



MEASURING WOMEN'S PARTICIPATION IN THE SPACE SECTOR: AN OECD PERSPECTIVE

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SPACE4WOMEN EXPERT MEETING
16-19 AUGUST, DAEJEON



Presentation overview

- About the OECD Space Forum
- Selected space statistics on female share of
 - Employment
 - Specific occupations
 - University graduates in relevant and space-related fields
- Measurement challenges

About the OECD Space Forum

Mission: investigate the space sector's economic dimensions and innovation role for the wider economy

International hub for experts / economists: space agencies, international institutions, academia, private sector and industry associations

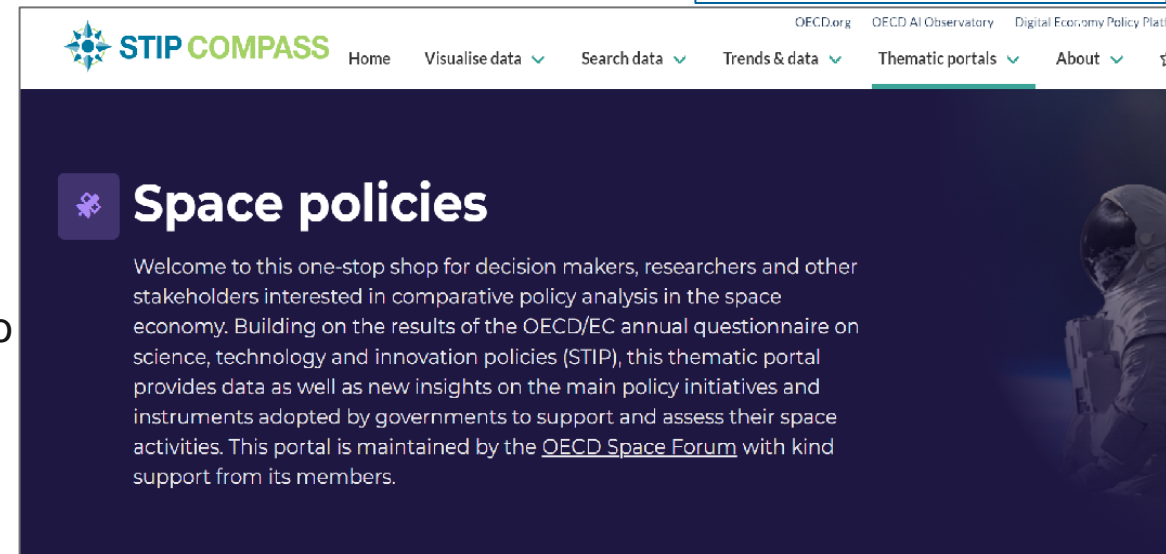
Steering Group Members: agencies and ministries from OECD countries CAN, CHE, DEU, FRA, ITA, KOR, NDL, NOR, UK, US + ESA

Two major publications this summer:

- ✓ The OECD Handbook on Measuring the Space Economy, 2nd edition **PUBLISHED in JULY!**
- ✓ Earth's Orbits at Risk: The Economics of Space Sustainability

Large international project on the economics of space sustainability about to be launched! Still time to join.

- ✓ Involving universities and research centres from around the world to spur economic research (*what would be the impacts of space debris accidents for the global economy?*) (2022-23)





Women and Space: Key messages

Employment

- Female participation depends on the space industry segment, but is in general quite low.
- Women also tend to be under-represented in scientific /managerial positions.

University graduates

- A minority of women graduate from relevant STEM and space-related fields, with particularly low participation in some countries.
- Positive trend since 1990s in some countries, but significant variation in participation across fields.

