Insights from EU as a Science Nation Report

Federica Rosetta
VP Academic Relations and Public Affairs EMEA
Elsevier

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Advancing human progress together

In this session

1. **Europe in the world**
2. **Inside the EU27: distributed excellence**
3. **The ERA opportunity**

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"This is a pivotal report that appears at a decisive moment for European science, providing an essential tool for decision-makers."

Pawel Rowinski, President, ALLEA,
Director, Polish Academy of Science

"As this report highlights, Europe stands at a pivotal moment in its pursuit of global competitiveness through research and innovation."

Manuel Heitor, Chair of the High-Level Group of
Horizon Europe´s assessment (2024),
former Minister of Science of Portugal

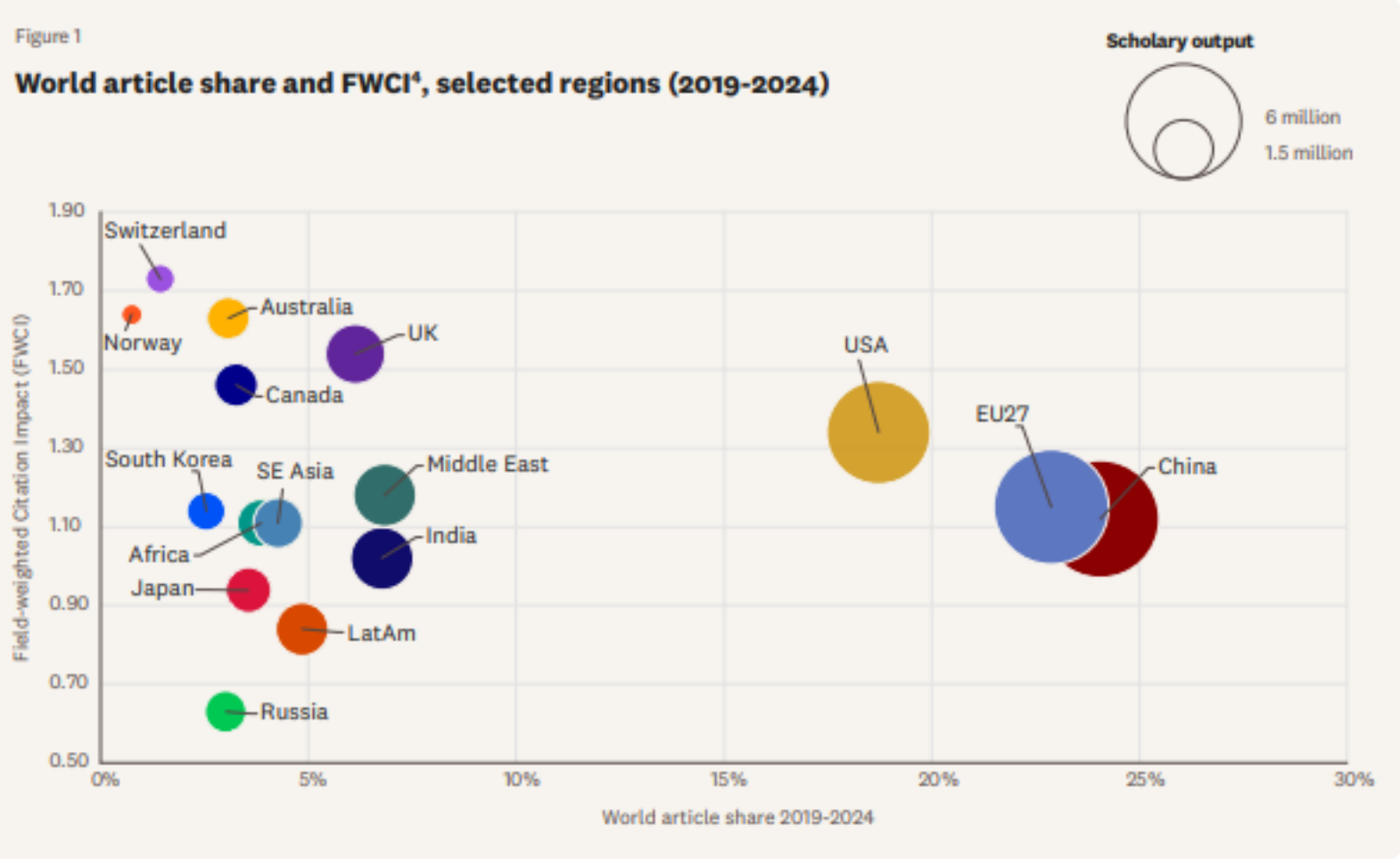
"This report is timely. It arrives at a moment when Europe must reflect on its role in the emerging global landscape. *The report provides data and thought-provoking insights that are very useful for analyzing how science—and, to some extent, innovation—are developing on our continent. I hope that the content of* ***this report, along with others, will help deepen our understanding of the evolving scientific landscape, raise awareness in society, and inform responsible policies****."*

Josep M. Garrell, President,
European University Association (EUA)

"The battle is not lost, but can be won by sharper choices, is my conclusion of the Elsevier report."

