INSTITUT FÜR HÖHERE STUDIEN WIEN

14. May 2025, Promoting Erasmus+ Mobilities in STEM in Higher Education, OEAD

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Data & trends: Student mobility in STEM fields

Results from EUROSTUDENT 8

Background information

About the data

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- EUROSTUDENT collects every 3 years data on the social and economic conditions of student life in Europe, including (outgoing) credit mobility
- Around 300,000 students from 25 countries took part in ES 8 (2021-2024).
- The surveys took place either in spring 2022 or 2023. Only the Swiss data is from 2020, and the German data is from 2021 (and DE did not provide any data on mobility).
- In this presentation, engineering always excludes architecture and urban planning.

Key Message

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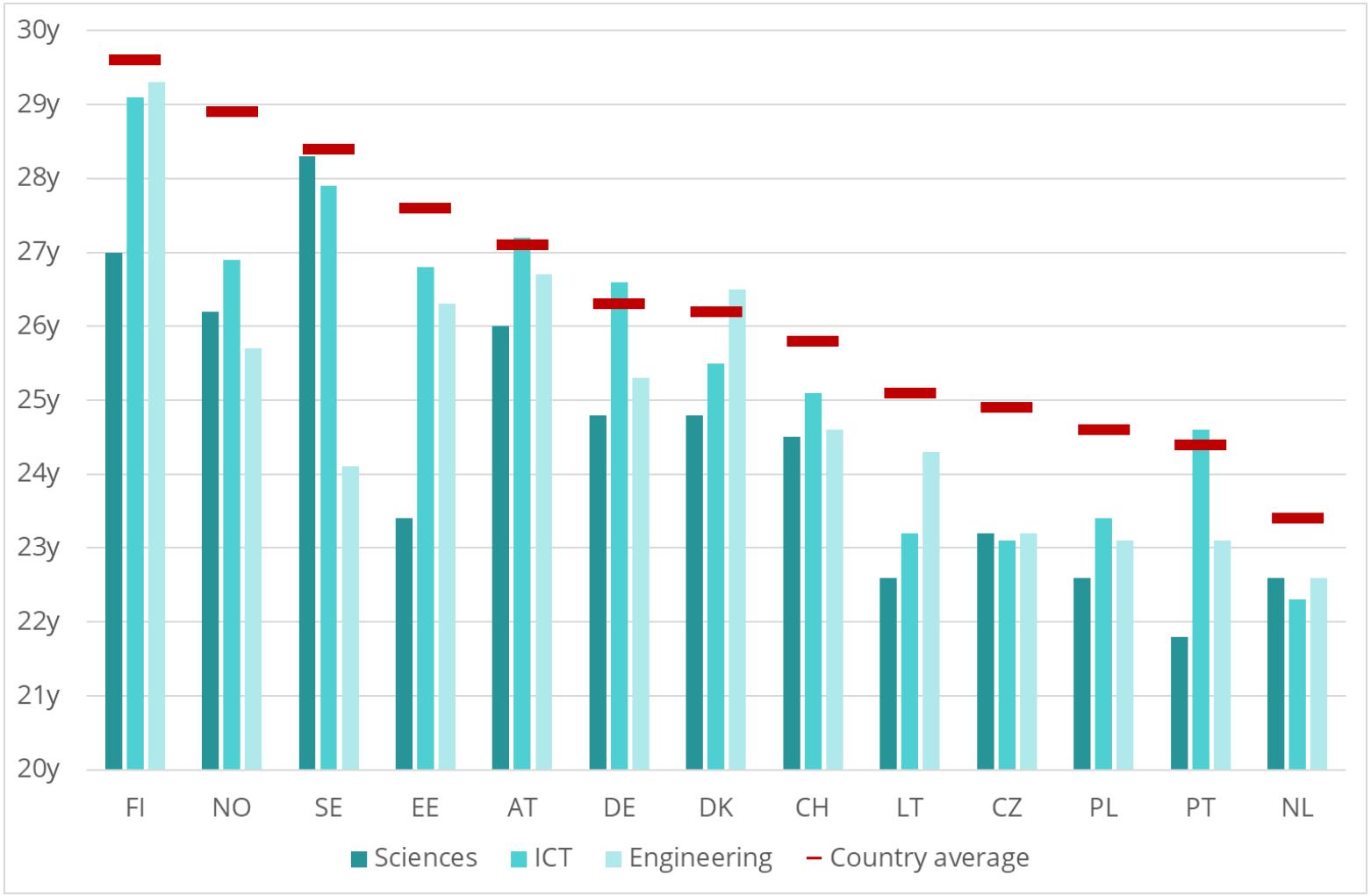
- Different people study different subjects and (if available) in different higher education sectors and in different organizational forms (e.g. part-time).
- The main differences are age, gender, first language, domestic vs. international students (and where they come from), and depending on the size of the country, regional differences
  But also: different educational pathways (type of school, delayed transfer, non-traditional access route, age at the start of studies).
- International mobility also depends heavily on the composition of the student population (in a field of study, in a country, at a particular university)
- Therefore: In whatever area measures are planned for students:
  Get to know your students first!

Students in STEM studies

12 selected countries (to match the participants of this event as far as possible)

Average age in STEM



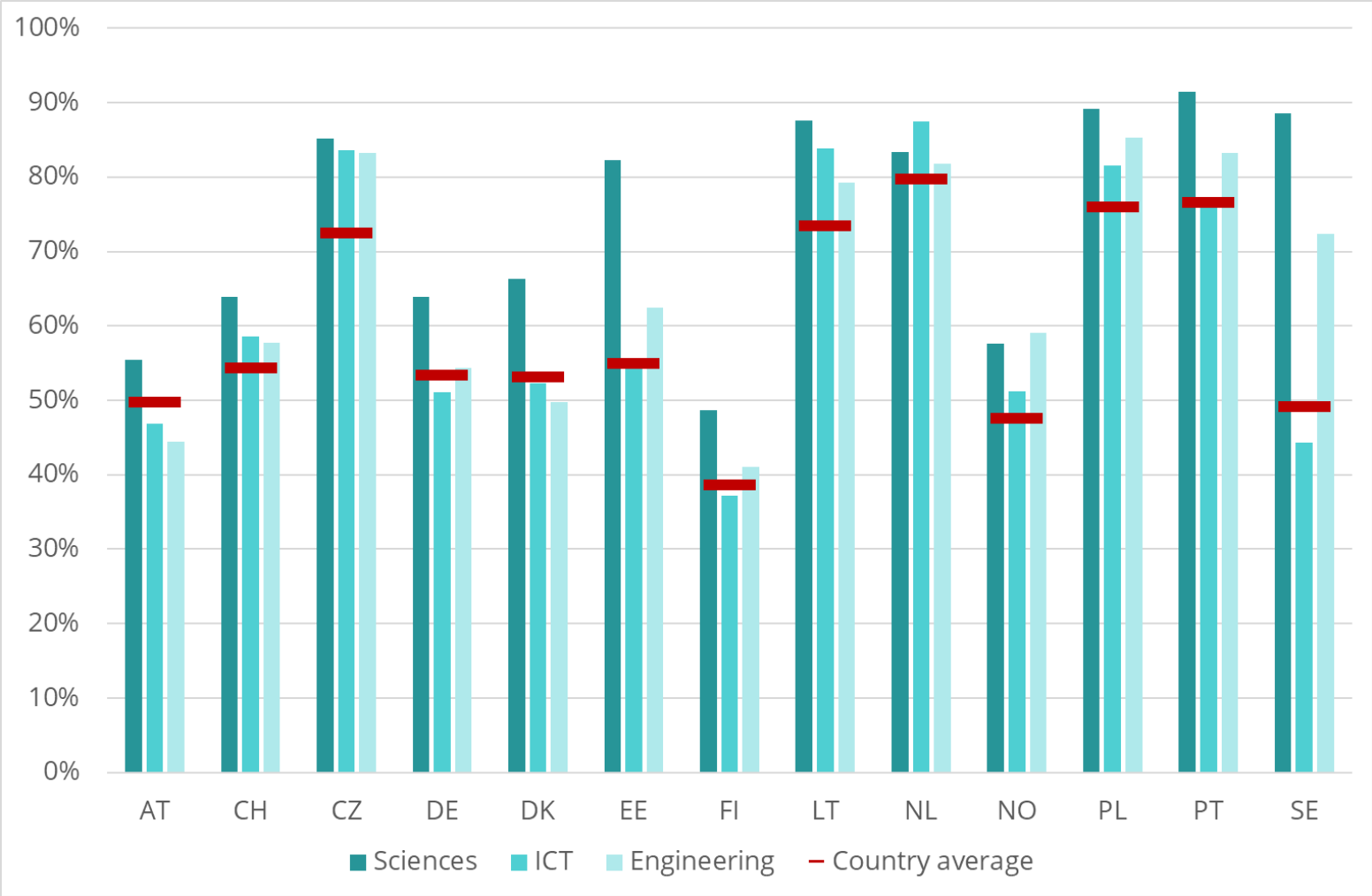
Sorted by the the average age of all students.
Source: EUROSTUDENT 8

Age is the central variable for the description of a student population. The older the students, the more come with delayed transition, study alongside work, study for further education or retraining, live in more expensive types of accommodation, have their own family, have to combine studies, job and children, and the less often they are internationally mobile.