Measurement

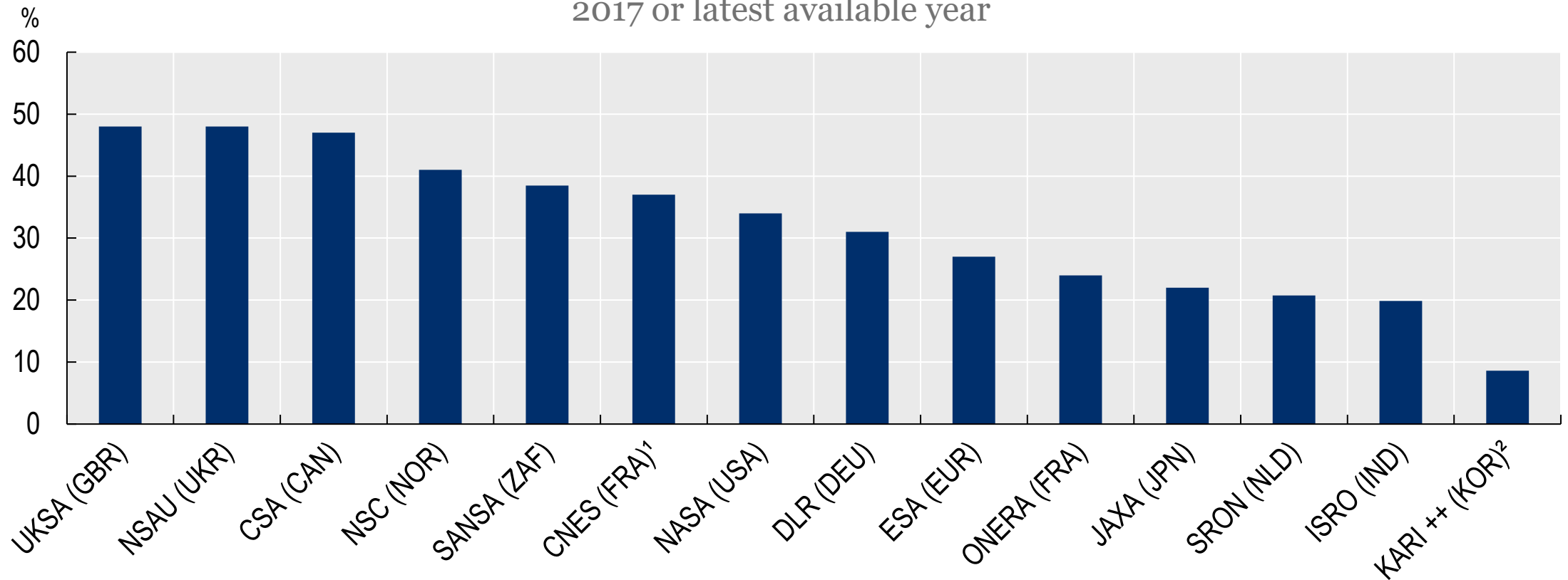
- Very limited availability of granular data, both for employment and university enrolment/graduation.
- Countries encouraged to collect more data, following international standards and guidelines (see for instance Chapter 3 in *OECD Handbook on Measuring the Space Economy, 2nd Edition*).



Female employment in the public sector

Share of female employment in selected space agencies and research organisations

2017 or latest available year



Notes: 1. Data refer to 2014 for CNES. 2. Also includes other govt. agencies.