Michiel Scheffer, President of the Board
European Innovation Council (EIC)

Europe is a research powerhouse



EU27: 23% of global scholarly output

FWCI 1.15 – 15% above world average

Comparable to USA in volume, above China in impact

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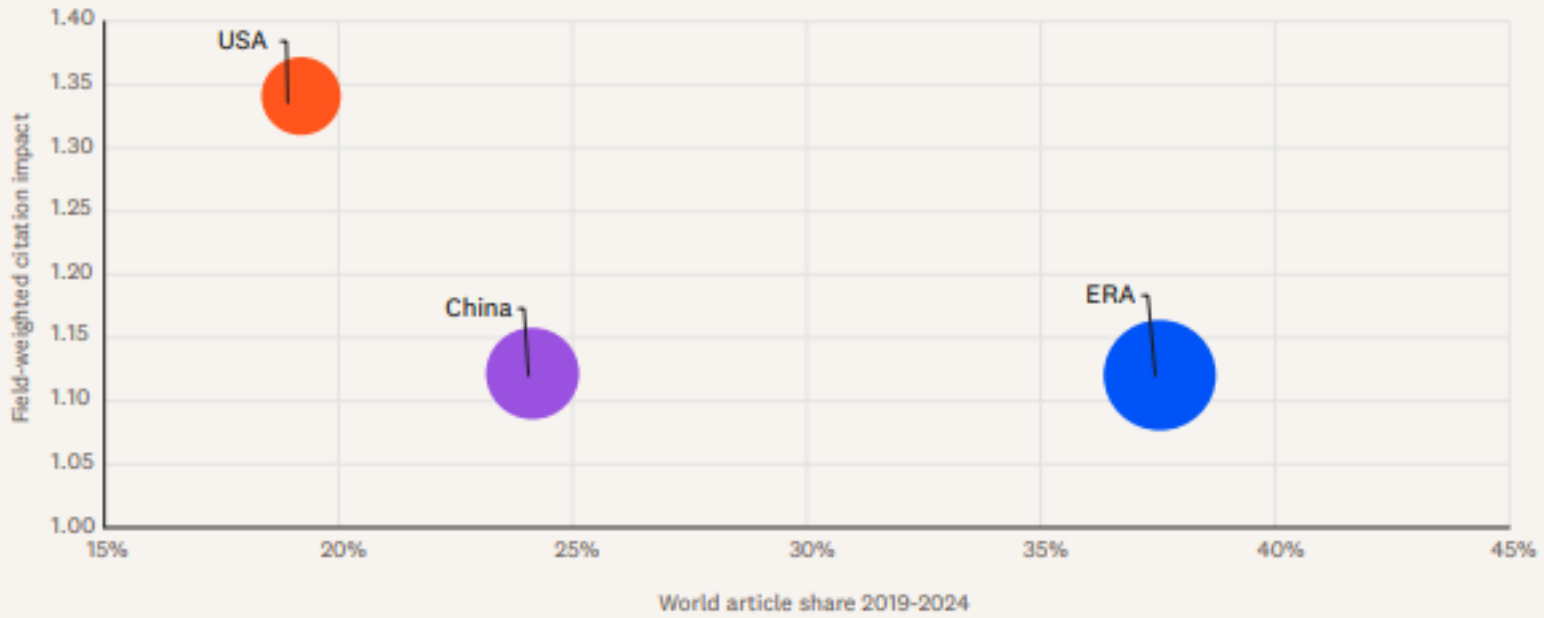
The Europe Research Area: the role of associated countries

Figure 4

World article share and FWCI: European Research Area, USA and China (2019-2024)



ERA
(EU27 + associated countries)