Students in STEM studies are usually younger than the average for all studies - this is particularly true for the natural sciences.

But there are also very different patterns from country to country.

Share of students younger than 25 years in STEM

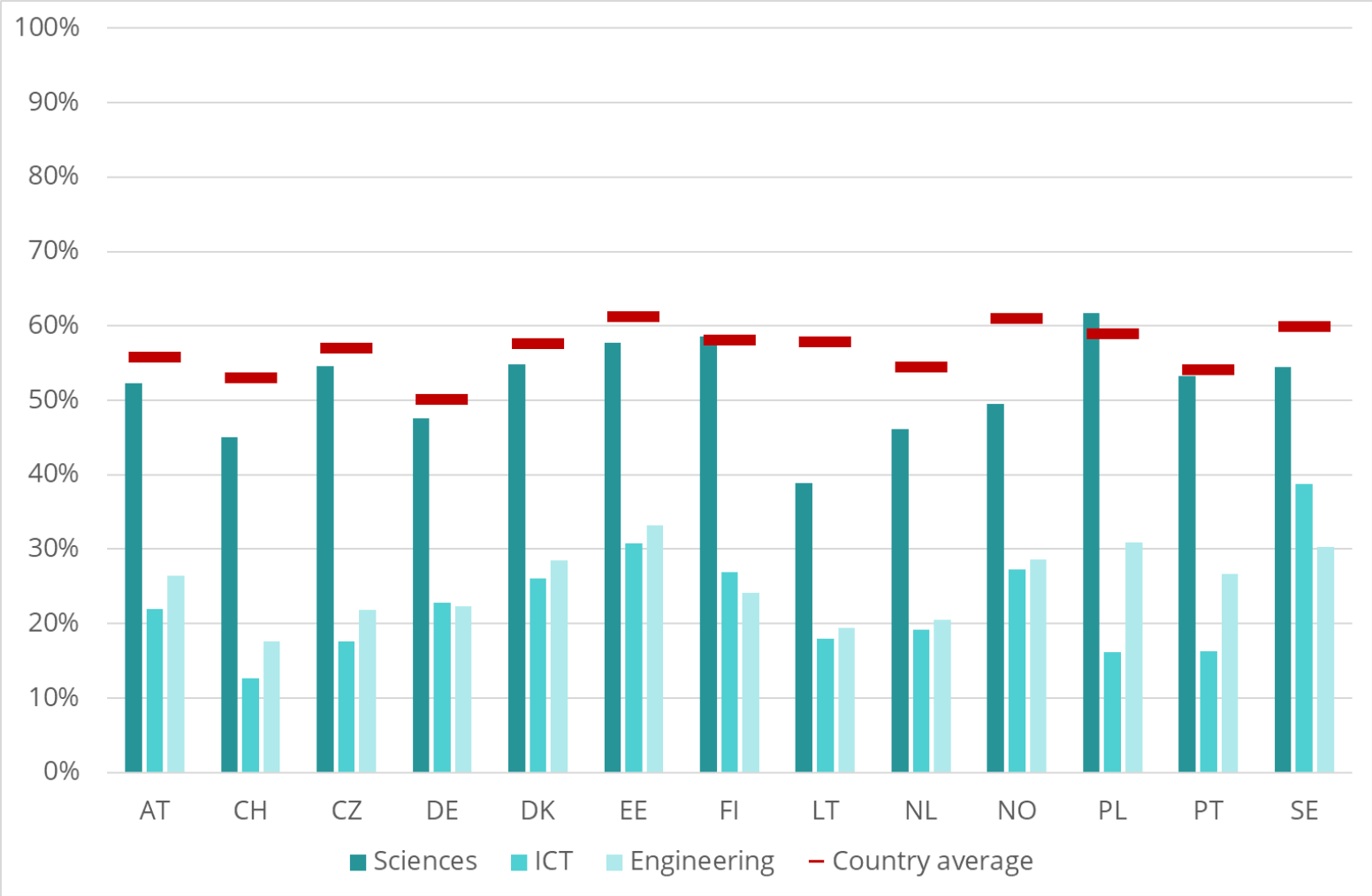


In some of the selected countries, around half of the students are younger than 25, in others it is up to 80%. This indicates different levels of mobility potential.

Here, too, it can be seen that the proportion of younger students is usually higher in the natural sciences. Overall, however, the proportion of younger students in STEM studies does not differ greatly from the national average.

Source: EUROSTUDENT 8

Share of female students in STEM

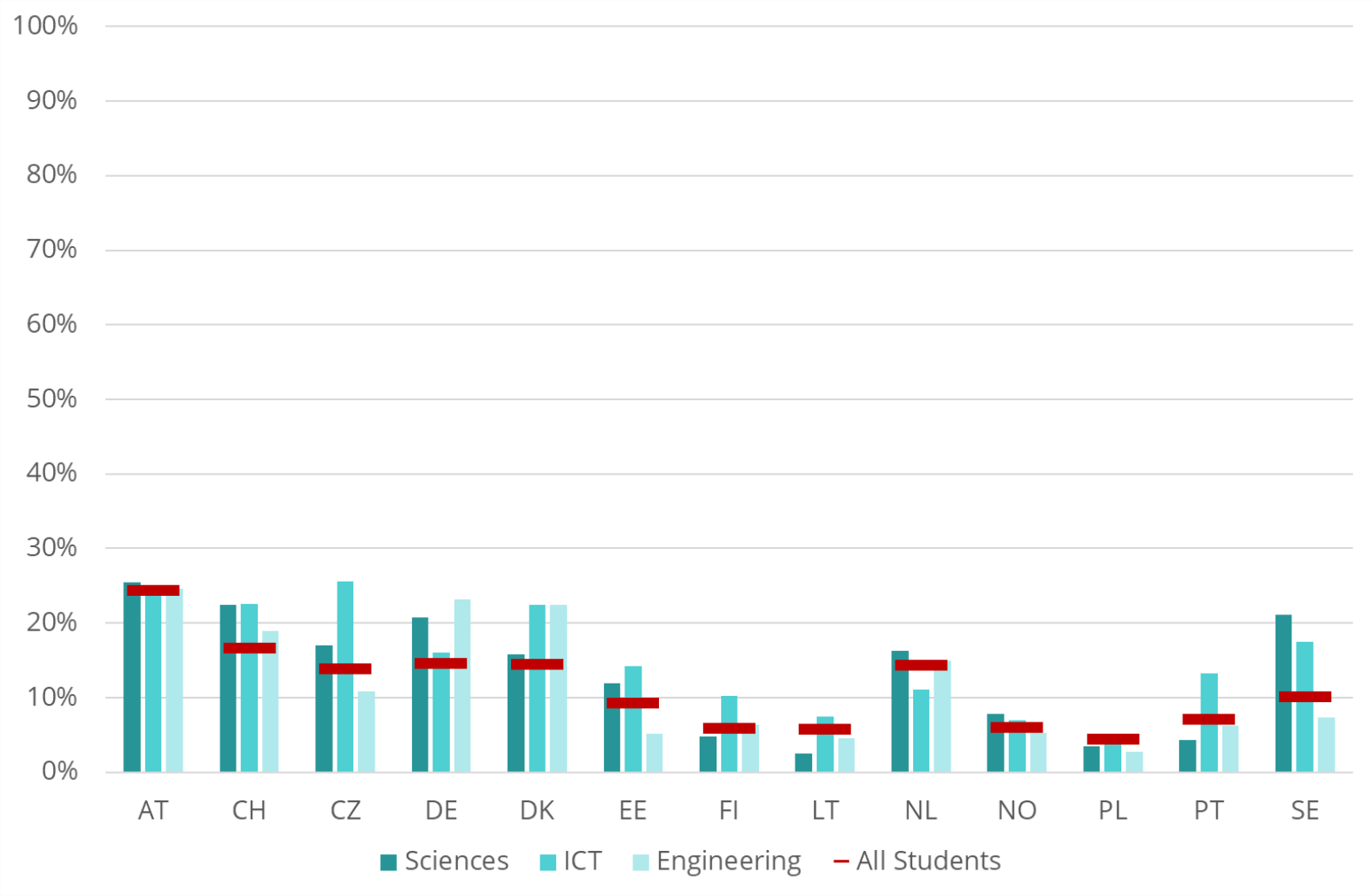


(Young) women are more mobile than men, although this is also largely due to the subjects they choose (e.g. foreign languages).

