SME4SPACE

THE REPRESENTATIVE ORGANISATION OF SMES IN EUROPE'S SPACE INDUSTRY

Financial Challenges of SMEs in Europe's Space Industry

And

Proposal to support industrialisation through prefinancing of Non-Recurring Costs (NRC)

Introduction

SMEs are a critical part of Europe's space industry. They are part of the supply chain of the major European missions and offer end-to-end products and services to the global space industry and consumers.

As the grouping of these SMEs, SME4SPACE is monitoring the economic importance of SMEs and their financial strengths and weaknesses by recurring study executed by the KU Leuven university in collaboration with the European Space Agency SME Office[1]. In this study the financial data of approximately 2000 SMEs are processed.

Whereas SMEs have a good solvability, their need for capital is, compared to other industries, very high. The study also teaches us that the access to external funding is challenging for SMEs whereas overall profitably is low.

These challenges need to be addressed at the moment SMEs have to scale-up and enter a new industralisation phase.

SME4SPACE presents in this paper an overview of the relevant financial data and a proposal for support measures specifically aimed at the SMEs that are envisaging this new phase.

Financial Sustainability of SMEs in the European Space Industry

Total Assets and Turnover

The space industry as a whole is a highly capital-intensive sector, where companies have to invest heavily to be able to successfully compete in the market. In 2023, the SMEs in the European space industry

[1] The 2024 version of this study can be found at https://www.sme4space.org/document/executive-summary-of-study-on-economic-importance-and-financial-health-of-smes-in-the-european-space-industry-i-2024-edition/

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- had an invested amount of close to **7.8 billion euros**[2]
- **had a total turnover of approximately 5.4 billion euros**
- had a ratio of turnover to assets **of 0.78, much below 1,** which is unusually low.

The space sector requires a large amount of investment but returns less than a euro turnover for each euro invested (Dekeyser, Teirlinck, & Willekens, 2025), or, in other words, that 1 Euro of growth requires more than 1.2 Euro of investment. Companies require huge resources for the

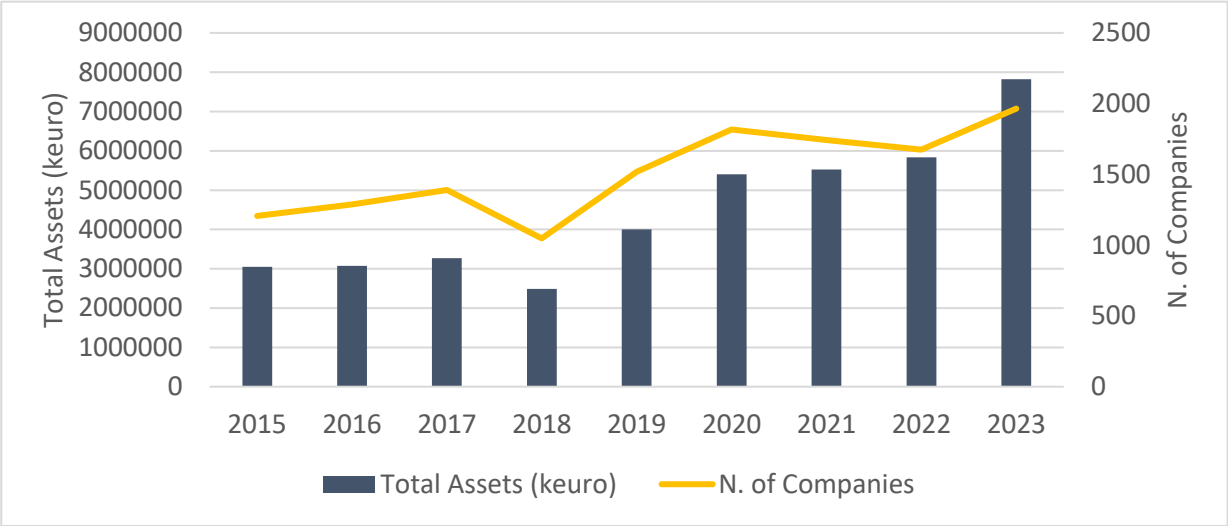


Figure 1: Total assets and number of companies in the European Space Sector from 2015 - 2023. Numbers as taken from yearly KU Leuven study.

