-stage companies, as fundraising typically operates on an 18-month cycle.

SSIT's management believe that their underlying holdings continue to make significant progress toward profitability (on an EBITDA basis), with its top 10 holdings achieving an average revenue growth of 71% over the financial year – a key milestone on the path to self-sufficiency. Six of SSIT's holdings (five of which are in its top 10) are expected to become EBITDA profitable by the end of 2025.

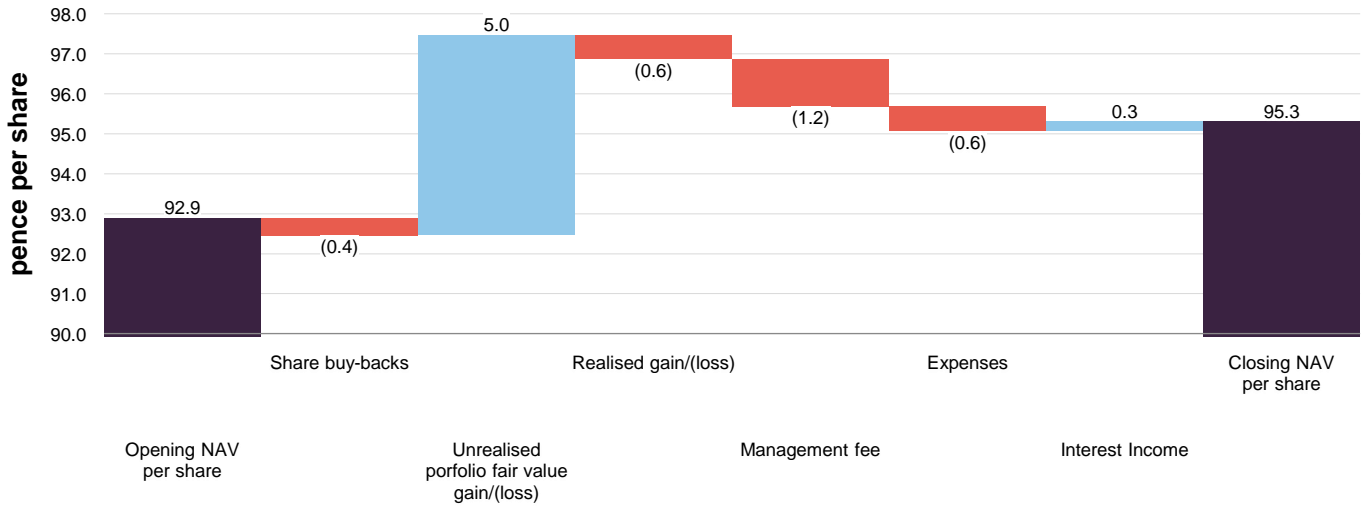
SSIT's management believes that reaching profitability will be a key catalyst for the IPO of their unlisted investments and according to management forecasts of SSIT's portfolio companies, SSIT's overall portfolio will become profitable within the next 12 to 18 months.

Performance

As of 30 June 2024, SSIT reported a total NAV of £228.1m (96.18p per share), representing a 2.5% increase from the £222.4m (92.90p per share) reported 12 months earlier. The largest contributor to this growth was unrealised fair value gains within its portfolio. These unrealised gains may be positive indicator for SSIT, as it could validate the team's investment thesis, with the SSIT team commenting that despite the challenging macroeconomic environment there remains strong investor interest in the SpaceTech market.

SSIT's investments may be on a track to achieving profitability

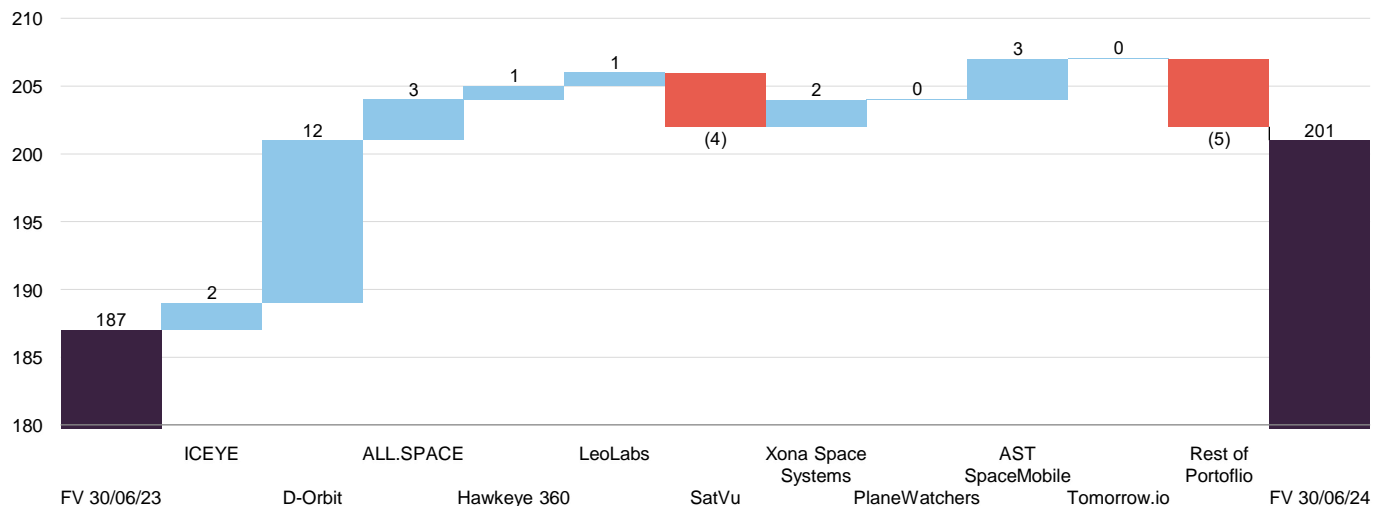
Figure 6: NAV per share movements



Source: Seraphim

The breakdown of the changes in the fair value of SSIT's individual holdings over the period can be seen below. The total value of SSIT's portfolio companies increased by 7.5% over the period, increasing to £201.5m from £187.4m. SSIT's holdings do not typically utilise periodic valuations (e.g. quarterly) and as a result some of its holdings have had no cause to adjust their fair value.