In all countries, the majority of students are female, but in STEM only the natural sciences come close to the average proportion of women. In ICT and engineering, the proportion of women is closer to 10-30%.

Source: EUROSTUDENT 8

Share of international students in STEM



The proportion of international students (i.e. incoming degree mobility) also has an influence on the mobility potential of students.

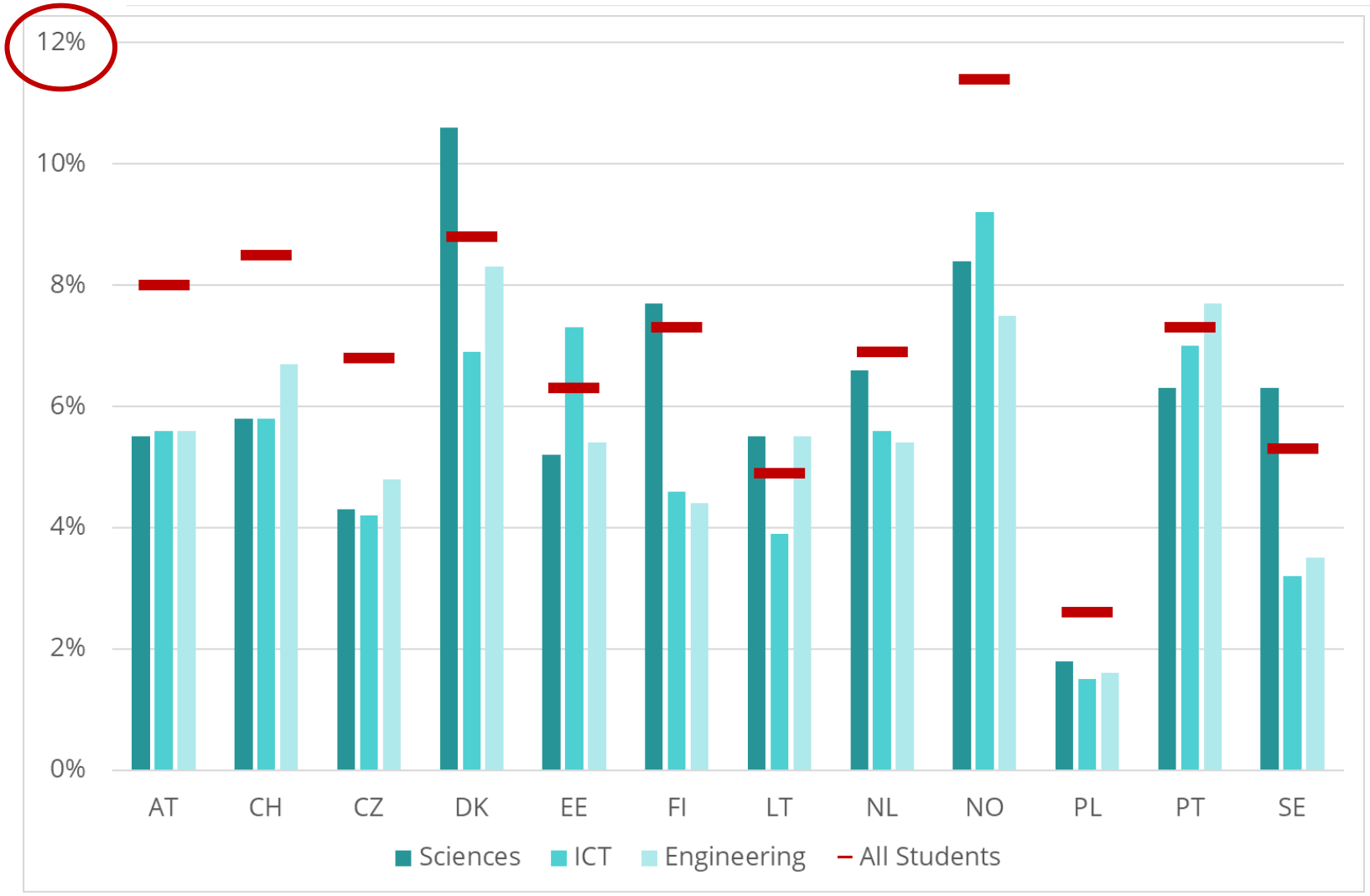
In our comparative countries, between 4% (PL) and 24% (AT) of students have an international background, and in some STEM studies the figure is even higher.

International: Last school attendance did not take place in the country of the survey.
Source: EUROSTUDENT 8

International Mobility

12 selected countries

Temporary enrollment abroad

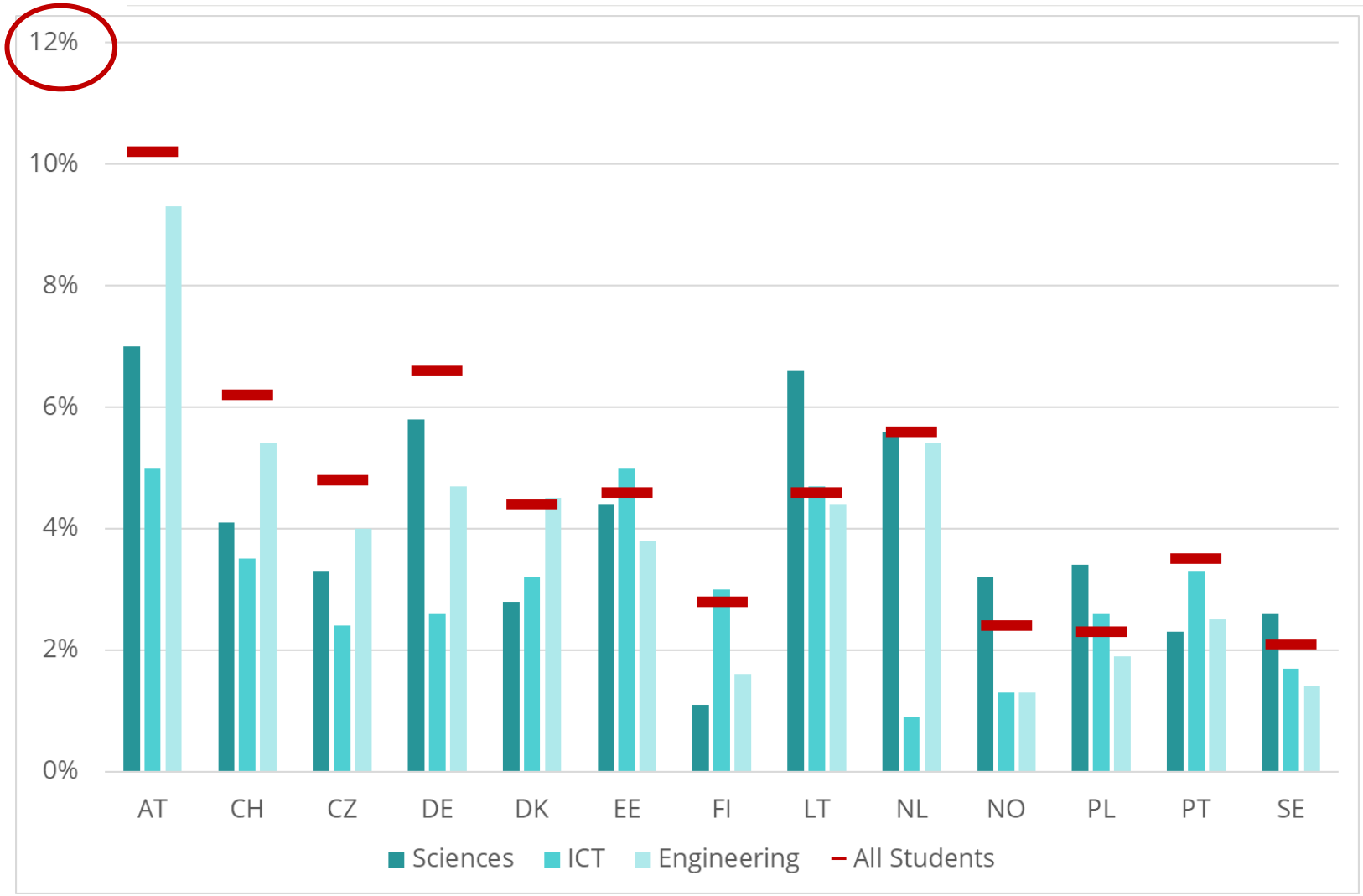


Note: This is NOT a (final) mobility rate, but the proportion of students who have been abroad so far in relation to all students from the 1st to the Xth semester. The rate will increase until all have completed their studies.

