



EU Insight – ERA assessment

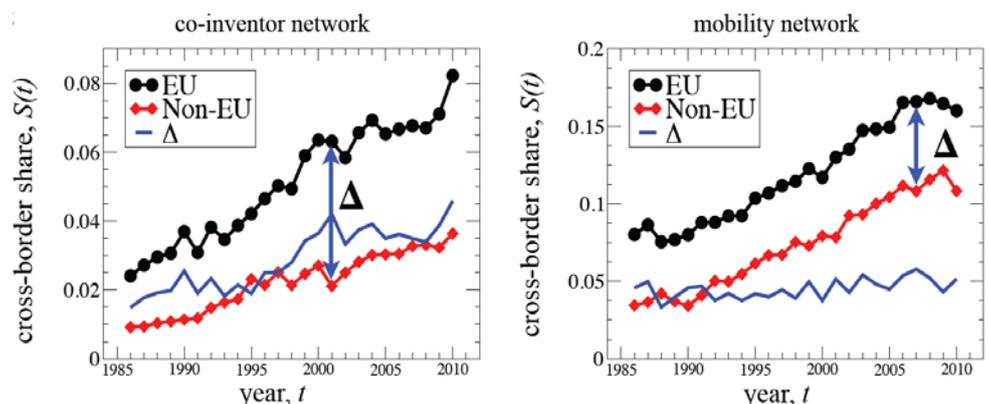
The first Progress Report on the European Research Area was published in September 2013. Its key findings concur with the conclusions drawn in an article by Chessa et al, published in Science, Policy Forum earlier this year and conclude that “there is a different degree of completion of ERA at national level and that more coordinated efforts between MS could contribute to improving both European excellence and national effectiveness”. Here, we present some of the key findings of the article based on different indicators from those of the Progress Report and some concluding remarks.

The **European Research Area (ERA)** is an initiative from the European Commission that seeks to integrate scientific and technological capacities within the EU in order to improve Europe’s competitiveness at the global level. ERA is part of the Lisbon Strategy adopted in 2000 and meant to become an equivalent to the European “common market” for research and innovation, achieved by an increase in transnational cooperation and more competition within the EU research systems.

Assessment of the degree of completion of the ERA goals

In order to assess the degree of completion of the ERA goals, Chessa et al analyzed some key indicators in a study published earlier this year. They built a geographical collaboration network from patent and scientific publication data in order to compare R&D activities within the EU and R&D activities within other OECD countries. The comparisons were based on five different networks, including (i) the patent co-inventor network and (ii) the publication coauthor network to measure the intensity of interregional collaboration at the individual level; (iii) the co-applicant patent network to measure the collaboration between institutions (“applicants”) located in different regions, (iv) the patent citation network to measure scientific integration by following the flow of citations from patents in one region to patents in another, and (v) the patent mobility network to measure the mobility of inventors by tracking their location in subsequent patents. The network analysis of co-patent activities is shown in Figure 1 and reveals similar developments for EU and non-EU regions:

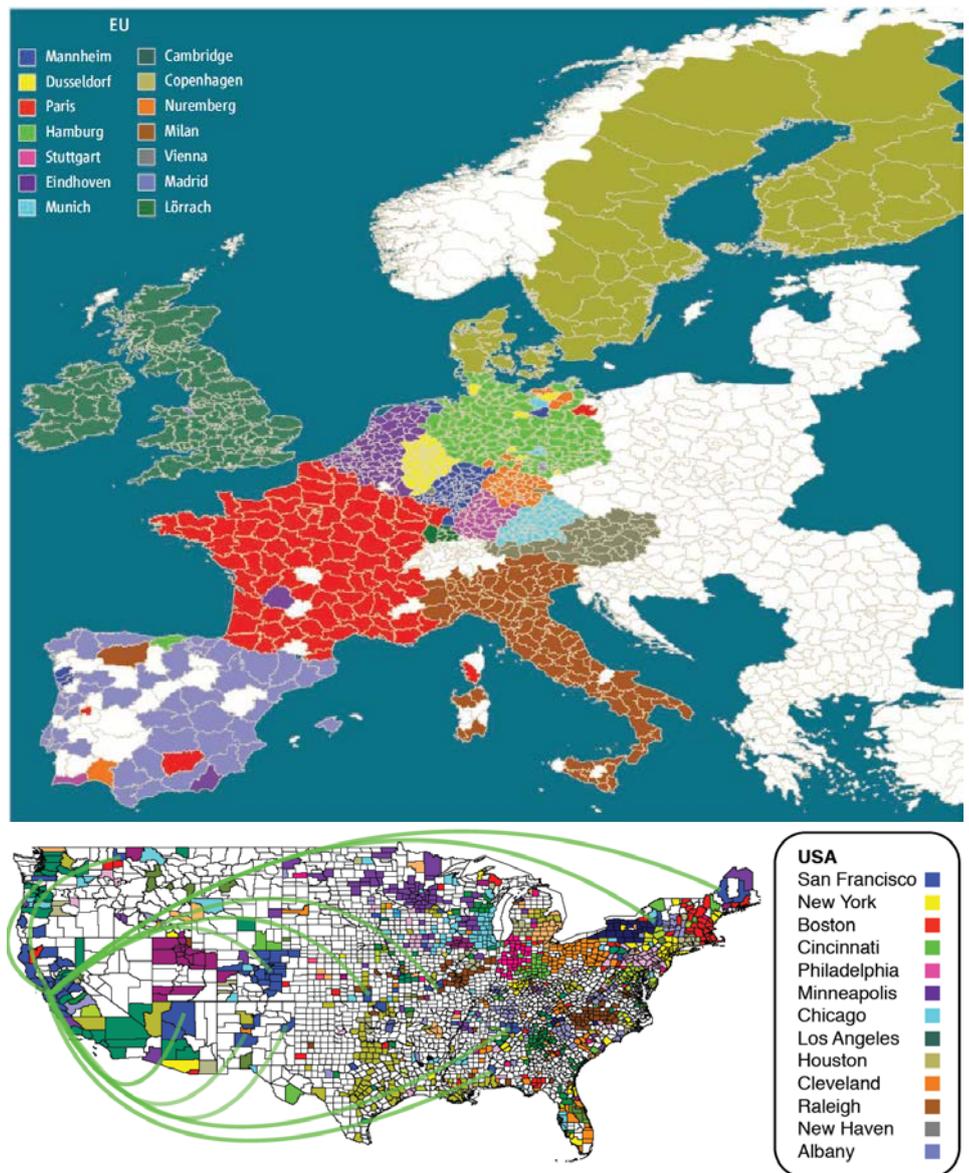
Figure 1: Annual cross-border share of the co-inventor and the mobility network in EU (black symbols) and non-EU (red symbols) areas. The increase in both networks over time reflects the well-documented trend in the global patent activity. The difference between the EU and the non-EU data suggests that the overall increase in the co-inventor and mobility networks does not correlate with the EU policies [1].





The community structures derived from network clustering algorithms are presented in Figure 2. A comparison between the community structures in the EU and the US shows that long-distance scientific community structures are still far more prominent in the US, while most European co-inventor clusters align with the national borders. Two exceptions within Europe include the transnational clusters centered around Eindhoven and around Copenhagen, comprising the Benelux states and the Nordic countries, respectively.

Figure 2: Representation of community structures of the 2009 EU-15 and the US co-inventor networks, top and bottom, respectively. Communities (color blocks) are labeled by their most-central region. Green arcs highlight some of the long-distance members of the community for which San Francisco is the core region. For the US, only the top 13 communities are shown [1].





Concluding Remarks

Both documents, the Progress Report and the study conducted by Chessa et al provide evidence that more work remains to be done in order to implement the ERA successfully. However, quantifiable indicators have been identified to assess the progress of the ERA. This will provide us with scientific-based policy recommendations, as pointed out by Commissioner Máire Geoghegan-Quinn [5]:

“I am convinced that ERA policy and structural reforms can only be based on a monitoring mechanism providing accurate information on national policies and on their implementation by research funding and research performing organisations. Like our science, our policy making will only be as robust as the evidence used to underpin it. I urge all Member States and relevant stakeholders to support further this evolving monitoring process.”

Sources:

- [1] Chessa et al. Is Europe Evolving Toward an Integrated Research Area? *Science* (2013) **339**, 650-51
- [2] [ERA Progress Report Overview](#)
- [3] [ERA Progress Report](#)
- [4] [ERA Progress Report: Facts and Figures](#)
- [5] [Press Release from the European Commission: ERA Progress Report](#)