Figure 7: Investment portfolio movements



Source: Seraphim

The positive changes can be attributed to the various funding rounds held over the year, or share price movements over the period.

Portfolio returns

SSIT's positive NAV growth was driven by unrealised returns

Since its inception on 14 July 2021, SSIT has delivered a negative NAV total return of (1.9%). The largest detractor from SSIT's performance has been its listed equity allocation, which, as of 30 June 2024, was down approximately 83% compared to its initial cost. In contrast, the valuation of its private portfolio has risen by 27% relative to its initial cost. Both portfolios have shown slight improvement since our last note, with the private portfolio benefiting from premium valuations during recent fundraising rounds, while the listed portfolio has seen a recovery in some share prices, such as AST SpaceMobile.

The decline in the value of the listed portfolio can largely be attributed to fundamental issues with certain stocks, such as Arqit Quantum, which we discussed in our previous note. It seems that most of the losses have already been realised, with these issues now possibly being reflected in the current valuation of SSIT's listed portfolio.

Figure 8: SSIT performance since launch



Source: Morningstar, Marten & Co

Given the nascency of the SpaceTech sector, it can be challenging to assign an appropriate benchmark to SSIT. Since SSIT's launch, its NAV and share price have underperformed the MSCI ACWI, a trend noted in our previous analysis. This underperformance arguably reflects both the significant impact of rising interest rates on SSIT's performance relative to global equities, as well as the narrow group of mega cap companies that have driven broader global markets.

Figure 9: SSIT performance over periods ended 31 October 2024

	3 months (%)	6 months (%)	1 year (%)	3 years (%)	Since launch (%)
Price	(14.7)	(23.3)	41.6	(63.6)	(53.5)
NAV ¹	0.0	1.7	3.5	(7.5)	(1.9)
MSCI ACWI	3.7	8.0	25.9	25.2	30.6

Source: Morningstar, Marten & Co. 1) NAV performance is based on the latest NAV valuation, as of 30 June 2024. SSIT commenced trading on 14 July 2021

Dividend

SSIT is capital growth focused, and dividends may be unlikely

SSIT aims to produce capital growth. Its investments are in growth-stage SpaceTech companies, so it may be unlikely to pay dividends beyond those necessary to maintain its investment trust status. SSIT's revenue losses of 1.57p per share in its financial year ended 30 June 2024 and 1.88p for the prior year are a good indication that dividends are unlikely. All previous revenue losses would need to be covered by revenue earnings before SSIT could pay a dividend.

Premium/(discount)

Figure 10: SSIT premium/(discount) from launch to end October 2024



Source: Morningstar, Marten & Co

Over the 12 months ended 31 October 2024, SSIT's shares traded within a range of a 68.7% discount to NAV to a 24.9% discount, averaging at a 47.2% discount. On 05 November 2024, SSIT was trading at a 51.7% discount.

SSIT briefly traded at a premium following its IPO in July 2021. However, it may have been impacted by the growth stock selloff in 2022, driven by rising inflation and increasing interest rate expectations. SSIT's discount began to narrow in 2024 perhaps due to developed market monetary policies easing. Over the past three months, SSIT's discount has started to widen again, which corresponds with a decline in trading volumes. September marked the lowest monthly trading volume since IPO.

While SSIT is arguably unique in its proposition, its discount is not, as can be seen in Figure 10. The entire growth capital sector trades on double digit discounts, currently trading on an average discount of 48%. SSIT's discount is, however, the second widest in this peer group, as well as having the second lowest Z-score, currently (0.43).

SSIT has authorities in place to buy back shares, which the board may use when deemed to be in the best interests of shareholders as a whole. The last time the board repurchased shares was in September 2023.

Fund profile

More information is available on the trust's website investors.seraphim.vc

SSIT aims to generate capital growth over the long term through investment in a diversified international portfolio of SpaceTech businesses (which SSIT defines as entities that rely on space-based connectivity and/or precision, navigation, and timing signals or whose technology or services are already addressing, originally derived from, or potentially benefiting, the space sector).

SSIT was launched in July 2021, hitting its capital raise target, and started life with cash of about £178.4m. Total assets at the end of June 2024 were £228.1m.

SSIT's AIFM is Seraphim Space Manager LLP (Seraphim).

Measuring success

SSIT is targeting annualised NAV returns of 20% over the long term. The trust has no formal index benchmark, but as it has a global portfolio, we have compared it with the MSCI All Countries World Index (MSCI ACWI) for simplicity's sake. The company also compares itself to the MSCI World Aero and Defence Index.

Past research

We previously published our initiation note for SSIT, [Science fiction becoming science fact](#), on 14 August 2024, which can be read [here](#).



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