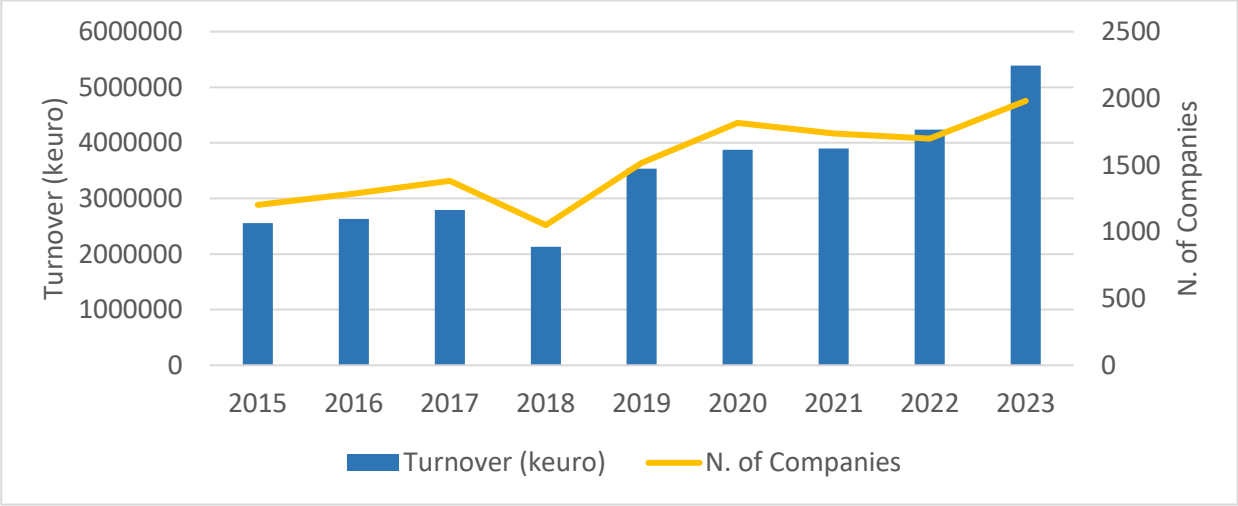


Figure 2: Total turnover and number of companies in the European Space Sector from 2015 - 20123. Numbers as taken from yearly KU Leuven study.

[2] A qualitative survey among SMEs reveals that on average 67% of TO and 77% of employment is space-related.

scaling-up of production facilities along with long production cycles typical for the sector (SME4SPACE).