37.4% of global output – outperforming China in both scale and citation impact

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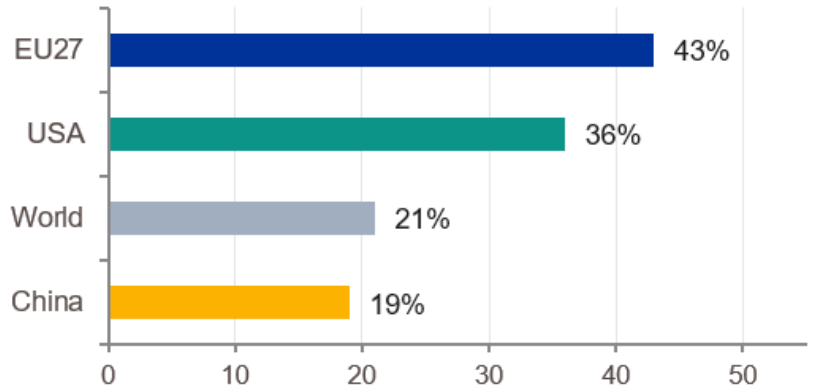
Research collaboration, impact & policy influence

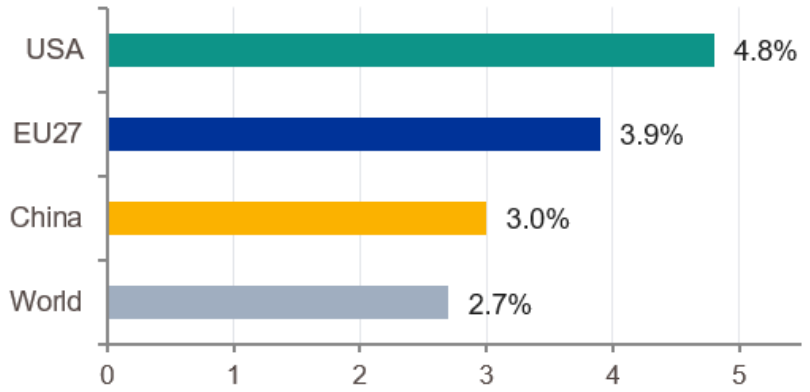
INTERNATIONAL COLLABORATION

Int'l collaboration rate 2020–2024



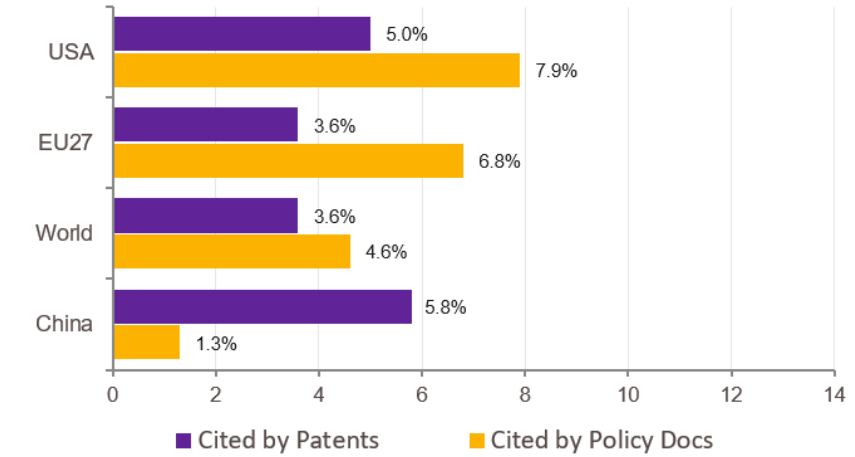
INDUSTRY–ACADEMIA COLLABORATION

Academic-corporate co-authorship rate



RESEARCH IMPACT BEYOND ACADEMIA

Share of publications cited in policy documents vs patents (2014–2024)