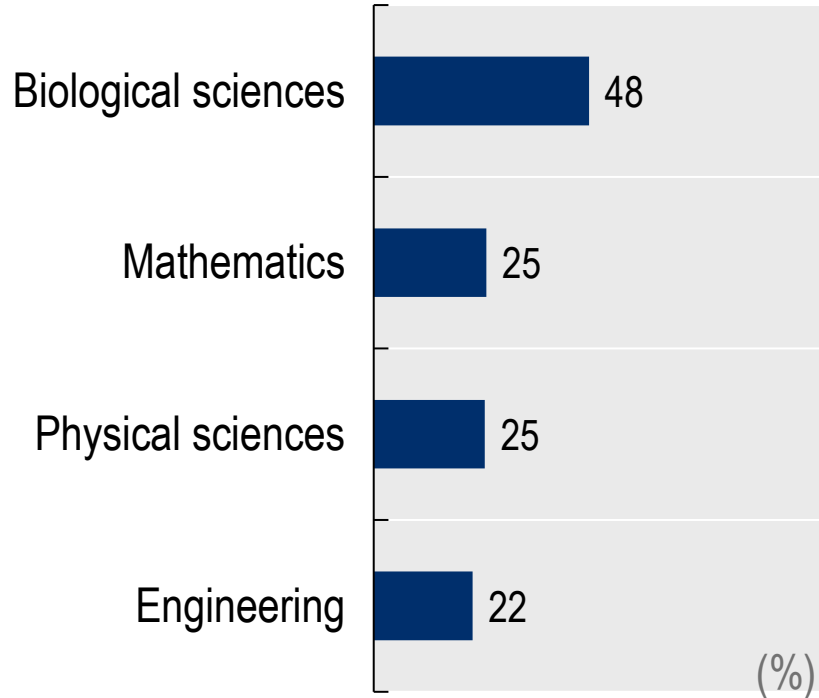
Source: OECD (2019), "Remedying the gender gap in a dynamic space sector", in *The Space Economy in Figures: How Space Contributes to the Global Economy*, <https://doi.org/10.1787/9405a5a2-en>.



Female share of “scientific” or “executive” occupations in government agencies

At NASA

Selected occupations, January 2018



At other selected space organisations

2017 or latest available year

	CSA, CAN (2017)	SANSA, ZAF (2017)	CNES, FRA (2014)	NASA, USA (2017)	DLR, DEU (2017)	ESA (2016)	JAXA, JPN (2015)	ISRO, IND (2017)
Share of total staff	47%	39%	37%	34%	32%	26%	22%	20%
Share of “non-administrative and/or non-clerical staff” ¹	23%	37%	26%	23%	20%	21%	12%	16%

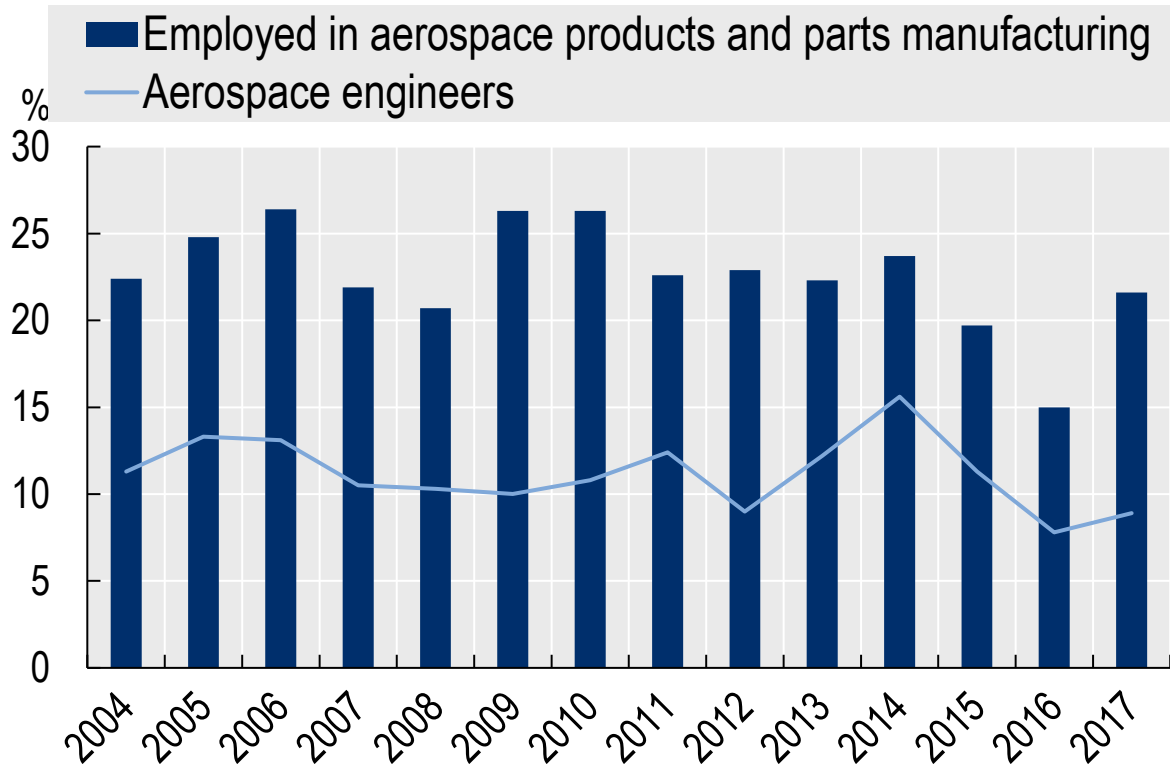
Note: “non-administrative” and “non-clerical” occupation categories are not directly comparable and include for instance “science and engineering” (NASA), “scientific staff” (DLR) and “executive staff” (ESA).