In most countries, enrollment abroad in STEM studies is (so far) below the average for all students.
Only in DK and FI is the rate in the natural sciences comparatively high.

Source: EUROSTUDENT 8

Internships abroad

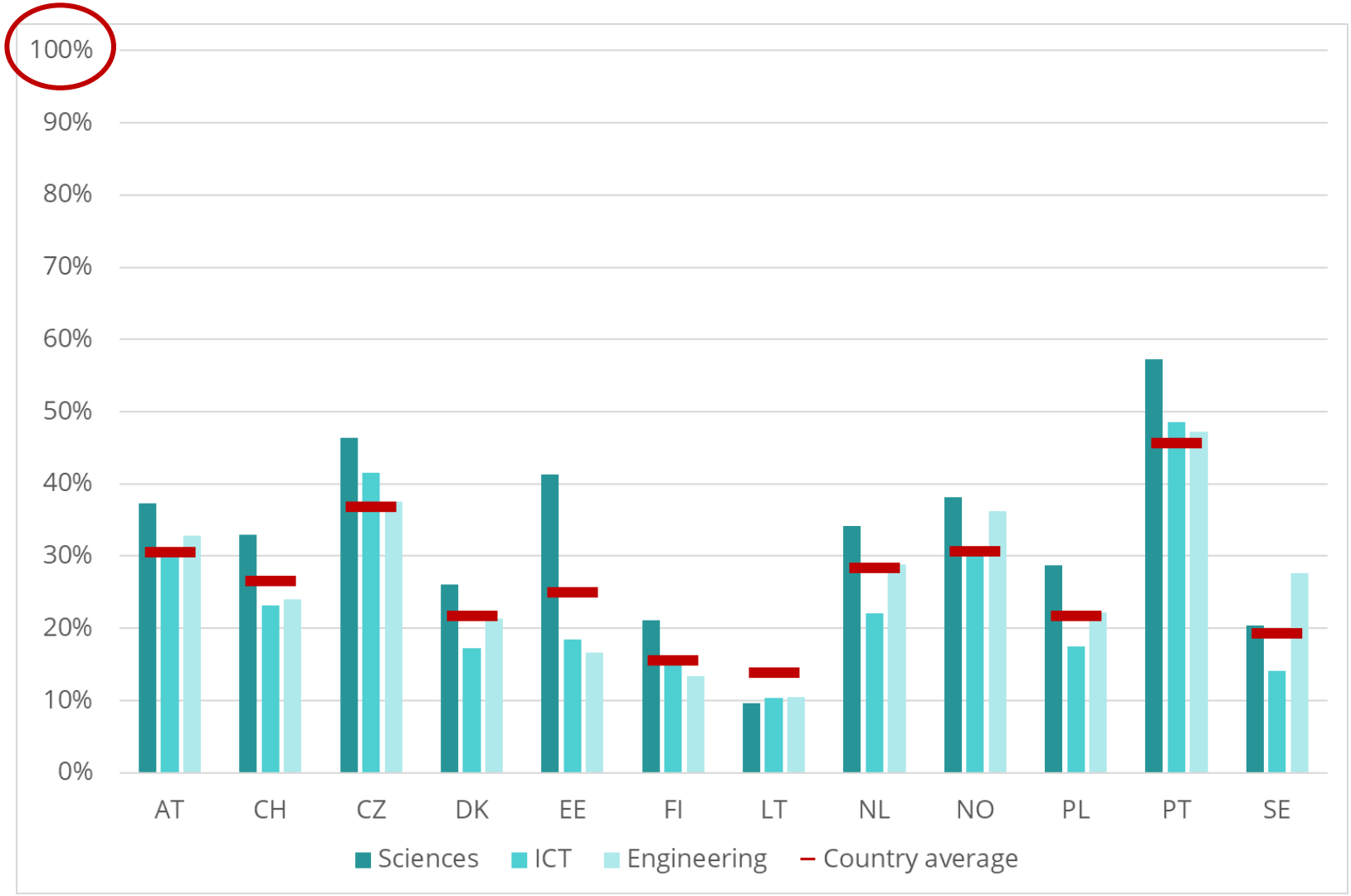


Note: This is NOT a (final) mobility rate, but the proportion of students who have been abroad so far in relation to all students from the 1st to the Xth semester. The rate will increase until all have completed their studies.

Depending on the country, sometimes it is the ICT students, and sometimes the engineering students who do particularly few internships abroad. In some countries, science students do more internships abroad than 'technicians', in others their proportion is between ICT and engineers.

Source: EUROSTUDENT 8

Plans to enrol abroad
(actual preparations plus rather vague considerations for enrolment abroad)



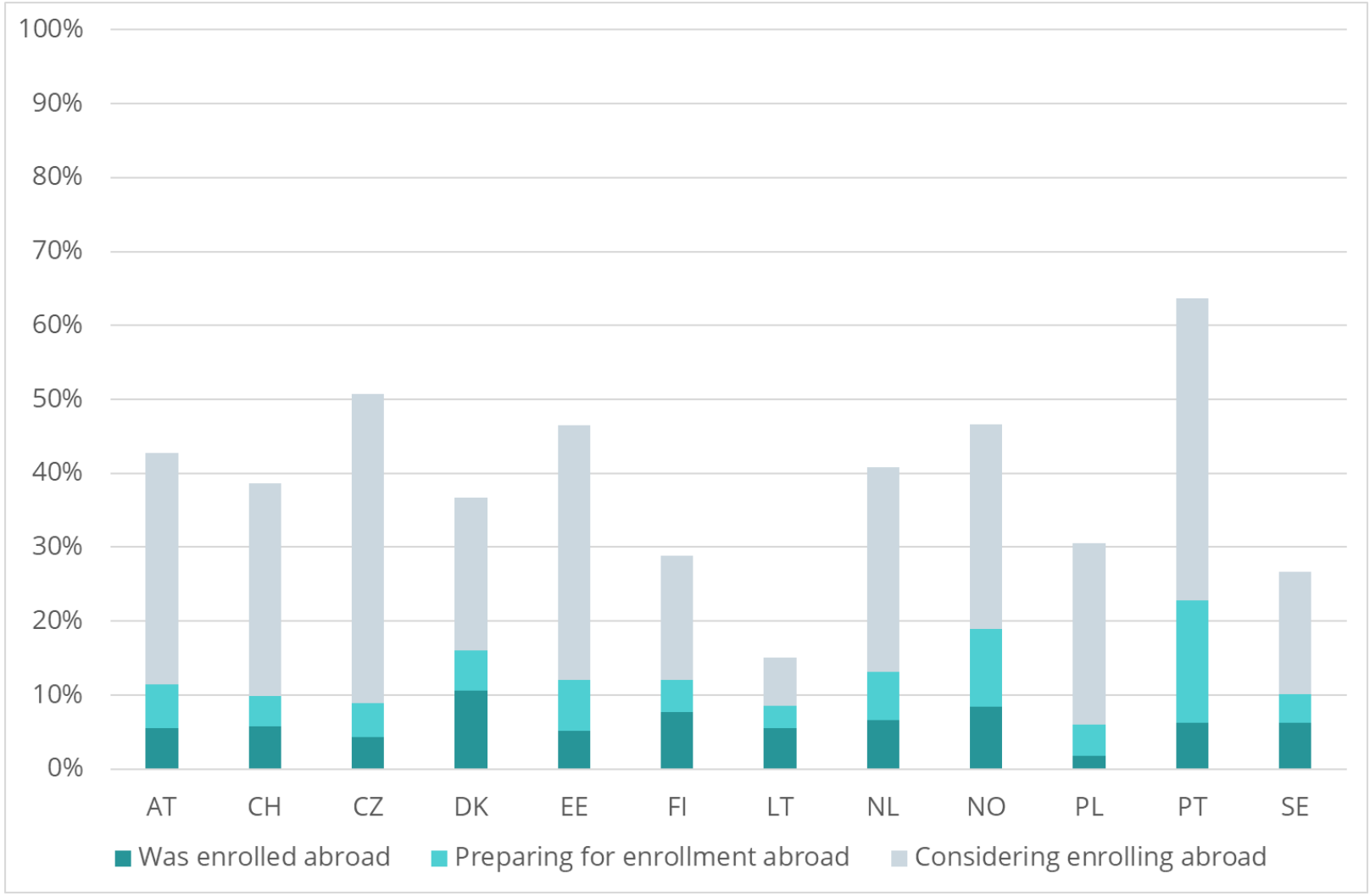
In the natural sciences in particular, the proportion of planners is often higher than the average, while in ICT and engineering it is at or below the average.

