Executive summary

Why a new *Handbook on Measuring the Space Economy*?

Space activities are growing globally, and the services derived from them are increasingly important to society. This second edition of the *Handbook on Measuring the Space Economy* responds to the needs of policymakers from multiple economic sectors that are reflecting on such changes in their measurement strategies. It takes account of the evolving landscape of space activities, technologies and user needs surrounding two core observations:

- **Increasingly, a wide diversity of actors is involved in space activities:** Government actors more than ever pursue strategic objectives in the space economy in tandem with commercial actors. A better tracking of the effects of public and private expenditure in the space economy is required if the overall impact of such trends is to be assessed.
- **Studying the economics of space activities has become professionalised but measuring the space economy remains a challenge:** The range of space activities has evolved significantly over the past ten years. Critical infrastructures such as telecommunications and an increasing number of commercial digital applications now depend heavily on space capabilities. In advanced economies, the space economy is becoming more complex and the line between space and non-space activities is increasingly difficult to assess.

Key space economy measurement challenges

Important efforts are underway to better understand the space economy and common practices are beginning to emerge. Increasing numbers of space economy surveys, for example, mean that the quality and coverage of publicly available data and analysis are improving. However, key measurement challenges remain.

Existing statistical classification systems do not define space activities in isolation from other related activities. And no technical guidelines exist to ensure statistics are comparable over time and across sectors and countries. The information required to conduct space economy evaluations is therefore not readily available and often gathered on a case-by-case basis (information is particularly scarce concerning the non-market effects of space activities).

Meanwhile, collecting information on the space economy through special surveys can be a costly and time-consuming exercise. As a result, space economy assessments tend to be heavily reliant on case studies and expert opinion, which can make it difficult to test them for validity and compare with other areas. In impact assessment, robust counterfactuals are not always developed, which increases the risk of inaccurate estimations.

Solutions to the challenges of measuring the space economy are provided in this *Handbook*

This publication updates and expands upon the first edition of the *Handbook* with a particular focus on resolving measurement challenges. It provides:

- **Revised definitions of space economy terms and concepts:** A high-level definition of the space economy is given to set the boundaries of assessments and updated industrial classification codes are provided to encourage international comparability.
- **Principles for conducting space economy surveys:** Based on internationally agreed standards and an extensive review of more than 20 space industry questionnaires, the key principles for developing space economy surveys are provided alongside advice on their implementation.
- **An introduction to space activity impact assessment:** Existing studies on the impacts of the space economy are summarised and the techniques used are outlined to introduce readers to the methods currently employed.

Recommendations for improving evaluations of the space economy

Given the challenges outlined above, studies based on the results of targeted surveys will likely remain the most efficient approach for space economy analysis in the near future. But space administrations and statistical agencies are encouraged to be innovative in their use of different data sources including through the exploration of national accounting approaches to space economy measurement. In particular, the *Handbook* recommends practitioners to:

- **Develop policy-oriented evaluation frameworks and support data collection:** Ultimately, space economy evaluations should provide the evidence used to support policy objectives. A policy focus should provide clarity on what to measure, justify adequate resources devoted to data collection and ensure results inform decisions.
- **Make better use of official statistics:** Although space activities tend not to be readily visible in official statistics, official data from structural business and other national surveys can contain useful information when supplemented with more granular data from space industry surveys, annual reports, and, when available, grants and contract data.
- **Rely upon internationally recognised definitions and practices when conducting surveys:** The government organisations and industry associations conducting industry surveys outlined in this *Handbook* can improve the coherence of their results through the adoption of internationally agreed definitions and methodologies. Using standards can also reduce the resource burden of conducting surveys in smaller organisations.
- **Collaborate with knowledgeable organisations:** Partnerships between space agencies, national statistical offices and industry associations can facilitate methodological support, add credibility to results and, in some cases, help to secure extra funding. Collaboration may also result in greater outreach and wider visibility of the evidence produced.
- **Document evaluation methodologies and make them publicly available:** Ensuring that methodological choices are clearly documented and available as widely as possible should enable reproducibility and improve confidence in the results. In general, transparency can facilitate improvements in evaluation design and encourage stakeholder engagement in evidence building.
- **Strengthen international co-operation and co-ordination:** The OECD Space Forum will continue working with governments, national statistical offices, industry, academia and the broader space community to improve space economy measurement and provide the evidence required to make effective decisions on the space economy.