



Measuring Innovation and Smart Specialisation – What have we Learned?

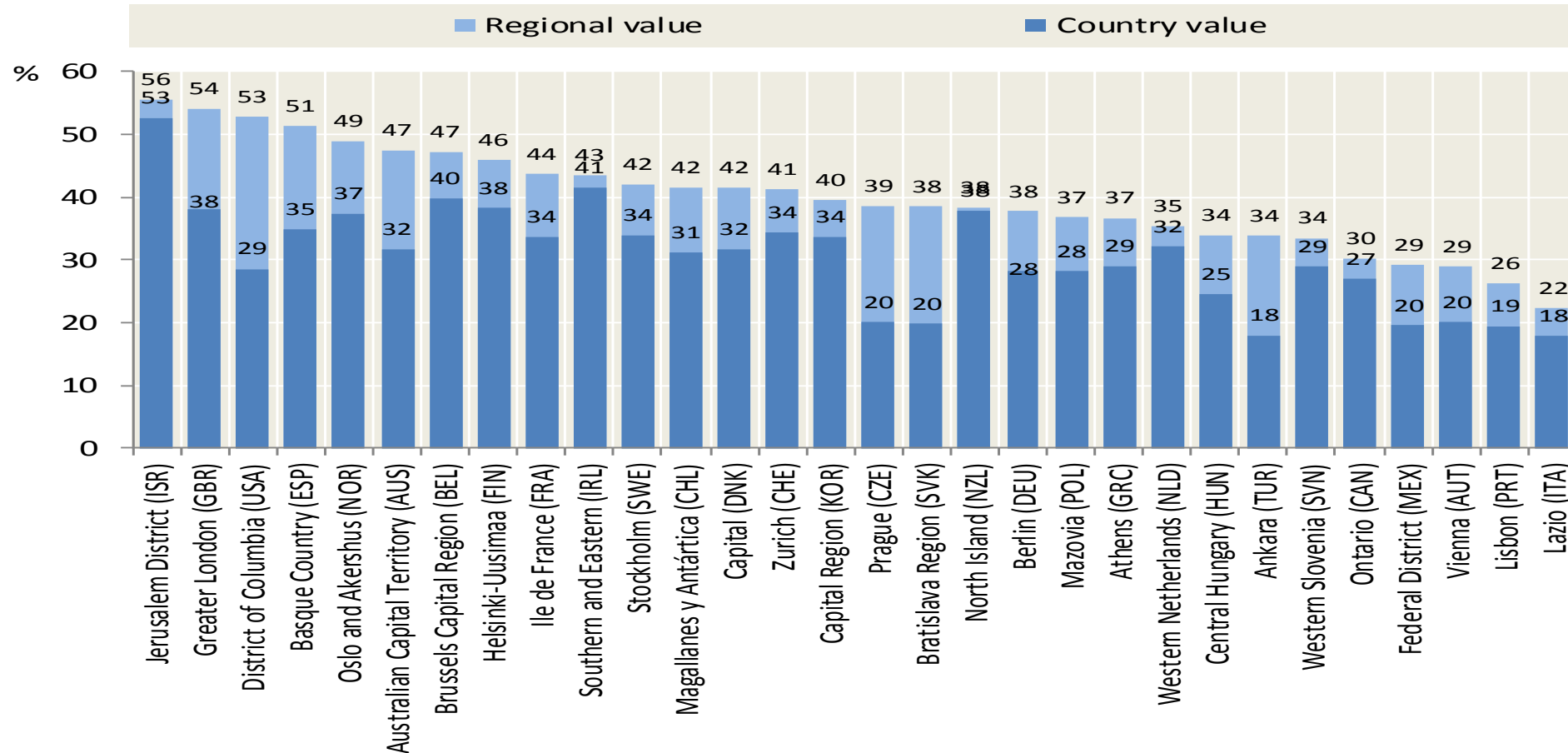
Dirk Pilat, OECD

Outline

- What drives innovation performance?
 - Investment in education and knowledge
 - Interactions and knowledge flows
 - Innovation dynamics
- Looking at outcomes and impacts
- Linking innovation to policy
- Innovation and smart specialisation
- Gaps and a measurement agenda

Large disparities in education across regions ...

