



ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT



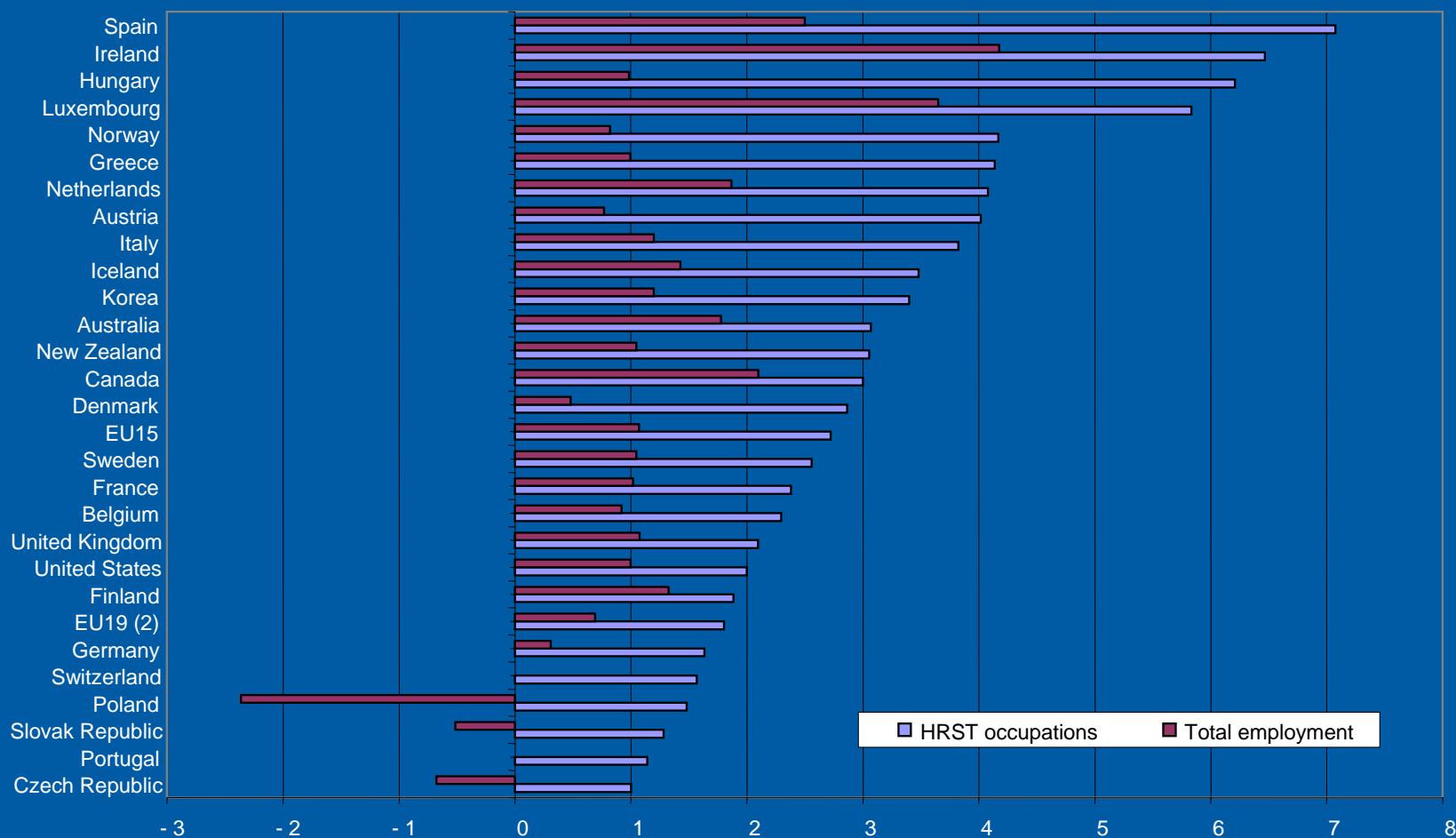
Demand, supply, and international
mobility of human resources in
Science & Technology