Source: OECD (2019), “Remedying the gender gap in a dynamic space sector”, in *The Space Economy in Figures: How Space Contributes to the Global Economy*, <https://doi.org/10.1787/9405a5a2-en>.



Female employment in the private sector

US aerospace manufacturing



And in other countries

Space manufacturing (2016):

- Europe: 21%
- Korea: 5%

Downstream activities (2016):

- Europe, EO (33%)
- Korea, EO (20%), telecom (16%)-

Notes: 1. Data refer to 2014 for CNES. 2. Also includes other govt. agencies.

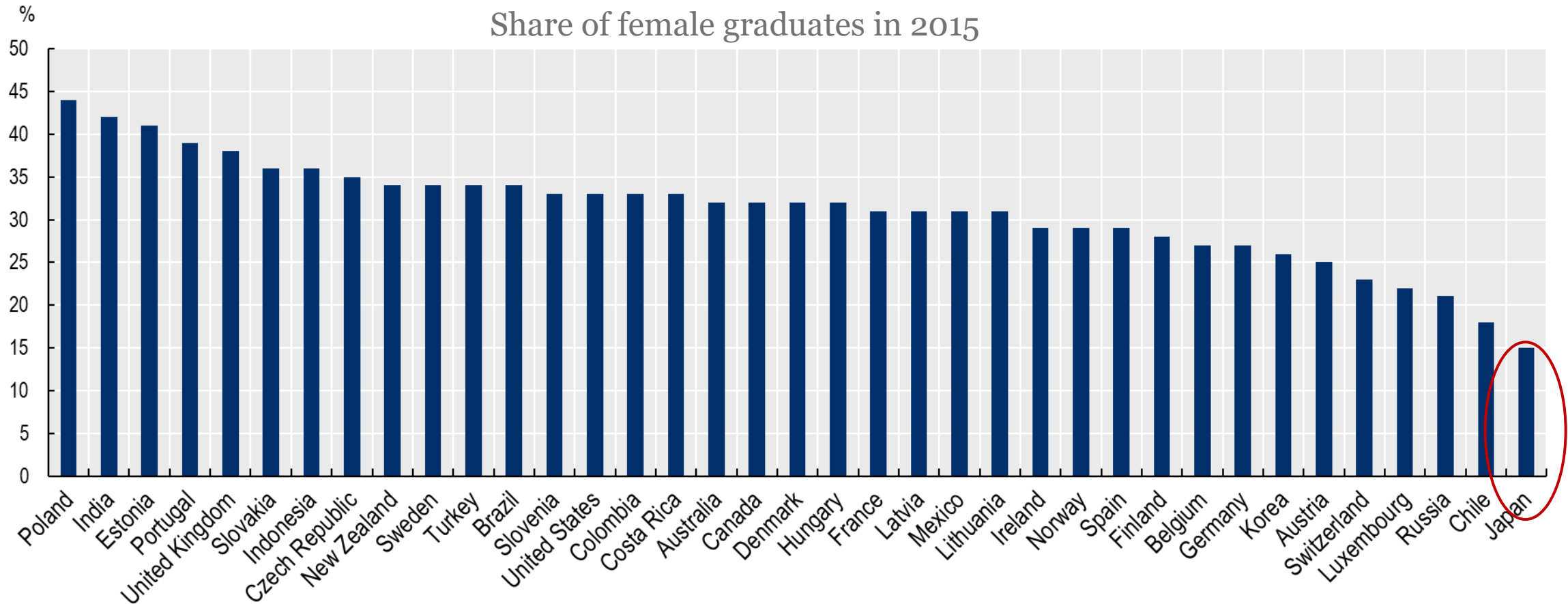
Source: Industry associations data in OECD (2019), "Remedying the gender gap in a dynamic space sector", in *The Space Economy in*