Source: EUROSTUDENT 8

Potential for temporary enrollment abroad

12 selected countries

Potential for temporary enrollment abroad: SCIENCE



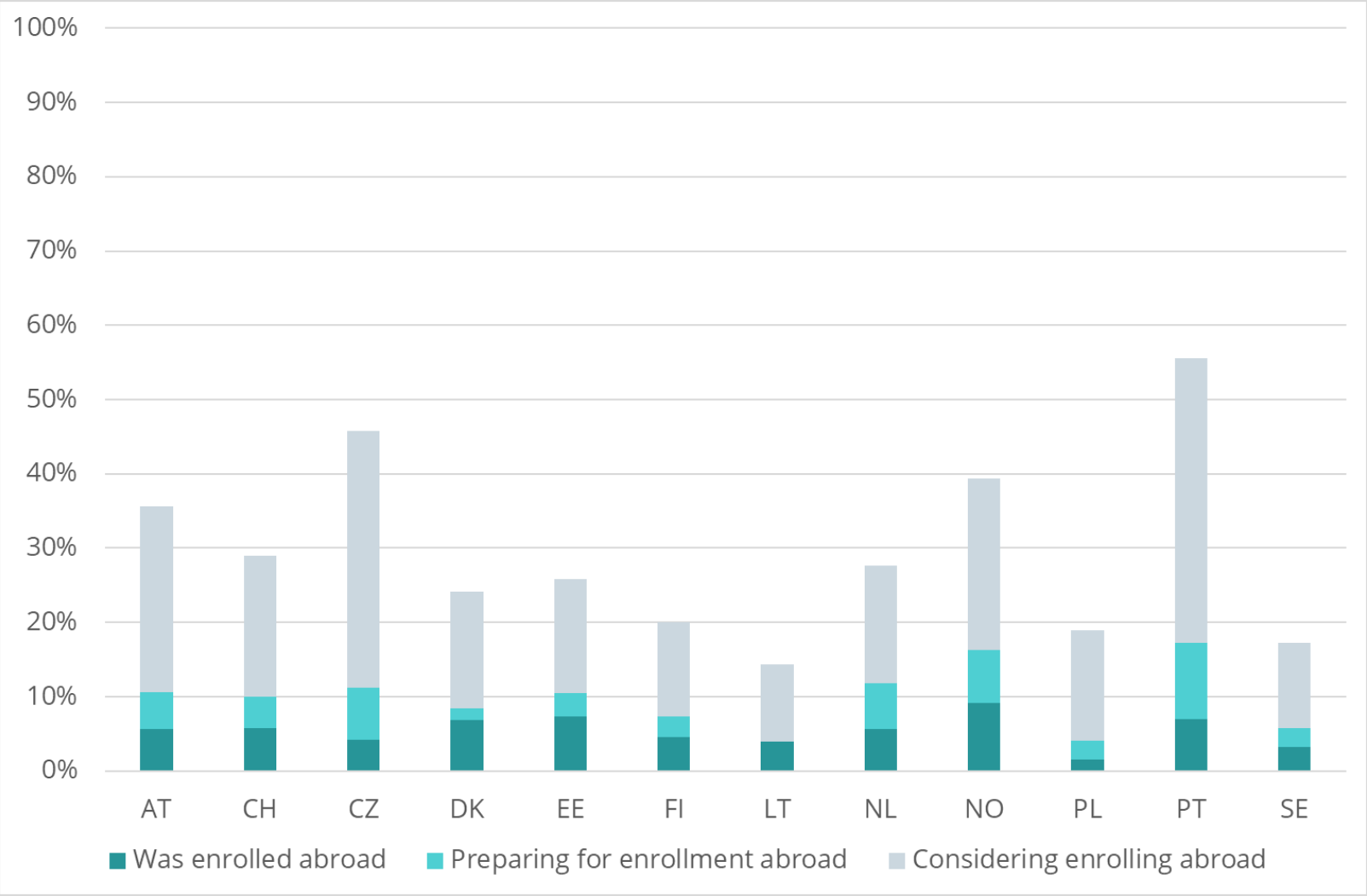
On average of the 12 countries compared, 6.2% of SCIENCE students have been enrolled abroad and a further 6.3% are planning to do so. The narrow mobility potential is therefore 12.5%.

A further 26.5% consider studying abroad temporarily, so the extended mobility potential is 39%.

However, the differences between the countries are huge:
In LT the extended mobility potential is 15%, in PT 64%.

On 100% missing have not been and do not plan to study abroad.
Source: EUROSTUDENT 8

Potential for temporary enrollment abroad: ICT



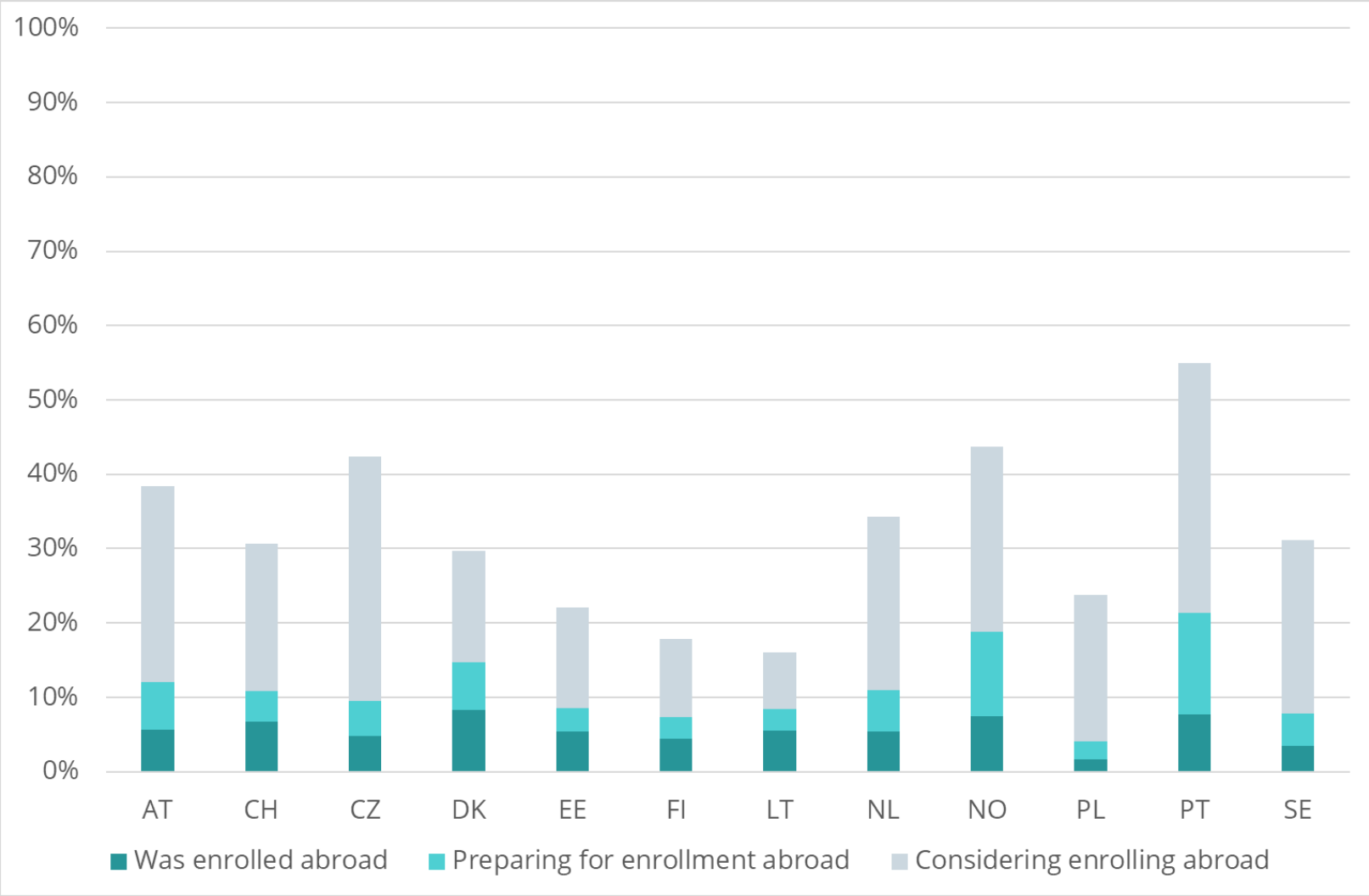
On average of the 12 countries compared, 5.4% of ICT students have been enrolled abroad and a further 4.4% are planning to do so. The narrow mobility potential is therefore 9.8%.