Frédéric Sgard
OECD Global Science Forum



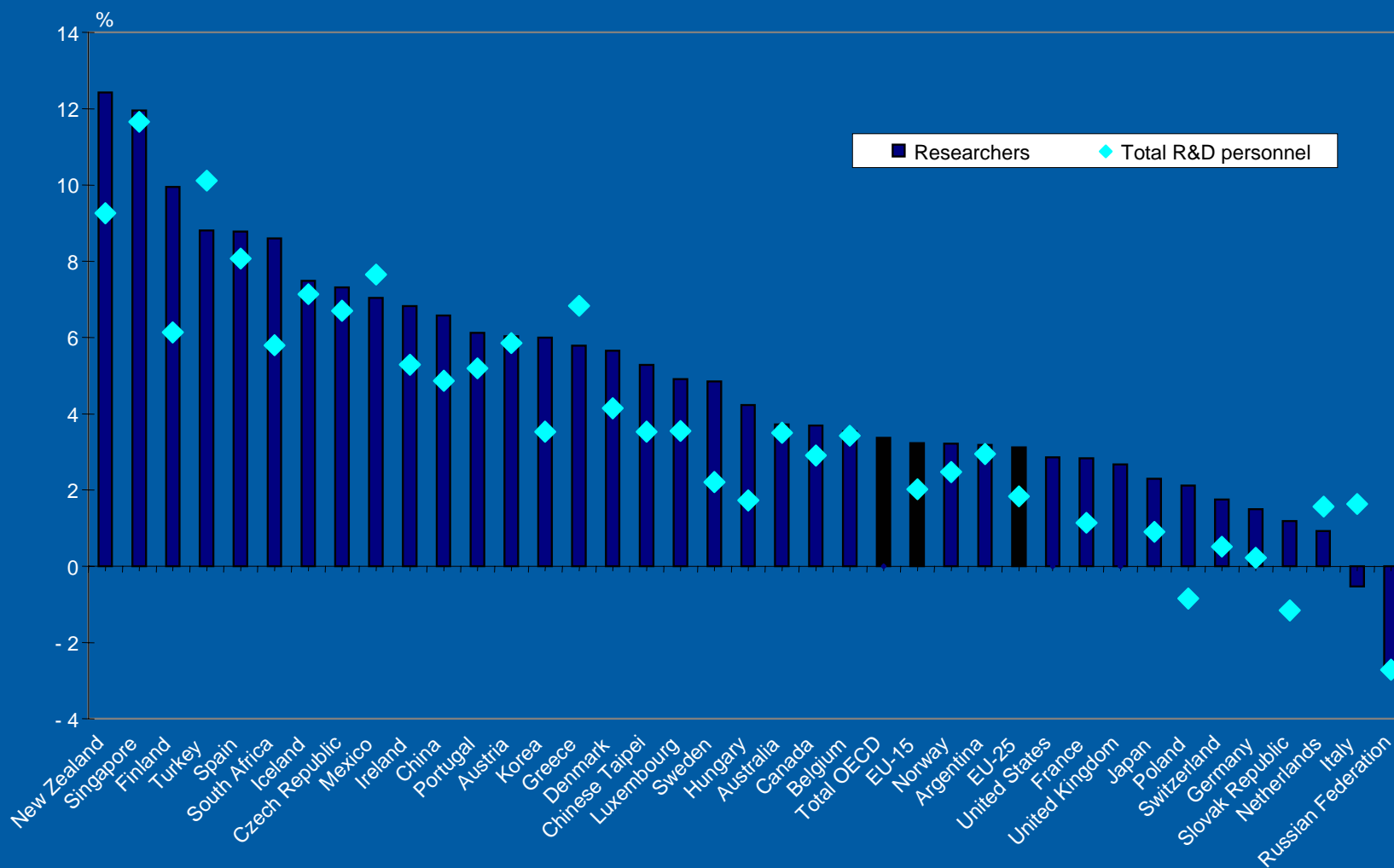
The demand for Human Resources in S&T is growing faster than employment