Figures: How Space Contributes to the Global Economy, <https://doi.org/10.1787/9405a5a2-en>.



Female STEM graduates in OECD area and selected economies

Considerable national variations
Share of female graduates in 2015



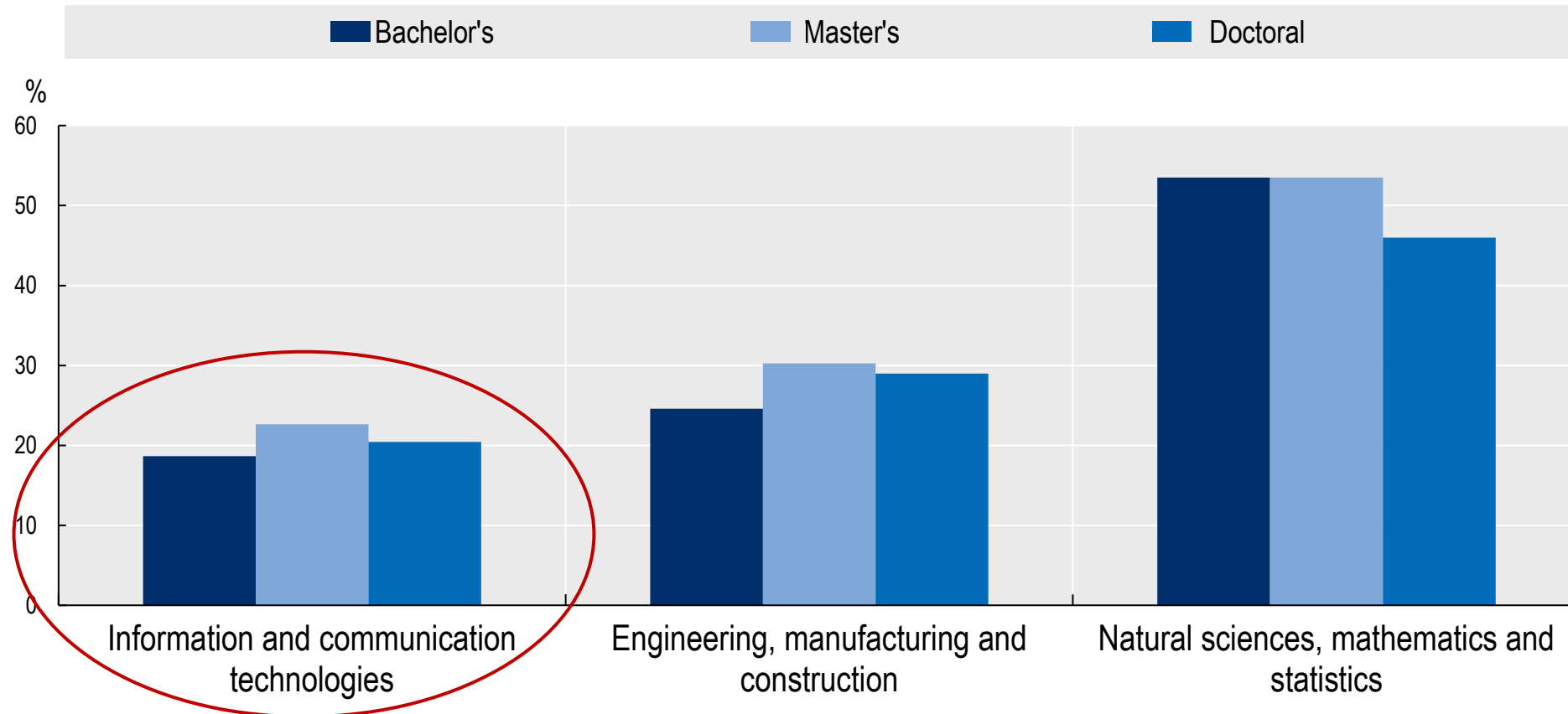
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Female graduates in selected STEM fields