A further 19.7% consider studying abroad temporarily, so the extended mobility potential is 29.5%. Thus 10%-points lower than in sciences.

Here too, the difference between LT (14%) and PT (56%) is very large.

Source: EUROSTUDENT 8

Potential for temporary enrollment abroad: ENGINEERING



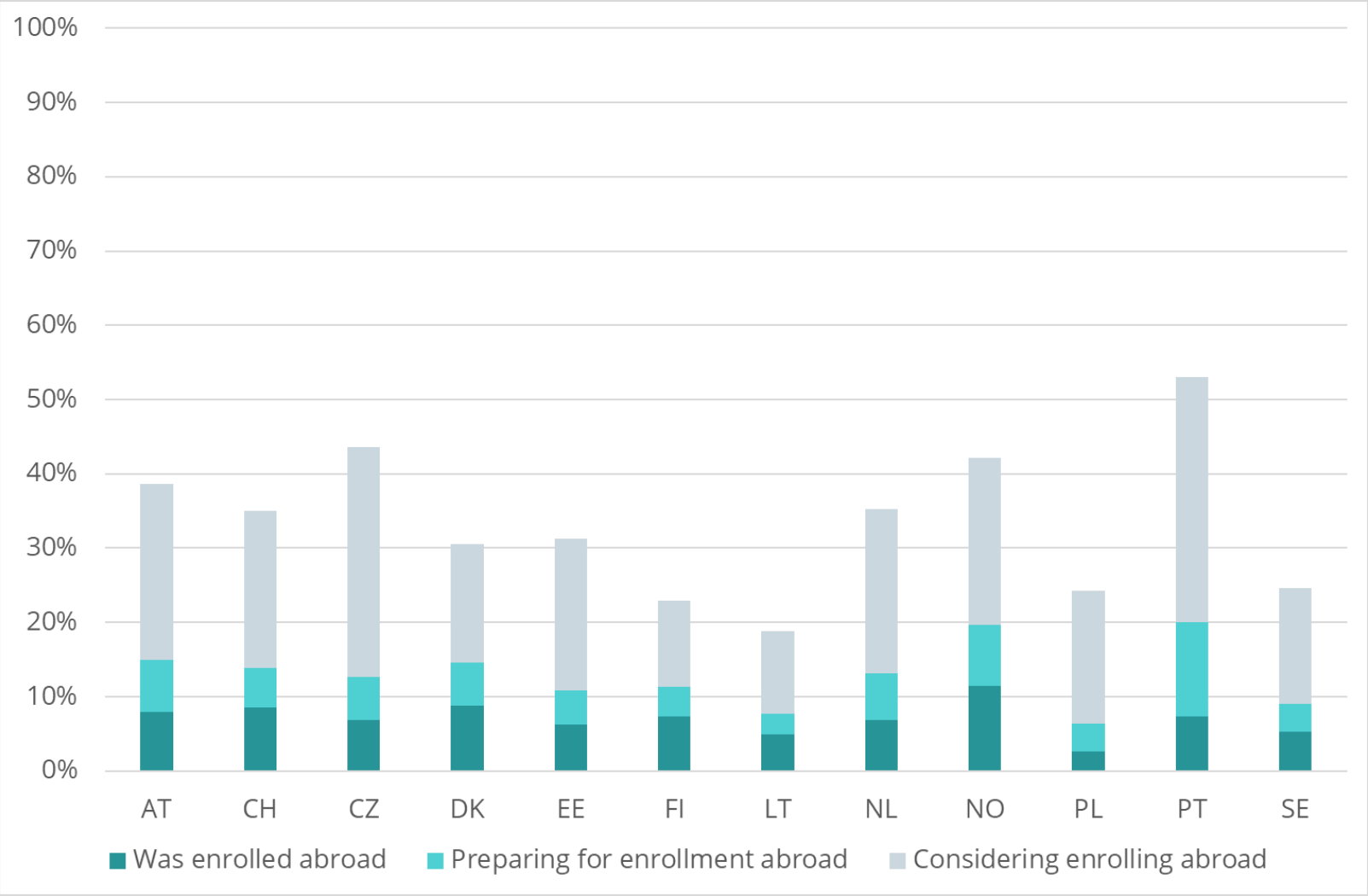
On average of the 12 countries compared, 5.5% of ENGINEERING students have been enrolled abroad and a further 5.7% are planning to do so. The narrow mobility potential is therefore 11.2%.

A further 20.9% consider studying abroad temporarily, so the extended mobility potential is 32.1%.

Here too, the potential is very low in LT (16%), but also in FI (18%) and highest in PT (55%).

Source: EUROSTUDENT 8

Potential for temporary enrollment abroad: ALL STUDENTS



For comparison, the data for all students: 7% were enrolled abroad and a further 5.8% are planning to do so. The narrow mobility potential is therefore 12.9%.

A further 20.5% consider studying abroad temporarily, so the extended mobility potential is 33.3%.

The range between LT (19%) and PT (53%) is also very wide here.

Source: EUROSTUDENT 8

Potential for temporary enrollment abroad: CONCLUSION

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- The narrow potential for temporary study abroad is about as high as average in sciences, below average in engineering and noticeably lower in ICT.
- The extended potential is significantly higher than average in the natural sciences, average in engineering and significantly lower in ICT.
- Achievable are
  - in sciences 12-39%
  - in ICT 10-30%
  - in engineering 11-32%
  - and among all students 13-33%
- However, the differences between the countries and their mobility potential are very large.
- In addition, STEM students are younger than average (see 1st graph), so their mobility potential should actually be above average.