Average annual growth rate HRST occupations and total employment, %, 1995-2004



Strong growth in R&D personnel in most countries

Average annual growth rate, %, 1995-2005,



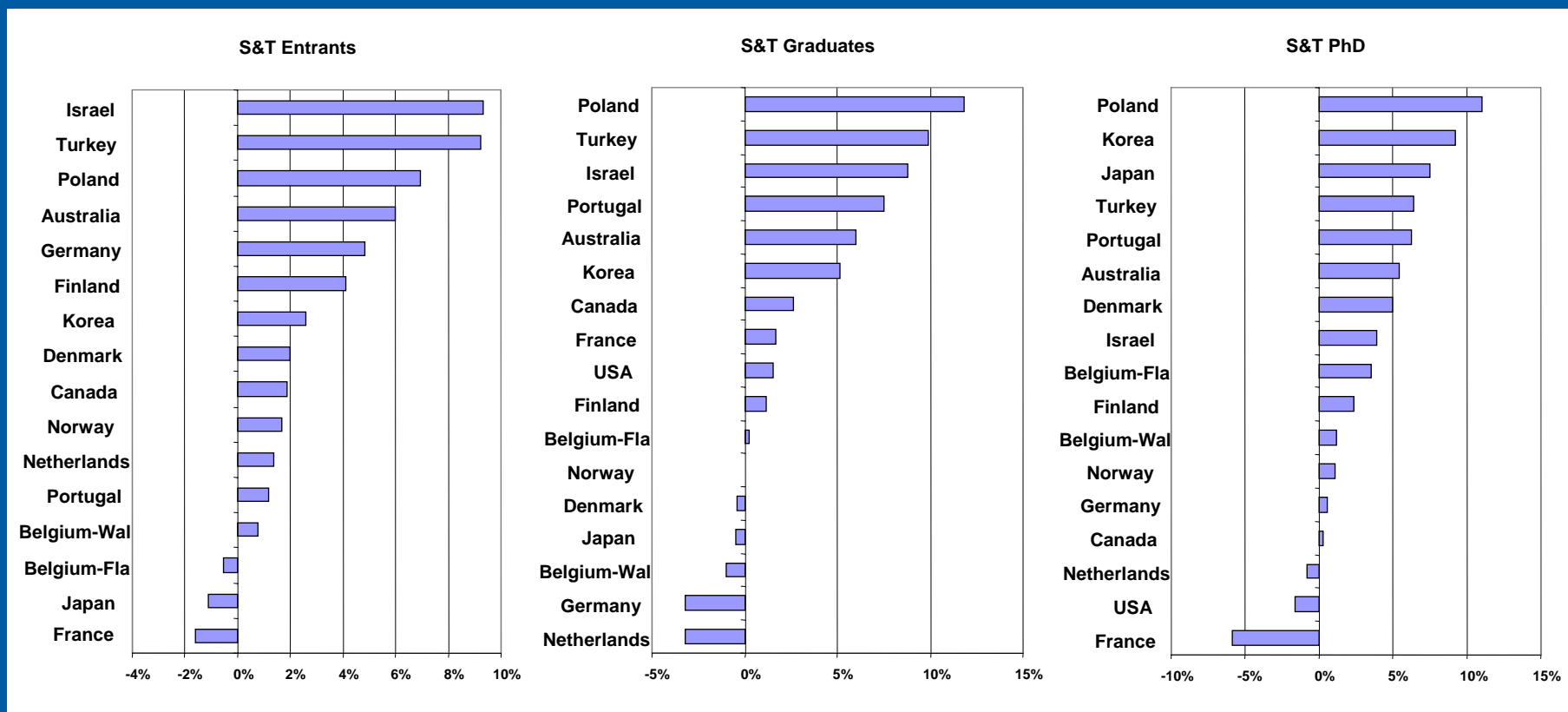
Demand for Human Resources in S&T is expected to increase further

National targets for R&D spending

Country	Target	Date	Most recent
China	2.5% GDP	2020	1.23% (2004)
Denmark	3% GDP	2010	2.5 % (2004)
Germany	3.0% GDP	2010	2.5% GDP (2004)
Ireland	2.5% GNP	2010	1.2% GDP (2004)
Korea	Double public investment	2007	2.9% GDP (2004)
Netherlands	3.0% GDP	2010	1.8% GDP (2004)
Poland	2.2% – 3.0% GDP	2010	0.6% GDP (2004)
Portugal	Double public investment in R&D to 1% of GDP and triple Business R&D	2010	0.8% GDP (2003)
Russia	2.0% GDP	2010	1.15 % GDP (2004)
Spain	2.00% GDP	2010	1.1% GDP (2004)
United Kingdom	2.5% GDP	2014	1.9% GDP (2003)