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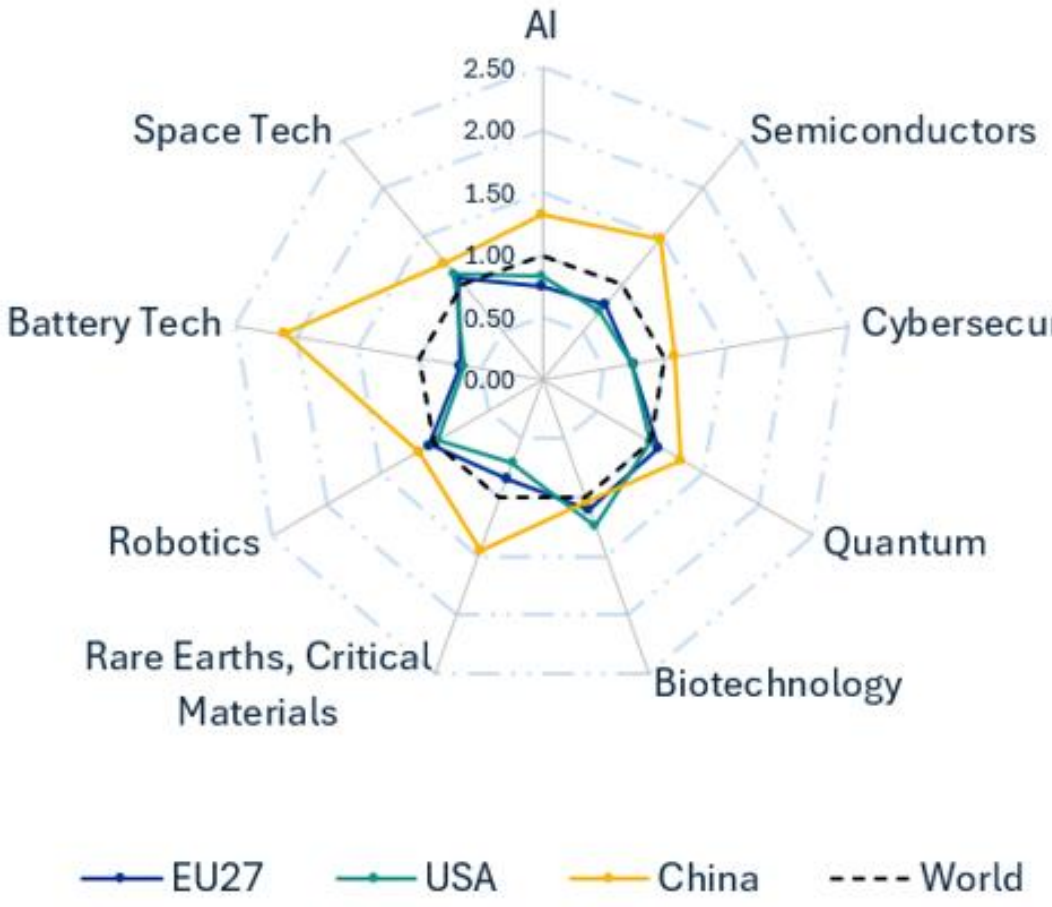
EU27 key technologies RAI



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Inside the EU27

Distributed excellence

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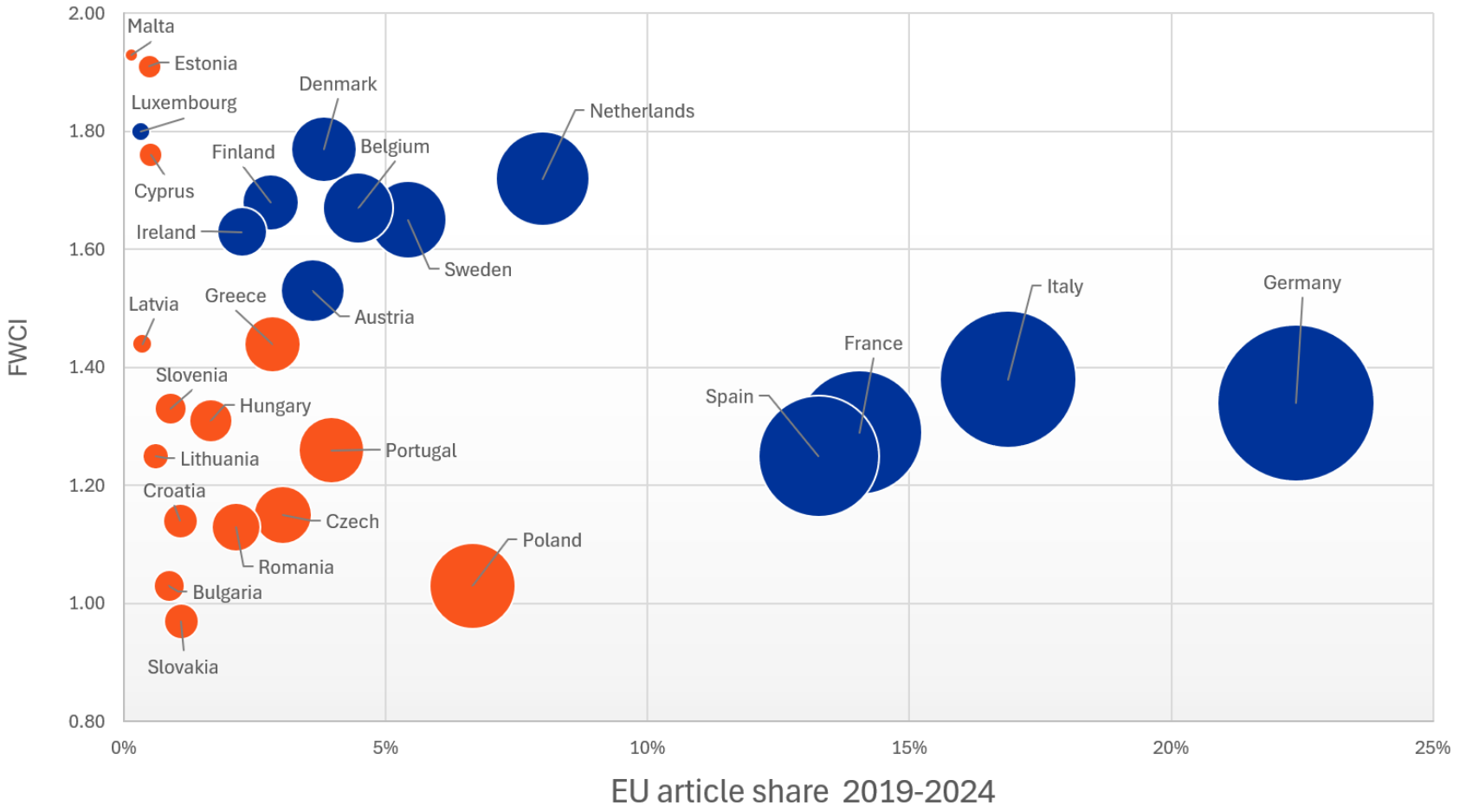
The *'widening'* label not tells the full story