Considerable variations across STEM fields

Share of female graduates in 2015, OECD area and selected economies

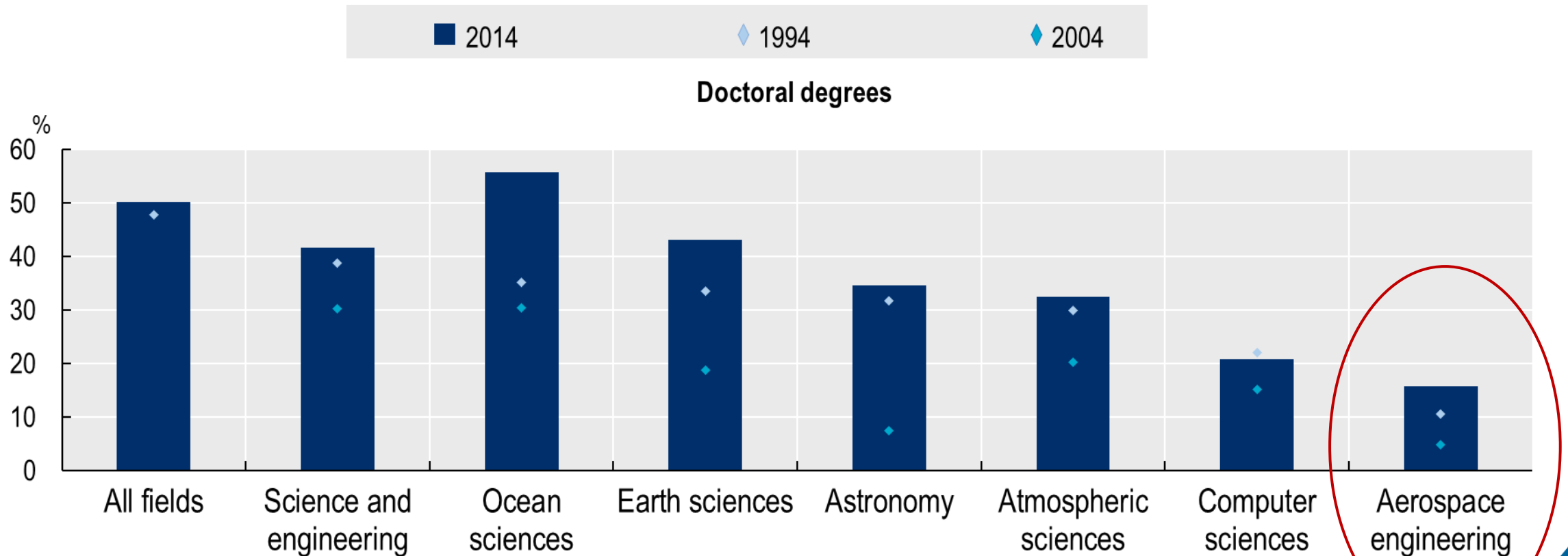


Source: OECD (2019), "Remedying the gender gap in a dynamic space sector", in *The Space Economy in Figures: How Space Contributes to the Global Economy*, <https://doi.org/10.1787/9405a5a2-en>.



Female graduates in space-related fields

Positive trend, but low participation in some fields
Share of female PhD graduates **in the United States**, selected fields



Source: OECD (2019), "Remedying the gender gap in a dynamic space sector", in *The Space Economy in Figures: How Space Contributes to the Global Economy*, <https://doi.org/10.1787/9405a5a2-en>.



Measurement challenges

Data availability (surveys are key)

Data comparability

- Research fields
- Occupations
- Industry segments