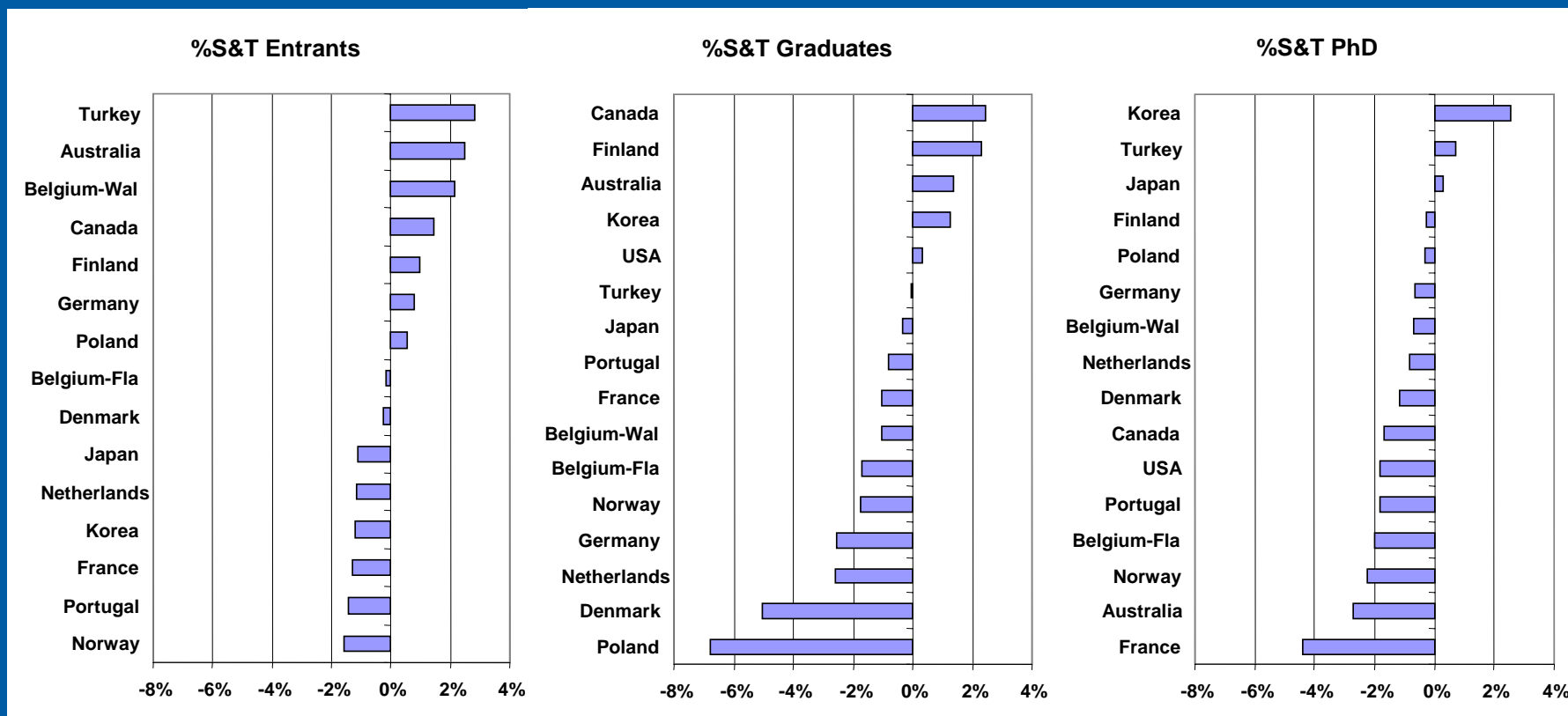
Source: OECD, Country responses to STI policy questionnaire, 2006; Main Science and Technology Indicators 2006/I