Source: EUROSTUDENT 8

Obstacles to mobility

12 selected countries

Obstacles in EUROSTUDENT

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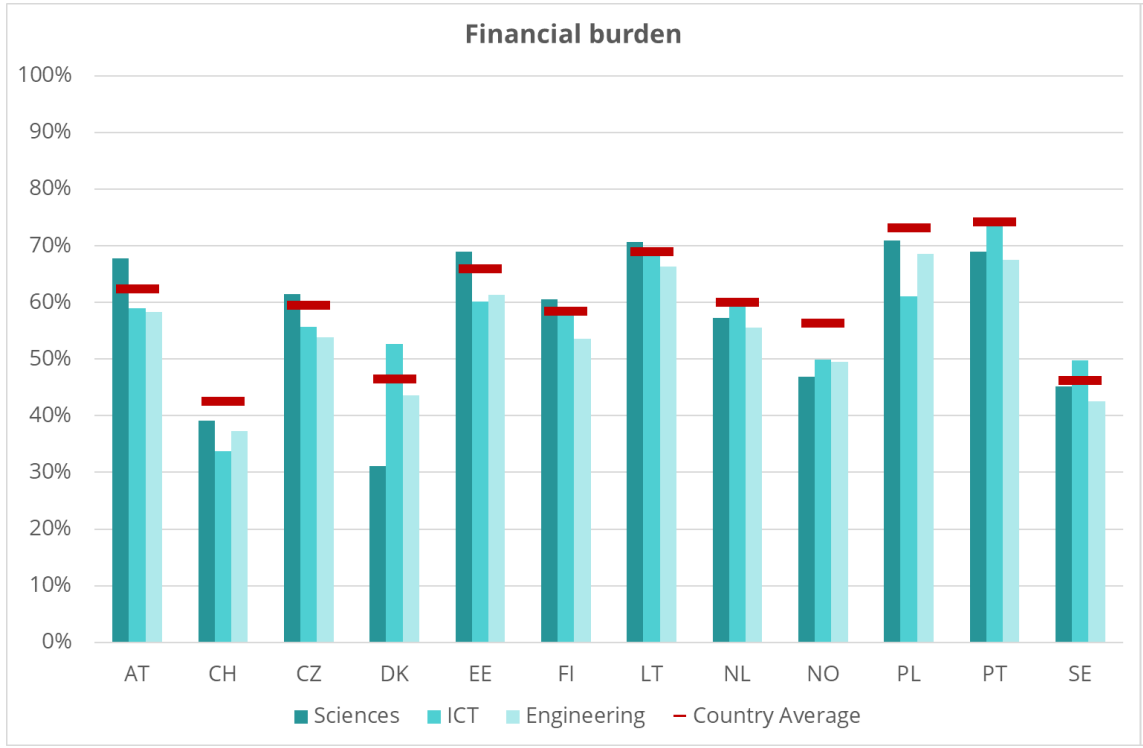
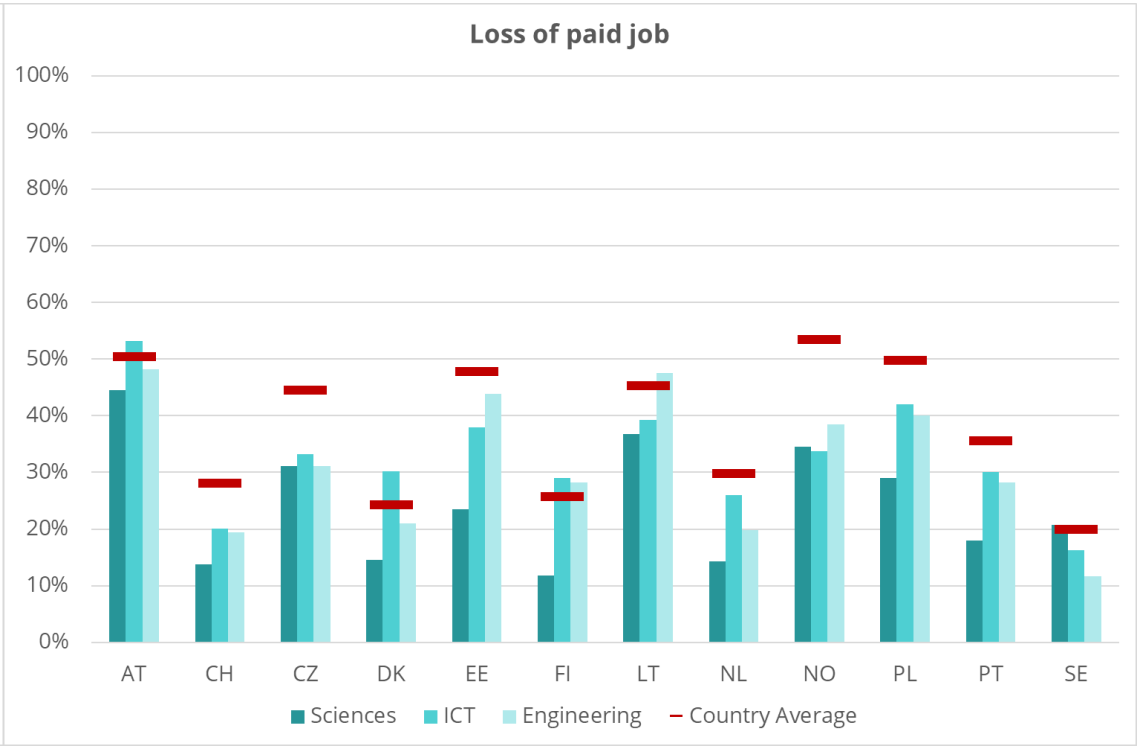
- In EUROSTUDENT we ask about 14 possible obstacles to mobility ranging from insufficient foreign language skills to travel restrictions (e.g. Covid).
- Data is available for those who have already completed a period of study abroad (what obstacles did they face?) and for those who have neither been abroad nor are planning to go abroad (what is hindering them?).
- Due to time constraints, only the biggest obstacles faced by non-mobile students are shown here.
- Furthermore, this is only about enrollment abroad and not about other mobility options.