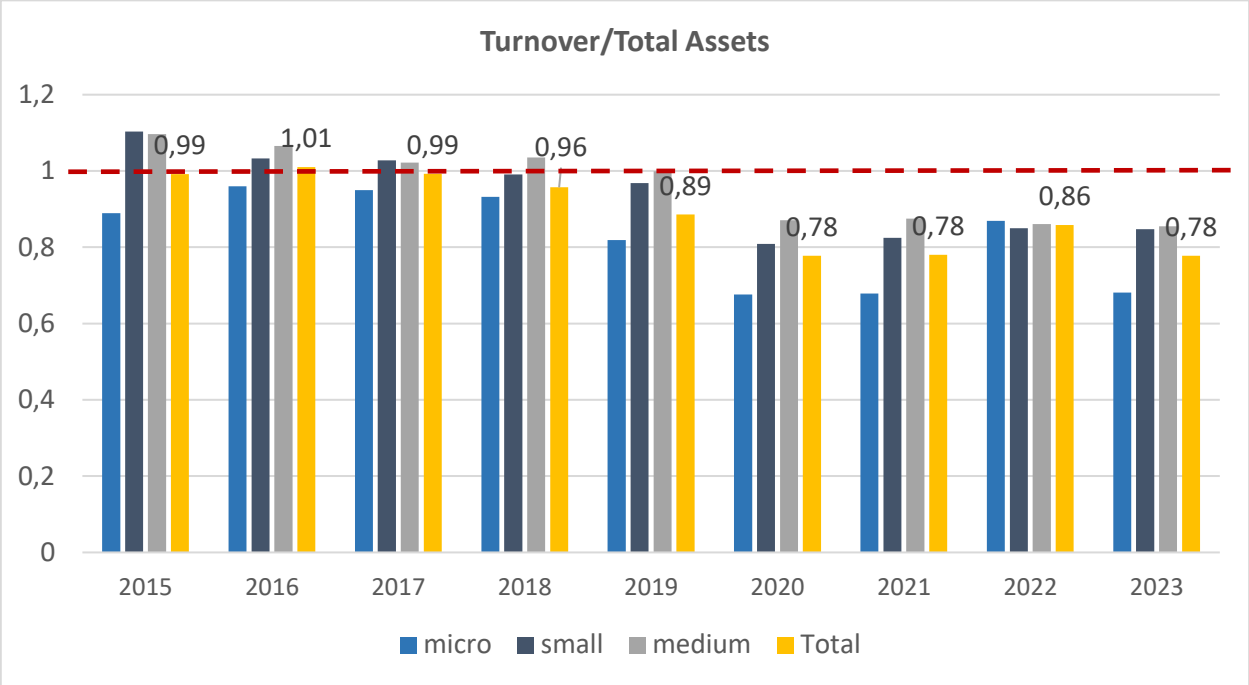


Figure 3: Turnover over totals assets per company size, 2015 - 2023. Number as taken from yearly KU Leuven study.

Leverage

The ratio of long-term debt to assets is an indicator of the difficulty of European Space SMEs to get access to long term debt financing like bank loans. For medium-sized enterprises this is around **11%**, while micro companies barely have any long-term financing at all. At the same time this percentage seems to be declining.

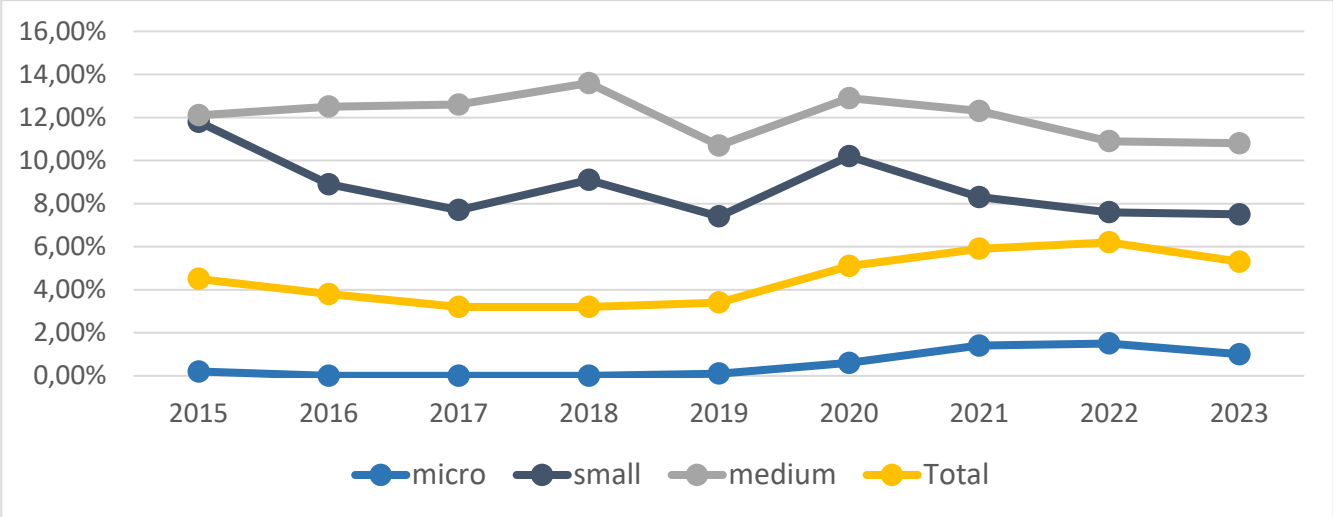


Figure 4: Long-term debt to assets ratio by company size (for the median company) for 2015 - 2023. Numbers as taken from yearly KU Leuven study.

Table 1: Bankability or total debts below 2.5 times equity by company size for 2020 - 2023. As taken from yearly KU Leuven study.

	2020		2021		2022		2023	
	median	N	median	N	median	N	median	N
micro	0.555	769	0.593	740	0.588	650	0.588	760
small	0.672	524	0.658	514	0.612	544	0.633	603
medium	0.682	157	0.728	162	0.673	168	0.689	193
Total	0.611	1,450	0.632	1,416	0.608	1,362	0.618	1,556

Bank loans and other forms of debt funding are almost inaccessible for space SMEs.

Profitability

Profitability in general is low for all types and sizes of SMEs, and has been further decreasing, as shown by return on assets measured through net income over assets was only 3% in 2023 (Dekeyser, Teirlinck, & Willekens, 2025).