The number of S&T students has generally increased



Number of S&T students 1993-2003; average annual change

But the share of S&T students is often decreasing

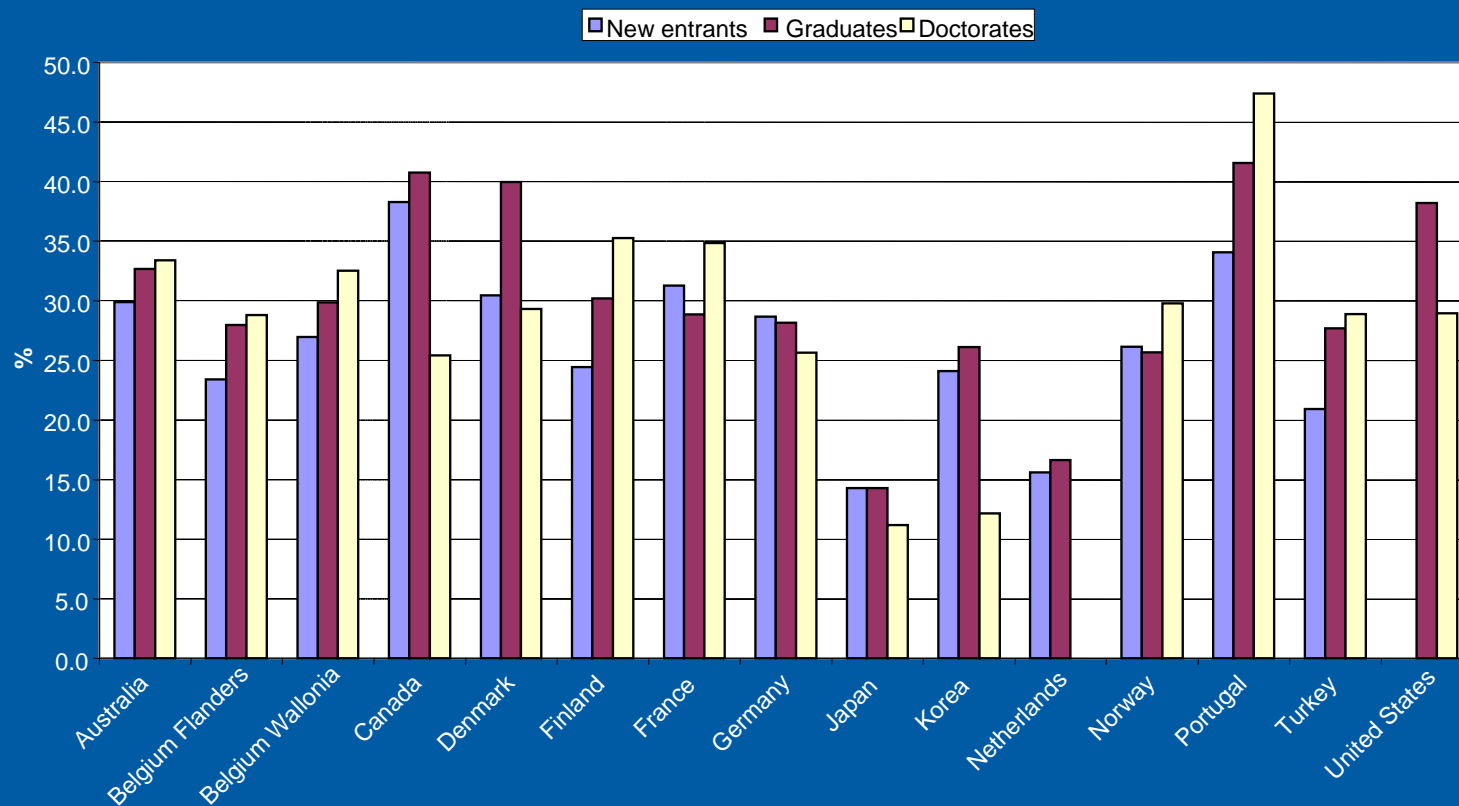


Percentage of S&T students 1993-2003; average annual change



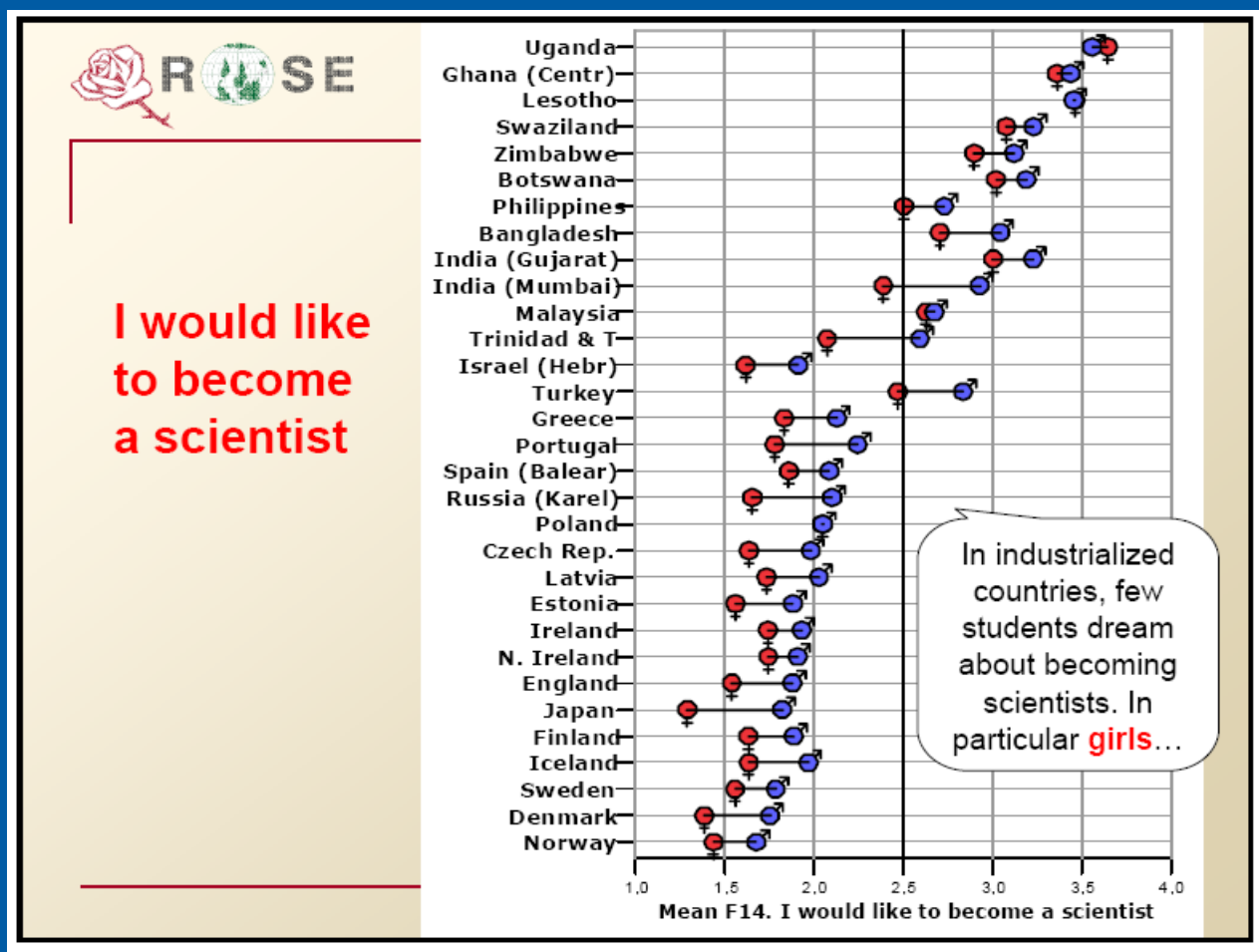
The share of women in S&T studies has not caught up yet that of men