Source: EUROSTUDENT 8

The biggest obstacles to mobility for non-mobile students I





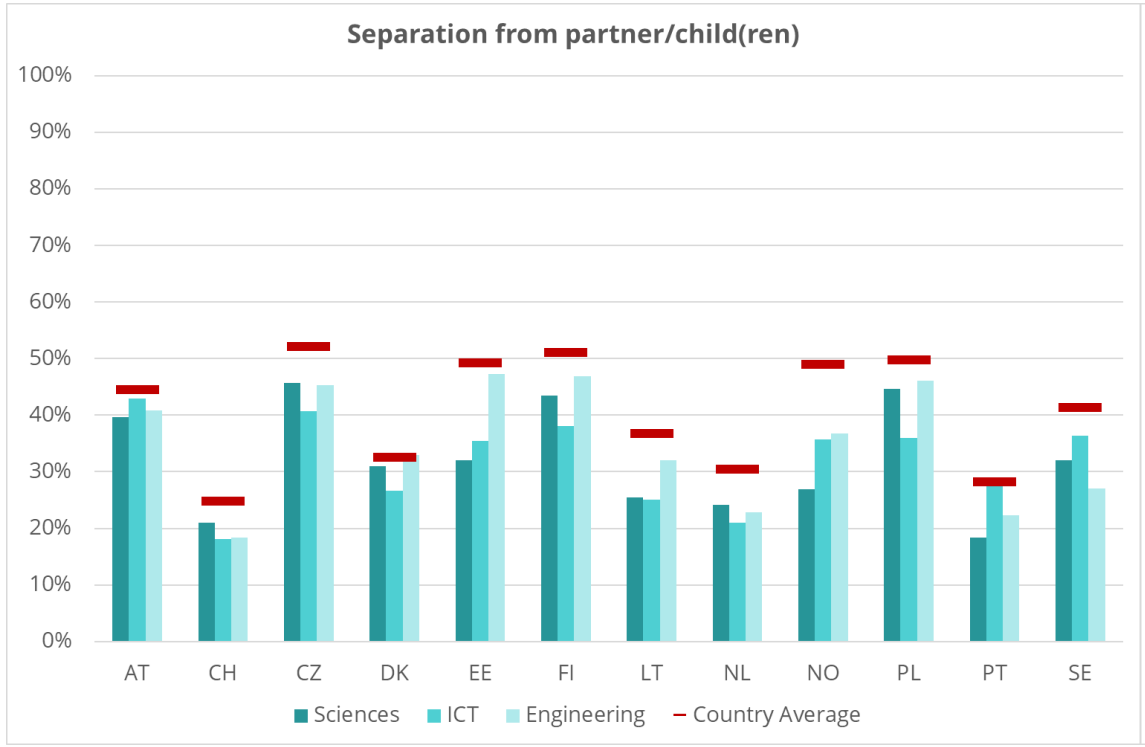
STEM: Average or slightly lower

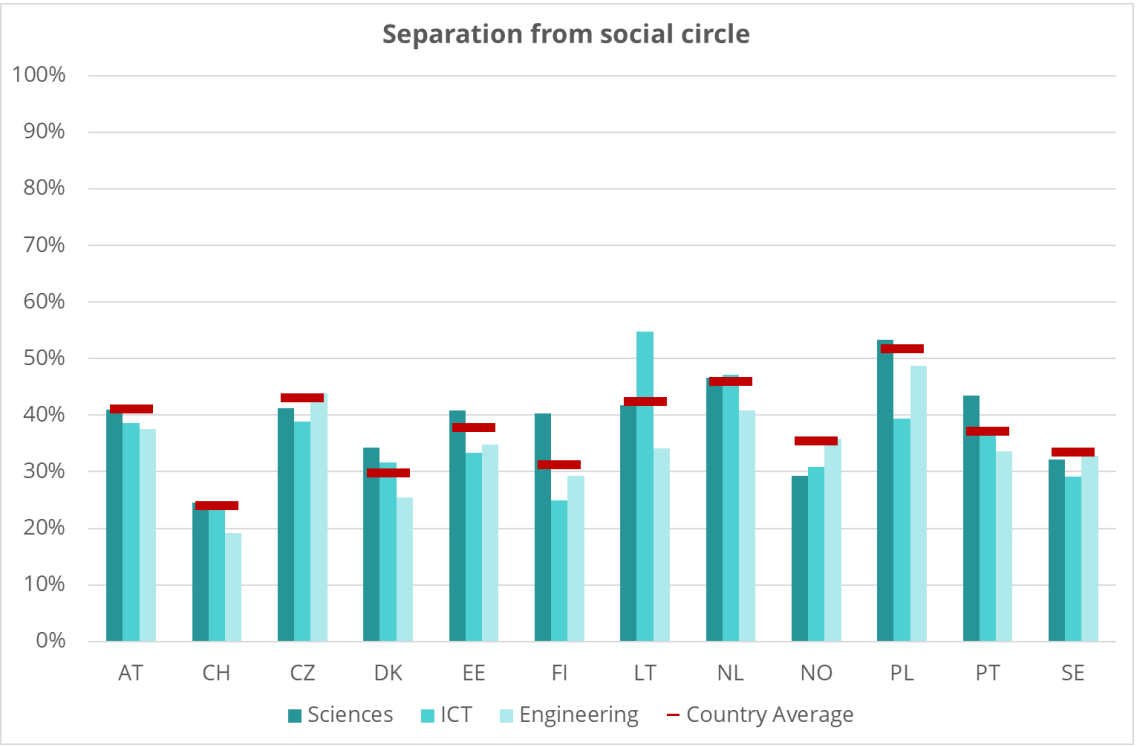
mostly significantly lower

Funding is everywhere the biggest obstacle

Source: EUROSTUDENT 8

The biggest obstacles to mobility for non-mobile students II



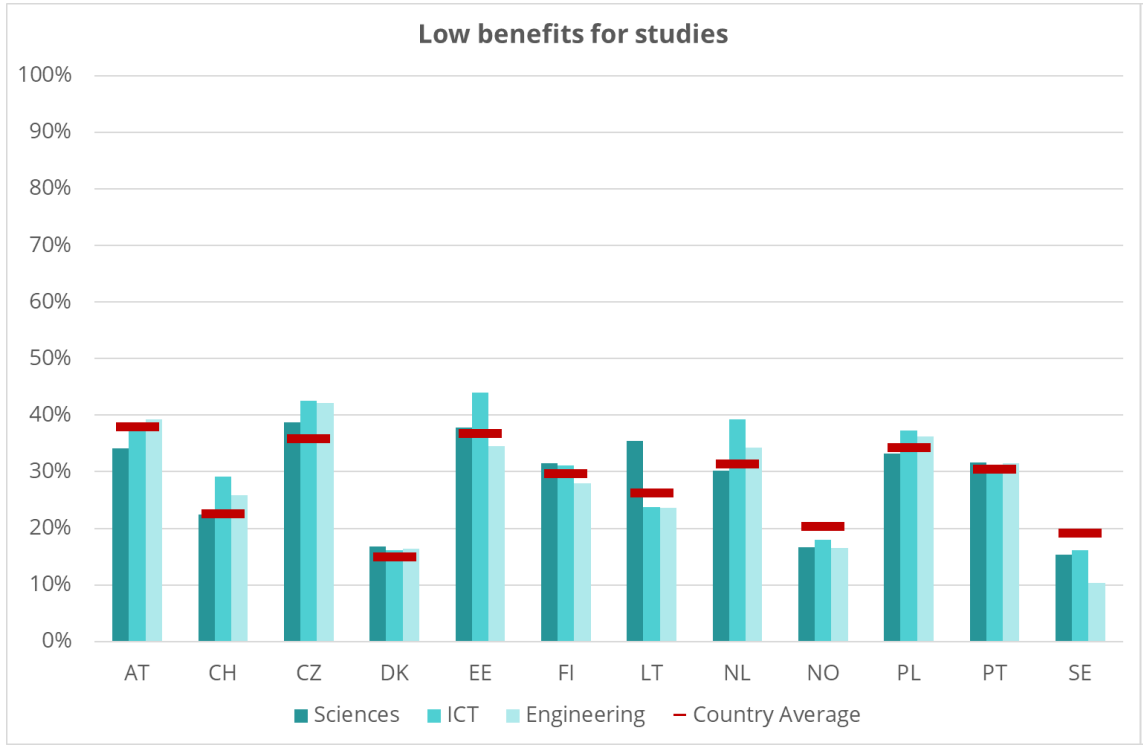


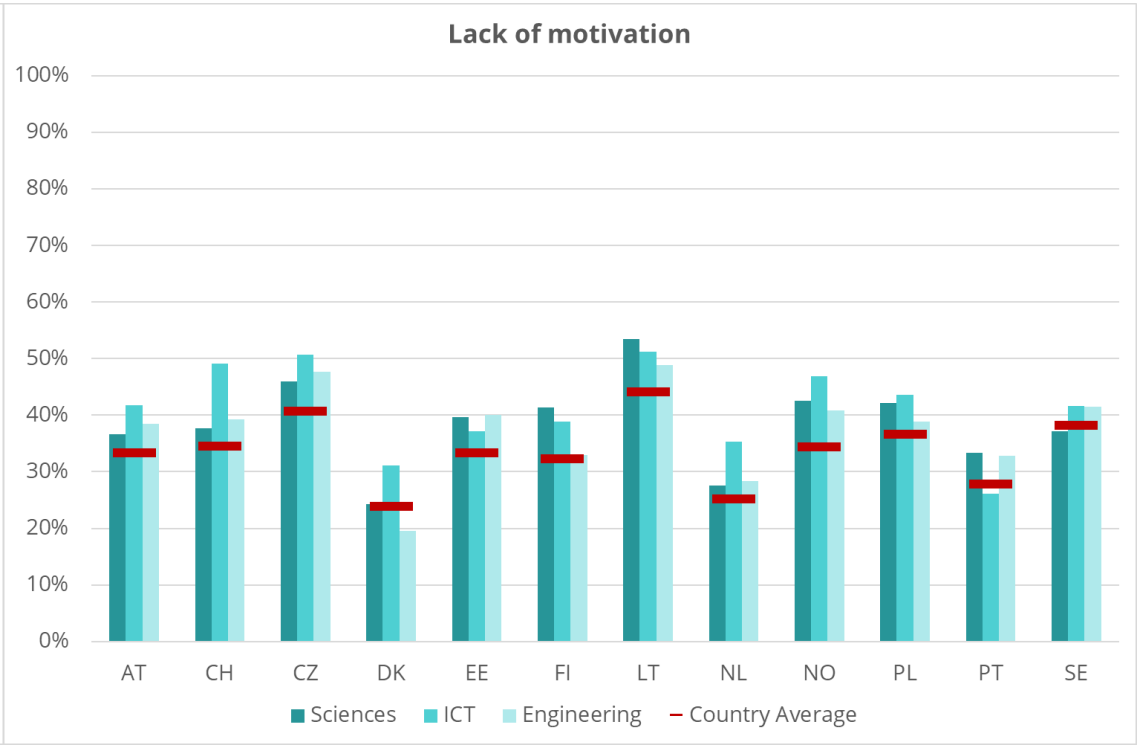
STEM: mostly significantly lower

average or slightly lower

Source: EUROSTUDENT 8

The biggest obstacles to mobility for non-mobile students II





STEM: mostly average or slightly higher

almost everywhere higher than average

This is mainly due to the higher share of men, who state a lack of motivation in general more often than women. On the other hand, this is also stated more often in sciences (more women) than the average in several countries.

Source: EUROSTUDENT 8

Conclusions

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- Any measure to increase mobility must be adapted to the students on site and their specific situation to be effective.
- Funding is the biggest obstacle in all countries and (nearly) all fields of study
- In ICT and engineering in particular, job prospects have been excellent in recent years almost all over Europe, so a stay abroad adds little value to a CV.
- Men are less likely to see a positive benefit in a stay abroad and therefore lack more often motivation.
- In the age of low-cost airlines, it can also be assumed that a stay abroad has lost its adventurous character.
- There is therefore a lack of a narrative, especially for young men in STEM, as to why they should go abroad.

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  - Synopsis of Indicators
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  - National reports
- Intelligence Briefs
  - Mobility between Bachelor and Master's degrees
  - Studying abroad for everyone? Obstacles for international mobility among students in EHEA-countries
- Online-Database plus Scientific Usefile (microdata)
- EUROSTUDENT Talks (online)
  - 15.5. Home or away? Insights into international student mobility from Sweden and EUROSTUDENT 8
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Thank you for your attention!