

26. Guide to the profiles

Using a common framework to present information, country profiles provide facts and indicators for a selected number of countries with space programmes (i.e. members of the OECD Space Forum and selected emerging economies). Country profiles provide general information on the state of the country's space sector, supported by indicators: a brief review of the institutional framework for space activities; a section on industry; and a section on the national aerospace sector.

The section on **institutional framework** provides an indication of the entity in charge of space affairs in the country, as well as the institutional budget for space programmes with a review of trends in investments. There are often differences between budget estimates and actual spending for a given year. Budget estimates have been used, in order to improve timeliness and ensure coherency across countries. Where there are particularly large discrepancies between estimates and actual spending, actual spending is used, with a dedicated note. Budget trends are also provided in both constant national currencies and in constant US dollars when applicable, to give an indication of the currencies' fluctuations, as many space contracts are often affected by the exchange rates. For calculations, this report makes use of the consumer price index (all items) as a deflator, from the *OECD Main Economic Indicators (MEI)* (database).

The section on **space industry and employment** provides an overview of the national space industry: where available, the number and main geographic location of enterprises, employment levels in space manufacturing between 2007 and 2012, and the total turnover in national currency and USD in 2013 (or latest year) are provided. Data for the section come from a combination of national space agencies, Eurospace and national industry associations. The Eurospace data only include space manufacturing jobs in industry, as defined by the association in its annual survey, thus providing useful comparability between European countries, but excluding de facto a number of space-related activities and jobs (i.e. total space-related employment is

actually higher in some countries, where public agencies, universities and space services providers have significant roles in space activities).

The section on **aerospace** provides an overview of the national aerospace industry, including data for the space industry. Current international statistical classifications bundle aeronautics and space manufacturing. Where available, the information includes number and main geographic location of enterprises, latest available employment levels, total turnover in national currency and USD in 2013 or latest year, and bilateral trade data for 2012. Data from the *OECD Bilateral Trade Database by Industry and End-use category (BTDLxE)* were used to compile the aerospace trade data. The BTDLxE is derived from the OECD's International Trade by Commodities Statistics (ITCS2) and the UNSD's Comtrade, where annual values and quantities of imports and exports are compiled by partner countries and according to industrial product classifications (ISIC rev. 3 and ISIC rev. 4). The trade data include intermediate trade. The country under review is the "reporting country", and the different "partner countries" are ranked by export markets. Users should bear in mind that in BTDLxE, mirror flows often do not match between two countries, i.e. the export values from country A to country B (reported by country A) may not agree exactly with the import values to country B from country A (reported by country B). The discrepancies are usually relatively small for most countries, although some particular reporting-partner pairs may show slightly more divergence.

Several of the indicators below can be found in different chapters of the publication with more comparable country data.

The country's institutional space budget (in current USD) is first presented as a share of Gross Domestic Product (GDP) in 2013, based on OECD data and calculations (OECD, 2014a). Indicators with more comparable countries' budgetary data can be found in Chapter 1 and 3.

The per capita budget in 2013 is also provided for each country. It provides an estimated amount in USD purchase power parities (PPP) per inhabitant. The use of PPP was chosen to provide comparability across different economies. The demographic data and PPP estimates come from OECD databases (See Table 1.1).

The number of regional clusters of space activities is also provided. Governments increasingly focus on regional clusters of innovation, as industrial structure, research capabilities and other territorial characteristics affect the capacity of actors to generate and absorb knowledge.

The share of space-related patent applications filed under the Patent Co-operation Treaty (PCT) is indicated. The data are based on priority date and applicant's location, using fractional counts, for the period 2009-11 (see Chapter 15).

Share of scientific production in satellite technologies in 2013: this is a bibliometrics indicator, giving the country's share in total scientific publications (i.e. papers at space-related conferences and in scientific journals) (see Chapter 16).

The number of subscribers of Direct-to-home (DTH) satellite services (i.e. services using a satellite dish capable of receiving satellite television broadcasts). The penetration of digital television by country, as a share of television households is also provided, except for India. The 2011 data are based on ITU data, except for India (data are coming from the Telecom Regulatory Authority of India) (see Chapter 8).

The number of satellites in orbit: this is an estimate of the known number of satellites, as recorded by the Union of Concerned Scientists, as of January 31st, 2014, including

governmental and commercial satellites, as well as dual-use satellites. Satellites owned by universities have been excluded.

Students' performance in science: Over the past decade, the OECD Programme for International Student Assessment, PISA, has become a key instrument for evaluating the quality, equity and efficiency of school systems. It tracks the evolution of student performance over time and across subjects. As space programmes use highly-qualified human resources, a focus on students' performance in science is provided here. The relative standing of countries is analysed through countries' mean performance, both relative to each other and to the OECD mean (OECD, 2014b). For PISA 2012, the mean in science for OECD countries increased to 501 points. This establishes the benchmark against which each country's and economy's science performance in PISA 2012 is compared (see summary Table 5.1).

Sources

OECD (2014a), Main Economic Indicators (MEI) Database, www.oecd.org/std/mei.

OECD (2014b), International Trade by Commodity database (ITCS), www.oecd.org/std/its/itsinternationaltradebycommoditystatistics.htm.

OECD (2014c), STAN Bilateral Trade Database by Industry and End-use (BTDIxE), www.oecd.org/sti/btd.

OECD (2014d), PISA 2012 Results: What Students Know and Can Do – Student Performance in Mathematics, Reading and Science (Volume I, Revised edition, February 2014), PISA, OECD Publishing. [dx.doi.org/10.1787/9789264201118-en](https://doi.org/10.1787/9789264201118-en).



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