Percentage of women in S&T disciplines (2003)



If S&T is still perceived positively by students, S&T careers are not for them !

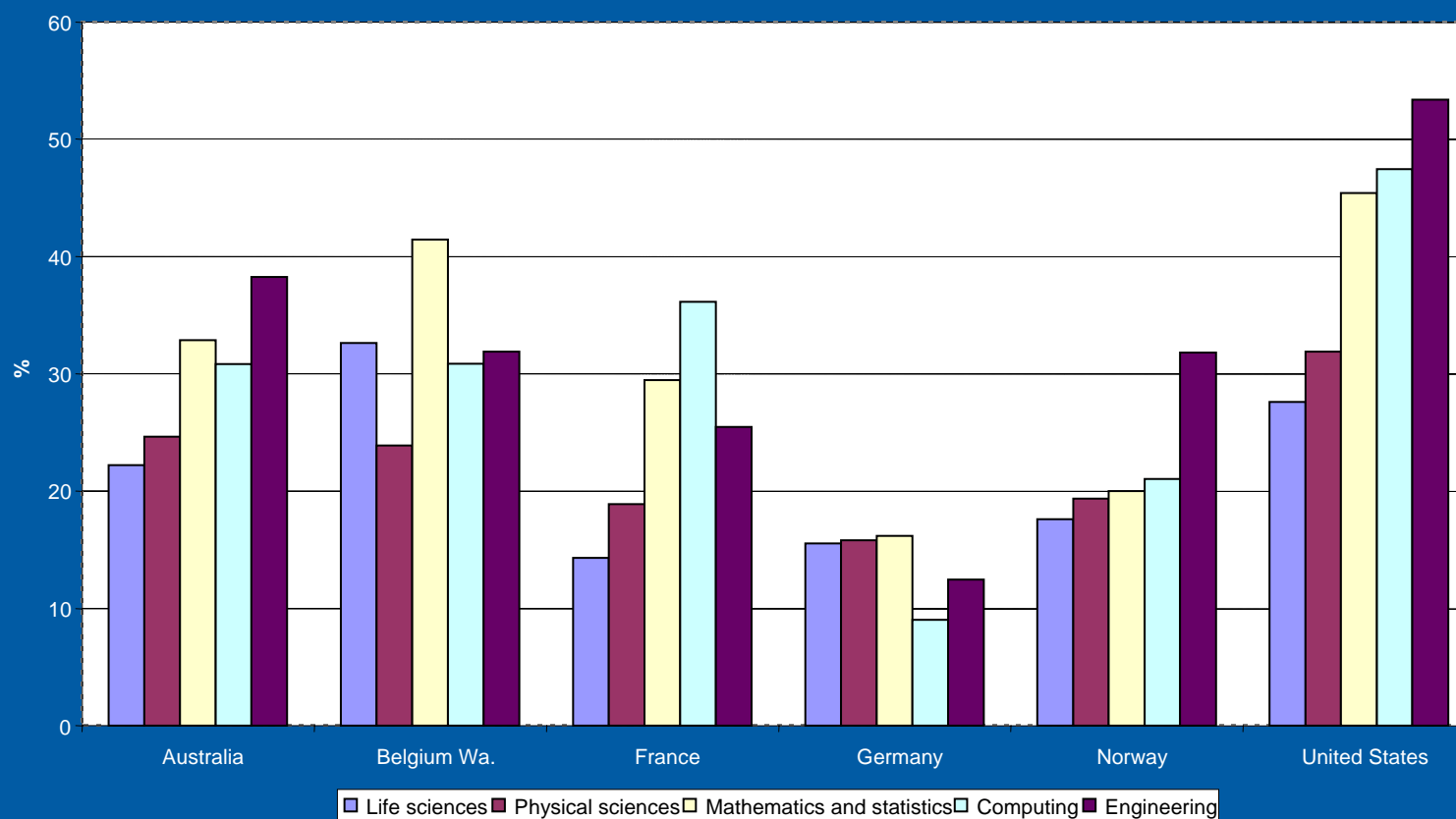
15 year-old students opinion – ROSE study