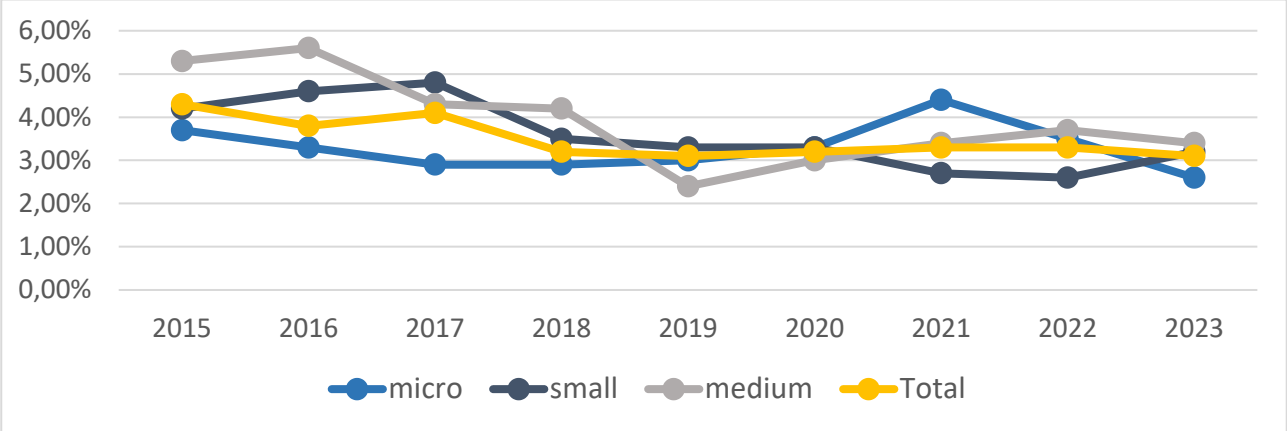


Figure 5: Profitability: Return on Assets by company size for 2015 - 2023. Numbers as taken from yearly KU Leuven study.

SME4SPACE proposal

As can be seen from the statistics above, European SMEs in the space sector are struggling with profitability and access to long term debt. While measures to support equity funding and venture capital investment are useful, a new instrument to finance further development, i.e. the scaling-up and industrialisation is required.

SMESPACE therefore proposes a dedicated action for the support of SMEs in financing the NRCs through **loans by public authorities for investment in production capacity of SMEs, that are to be reimbursed at the moment of successful commercialisation.**

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NRC definition

Non-recurring (engineering) costs or expenses are one-time costs and investments required for the research, development and testing of a new product or product enhancement (Daley, et al., 2021). ESA defines them as "Non-recurring engineering costs refers to items that are one-time engineering costs associated with the project" (European Space Agency, 2024).

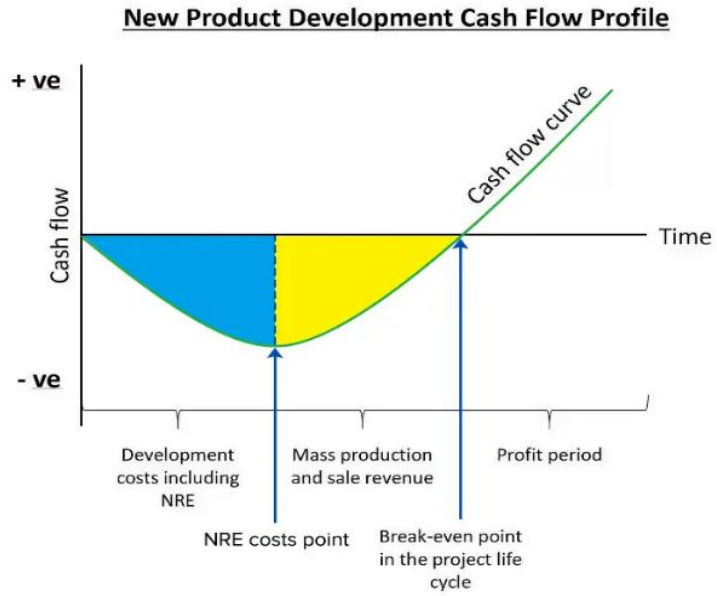


Figure 6: New Product Development Cash Flow Profile showing NRE cost impact. As taken from (Gan, n.d.)

This cost occurs regardless of the amount of prototypes/products manufactured, but once the product is in production, NRCs are no longer incurred and will be depreciated.
While these costs occur only once, they can be very high impacting a company's financial viability and become sunk costs when a development faces cancellations, delays or changes of scope.

Management of NRCs is therefore a significant barrier to growth for SMEs and start-ups in the space sector, considering that these expenses often arise before any revenue is generated.