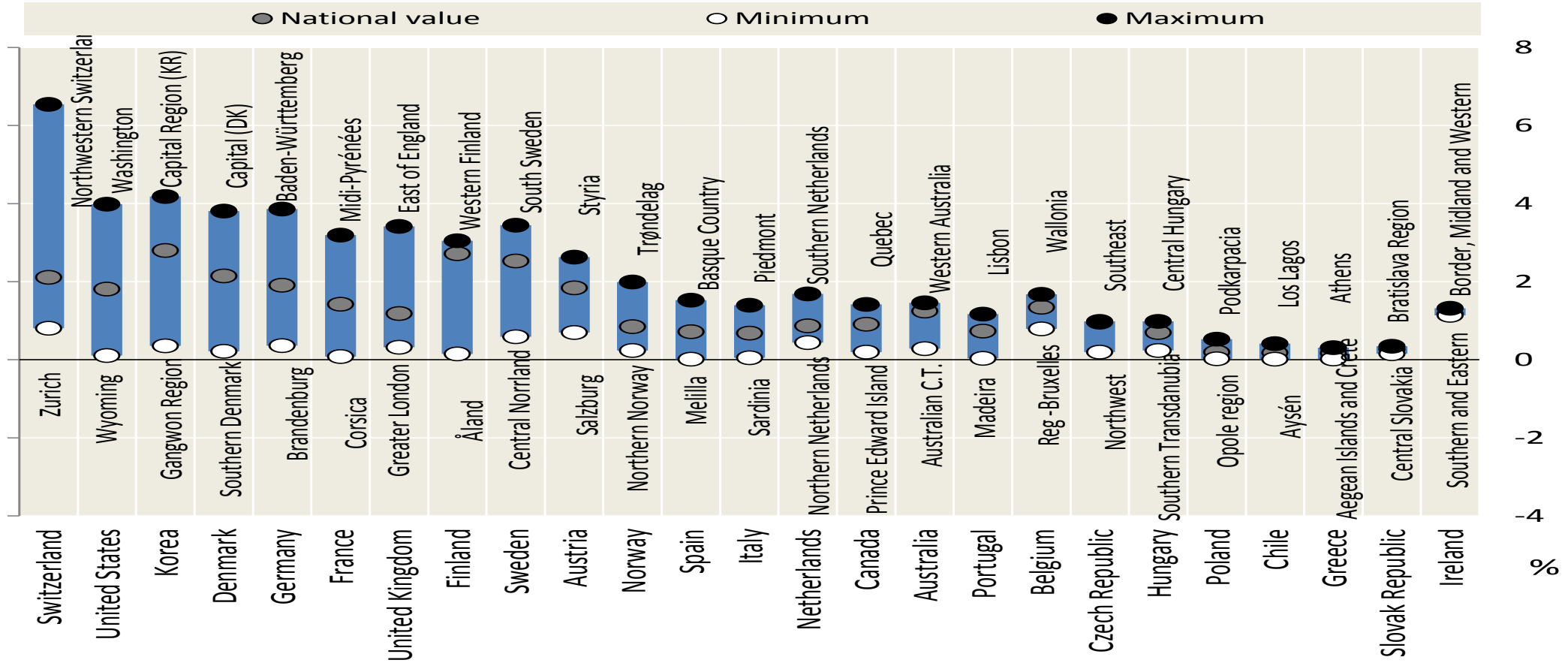
Top TL2 region within each country with the highest percentage of labour force with tertiary educational attainment compared to their country average, 2012