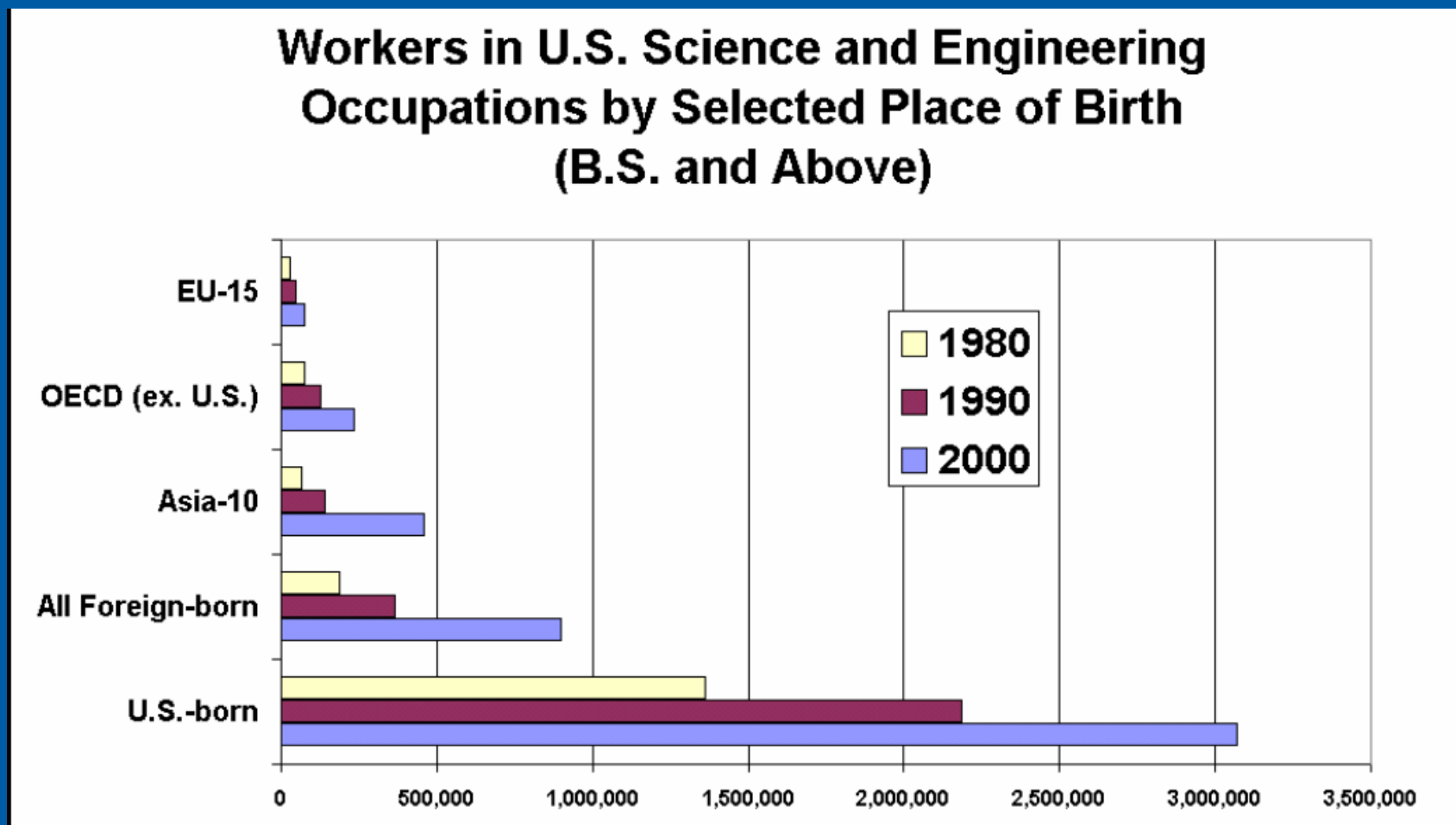
Source: Svein Sjöberg, ROSE study

S&T students and professionals are increasingly mobile

Percentage of new foreign doctorates by S&T discipline



S&T students and professionals are increasingly mobile



Source: National Science Foundation



But they are also increasingly returning to their home country when possible

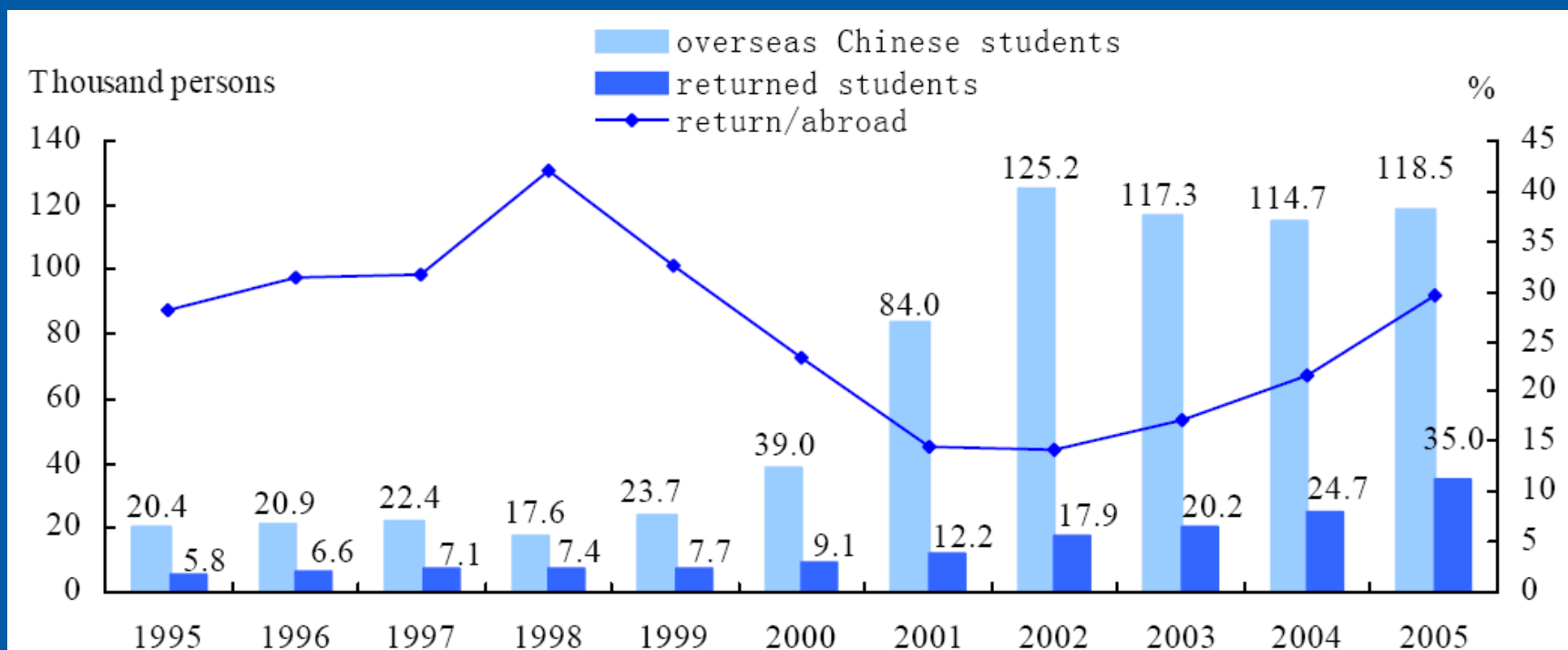


Fig 1-8 Overseas Chinese Students and Returned Students (1994-2005)

Source: Mu Rongping, Chinese Academy of Sciences

A few thoughts for discussion

- The demand for S&T-skilled personnel, although on the rise, is difficult to project in detail. Further scenario-based analyses should be undertaken.
- If current trends continue, some mismatch between supply and demand may occur in specific disciplines (mathematics, physical sciences)



A few thoughts for discussion

- Student interest in S&T depends critically on early interest, attractive teaching and curricula, and career prospects.
- S&T students and highly-skilled personnel are increasingly mobile.
Net “brain drain” is low, but qualitative dimension is unknown.
The main determinants of mobility are access to top-level scientific infrastructures and career prospects.

For further information

- Evolution of student interest in S&T studies
(frederic.sgard@oecd.org)
- International mobility of researchers
(ester.basri@oecd.org)
- Careers of doctorate holders
(laudeline.auriol@oecd.org)