Example of pre-financing loan and reimbursement: Europe's aeronautics industry

Airbus programmes

This type of pre-financing of investment previously proved successful in the aeronautics sector, including for Airbus projects (Belspo, 2020).

Different countries had support schemes for this and the example of Belgium is further elaborated in annex. In this financing scheme, medium-sized enterprises could apply for financing of 70% of the acceptable cost of industrial research and 45% of experimental development, while small enterprises could respectively go for 80% and 55%.

UK Government Investments

The UK Government Investment (UKGI) supported the design and development of new aircraft programmes in 2018 through Repayable Launch Investment contracts (Hayward K. , 2023). This investment programme took the form of a percentage – usually 50% but sometimes up to 100% - of all NRCs associated with design and development through to series production advanced up front, with or without interest, which were repaid through a levy on sales.
This investment was highly successful, with high returns from investment into Airbus types.

In 2010, the UK Secretary of State for Business, Innovation and Skills wrote the following on the Repayable Launch Investment (Secretary of State for Business, Innovation and Skills, 2010):

> *"This investment has not only been successful in supporting the thriving aerospace sector, but has also delivered a substantial return to the taxpayer. We believe that the Government should continue to offer Repayable Launch Investment to companies - where no viable commercial financing is available - to ensure that the United Kingdom's aerospace industry retains its position as a world leader in the development of new technologies. To do otherwise would put the industry at a serious competitive disadvantage given the prevalence of similar measures available to overseas competitors."*

Launch Aid and its public support of capital-intensive development costs have been shown to result in better credit rating, and as a consequence reduced borrowing costs on capital markets, improving the financial health of the company (Maennig & Wittig, 2010).

Public funding schemes to cover the non-recurring costs associated with the construction of airplanes have allowed Europe to build a strong aeronautics sector able to compete on a worldwide scale. This way of working could serve as a blueprint for the space/aerospace sector as well.

Conclusion

SMEs in the European space industry are highly innovative and have a significant role to play, but require a lot of investment and offer poor return. This makes them unloved by banks and block their access to loans. The decreasing profitability of SMEs indicate that the financial sustainability of the SME group of the space industry should be a primary aim of an overall profitability policy.

We have learned from our colleagues in the aeronautics industry how to deal with the non-recurring costs and how public authorities can support the start-up of new activities by covering these non-recurring costs. A support scheme specifically addressing the non-recurring costs would help the build-up of the sustainable supply source required in our own industry, partially improving the difficulty these companies have in accessing external funding.

Therefore, we propose the financing of NRCs through **loans by public authorities for investment in production capacity of SMEs, that are to be reimbursed at the moment of successful commercialisation.**

This financing scheme would effectively address several critical issues:

- The extremely capital-intensive nature of the space industry, including for scaling-up of production,
- New Space's long production cycles,
- Difficult access to finance and external funding,
- Non-existent room for financing through pre-payments of customers,
- The questioning of the sustainability of the supply chain and more particularly of the SMEs in the supply chain by other stakeholders. This measure would strengthen the production basis considerably.

SME4SPACE welcomes the willingness of the European Space Agency to propose actions to cope with the pressing issues of profitability of the European space industry, and we hope this leads to concrete, targeted financial instruments that reflect the unique challenges faced by SMEs. By directly addressing non-recurrent costs and supporting early-stage investments, ESA can help unlock the full potential of Europe's space ecosystem and leverage the capabilities of SMEs.

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Annex: Belgian example of pre-financing loan and reimbursement

Reimbursement of the NRC loan was possible through different scenarios:

- Linear reimbursement with variable interest charges
- Linear reimbursement with fixed interest charges
- Five-lot reimbursement with fixed interest charges
- Exponential reimbursement with fixed interest charges
- Exponential reimbursement with variable interest charges

Another option for support in the form of reimbursable advances with no interest were possible for medium-sized enterprises for 60% of the acceptable cost of industrial research and 35% of experimental development, while small enterprises could respectively go for 70% and 45%. These could be reimbursed through the following scenarios:

- Linear reimbursement
- Five-lot reimbursement
- Exponential reimbursement

All of these scenarios are based on

- INTERVENTION: The full amount paid to the beneficiary under its project and based on the applicable intervention rates
- SHIPSET: The set of goods and services developed under the project and required to equip one aircraft,
- SUCCES: The number of SHIPSETS which has been contractually defined in the definition of success,
- TOTAL INTEREST: The compound interest ex-ante and lump-sum calculated based on the SUCCESS.

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