Source: OECD (2013), Regions at a Glance, <http://rag.oecd.org/>

.. and also in business investment in R&D

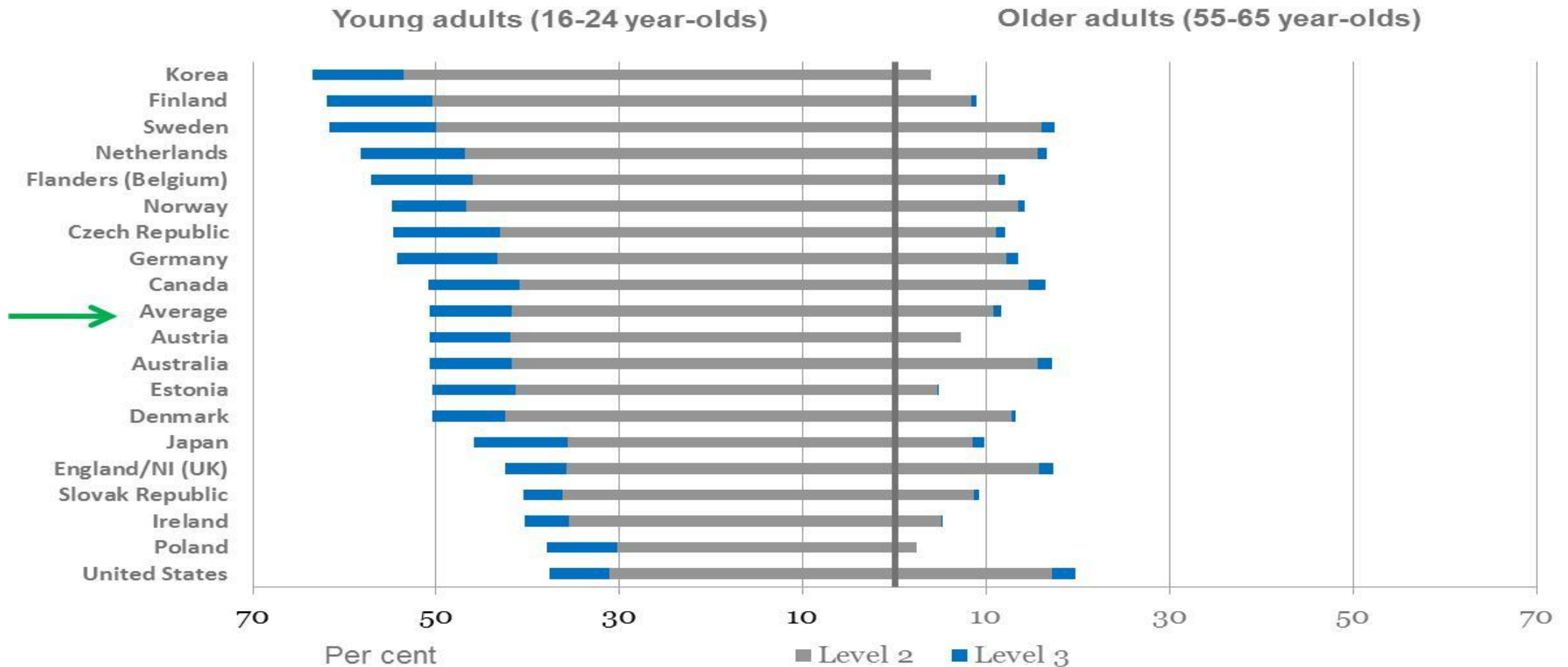
Range of TL2 regional business R&D intensity, 2010



Source: OECD (2013), Regions at a Glance, <http://rag.oecd.org/>

But education is not the same as skills ...