Research output across these 15 countries varies widely in both volume and citation impact, reflecting differences in size and stage along the research journey.



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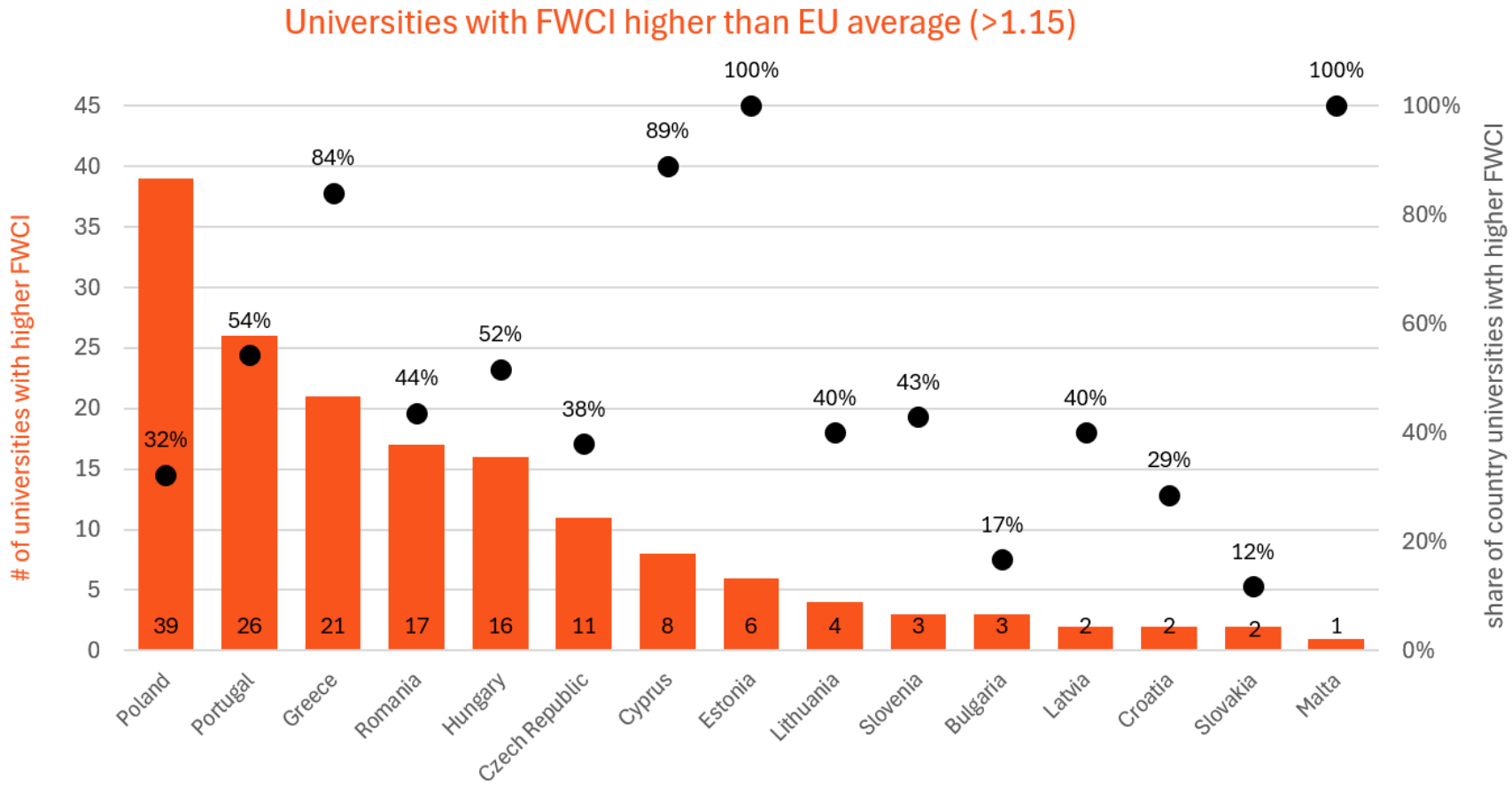
Distributed excellence across 15 countries



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Central & Eastern European countries (‘*Widening*’ group)

The scale of the opportunity

25%

of EU scholarly output

Equivalent to 1.15 million papers in five years (2020-2024)

704,000

Number authors 2020–2024

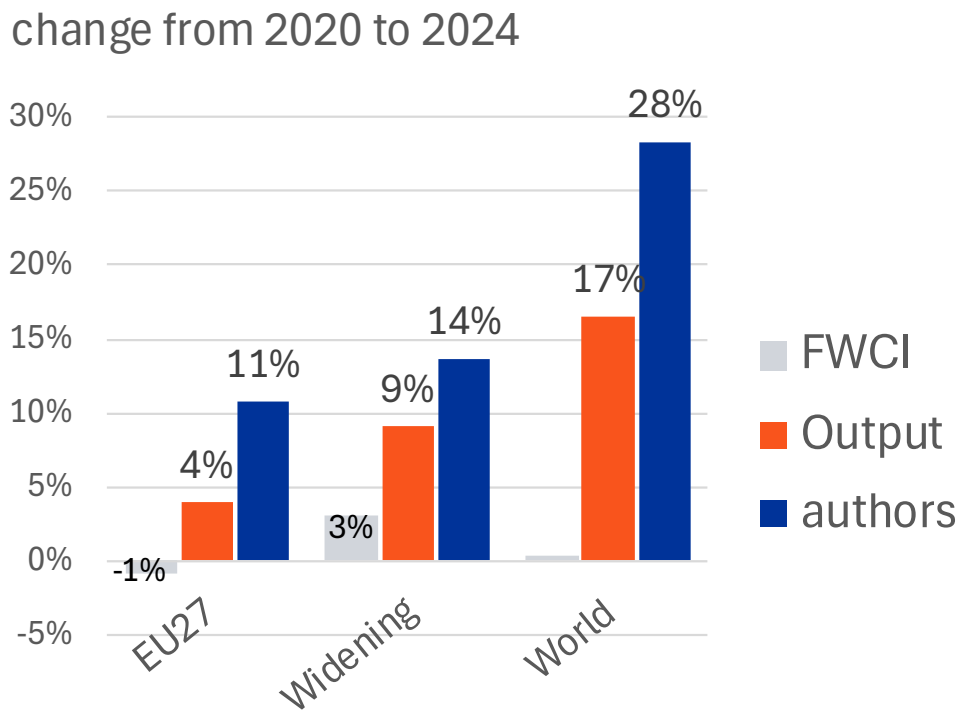
The number of authors grew by 13.6% over the period – representing 21% of EU active researchers.

3%

FWCI growth 2020–2024

Signals rapid quality acceleration.

‘*Widening*’ group: Growth in 5 years

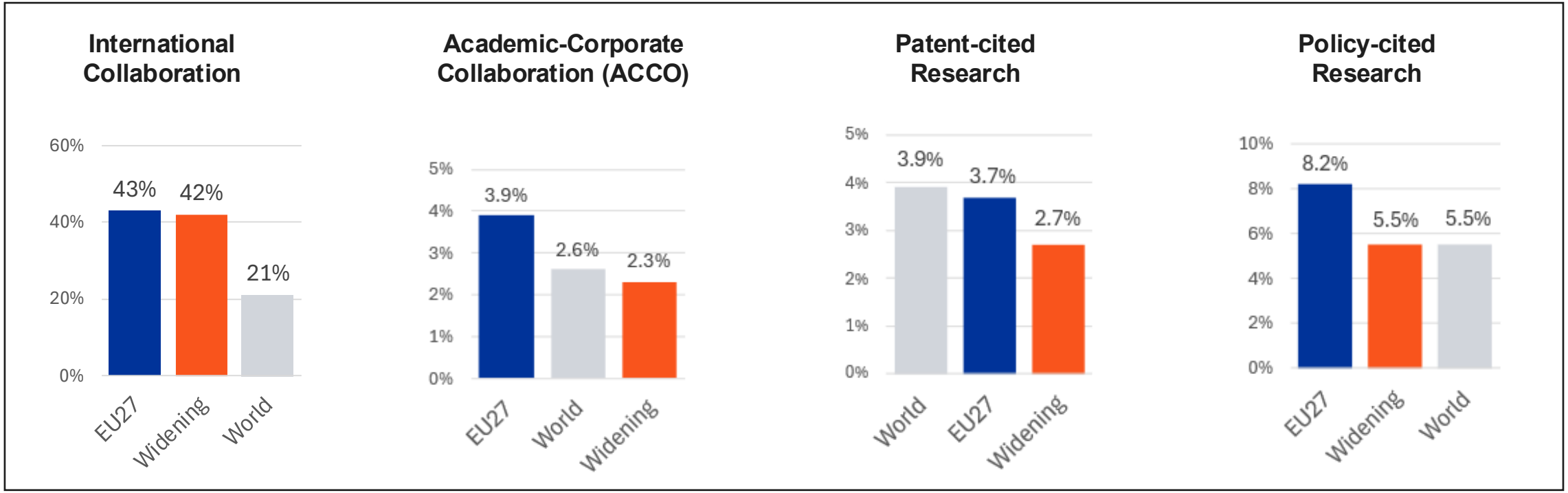


Five years of accelerating momentum

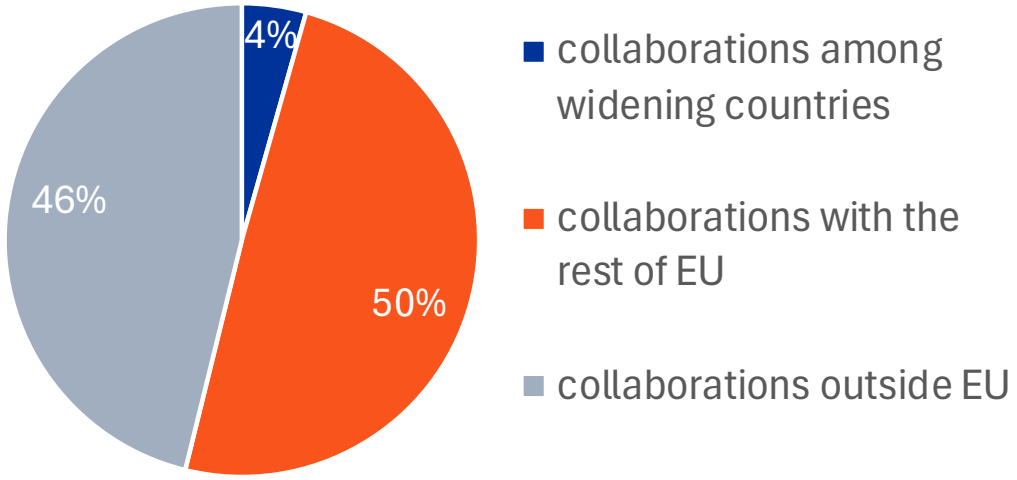
- Research output grew at **more than twice the EU average** (2020-2024).
- Researcher numbers and citation impact increased faster than the EU average, indicating **sustained structural progress.**

As global research output grows much faster than Europe's (17% vs 4%), ‘*Widening*’ countries are helping the EU remain competitive and keep pace internationally.

Connected, but not yet converting



International collaboration in '*Widening*' countries



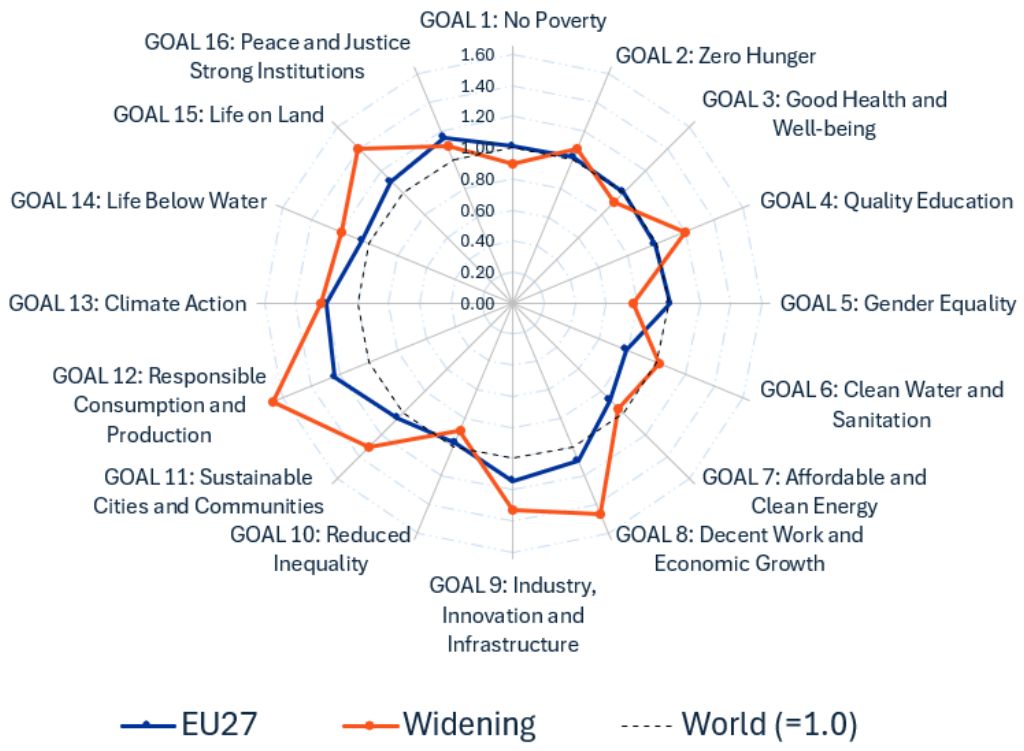
Top Partnering countries (% of Widening total)

Partner	Co-pubs %	Partner	Co-pubs %
USA	8.1%	Brazil	2.6%
UK	7.2%	Switzerland	2.6%
Germany	7.1%	India	2.4%
Italy	6.1%	Sweden	2.2%
France	4.6%	Austria	2.2%
China	3.4%	Belgium	2.2%
Netherlands	3.0%	Canada	2.2%

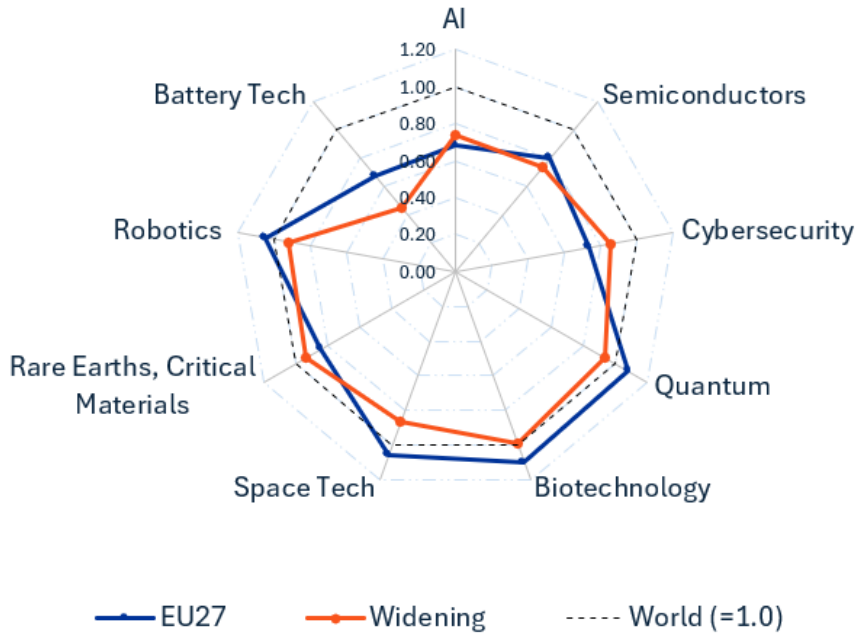
Widening countries connect outward, not to each other:
only 4% of collaboration is peer-to-peer, with the balance split between the rest of the EU (50%) and the wider world (46%).

Leading on green, catching up on deep tech

Sustainable Development Goals (RAI)



Key Technologies (RAI)



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The ERA opportunity

Widening Countries: Strengthening Europe's Research Ecosystem

What the evidence shows

- **Quality is already here**

Most widening countries perform above the EU27 FWCI average.

- **Scale is significant**

25% of EU scholarly output comes from widening countries.

- **The challenge is structural, not scientific**

Gaps in research infrastructure, stable funding, and industry-academia collaboration – not in research quality – are holding these systems back.

- **Brain drain risks reversing progress**

Senior-heavy researcher profiles in widening countries signal early-career outflows.

The ERA opportunity

- **Integrate, don't just support**

The report calls for widening countries to be 'further integrated in the broader ERA ecosystem' – as co-architects, not recipients.

- **Ground the next Framework Programme in ERA**

The next Framework Programme must be designed to leverage distributed excellence.

- **Foster circulation and return**

The ERA Policy Agenda 2025–2027 should move beyond enabling mobility to actively incentivising return.

- **Build industry-academia bridges**

Academic-corporate collaboration rates in widening countries remain low. Policy and institutional design – not just funding – to close this gap.

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