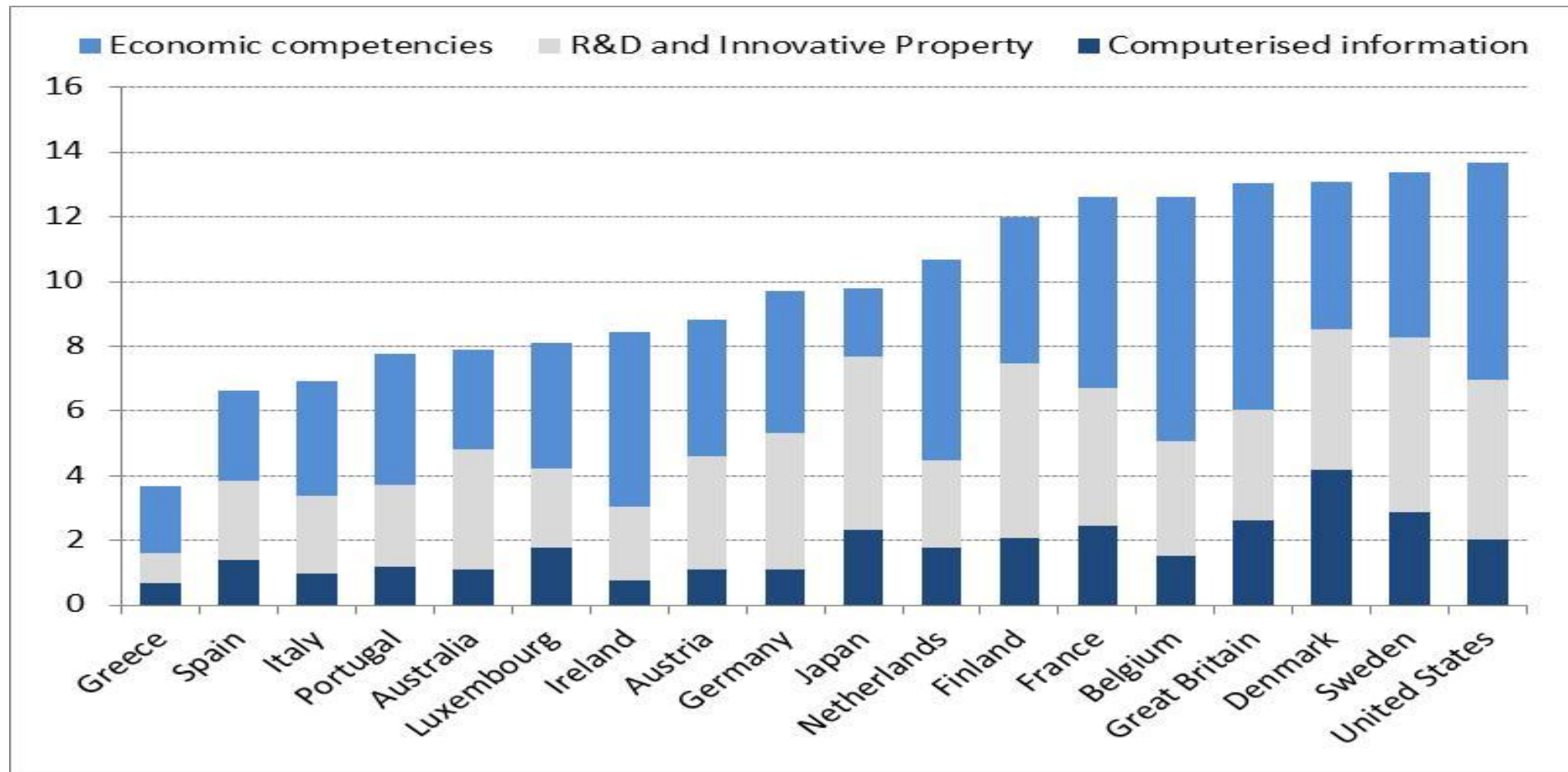
Share of young and old adults at the two highest proficiency levels in “problem solving in technology-rich environments”



Source: OECD Survey of Adult Skills, October 2013.

... and R&D is only one element of investment in innovation

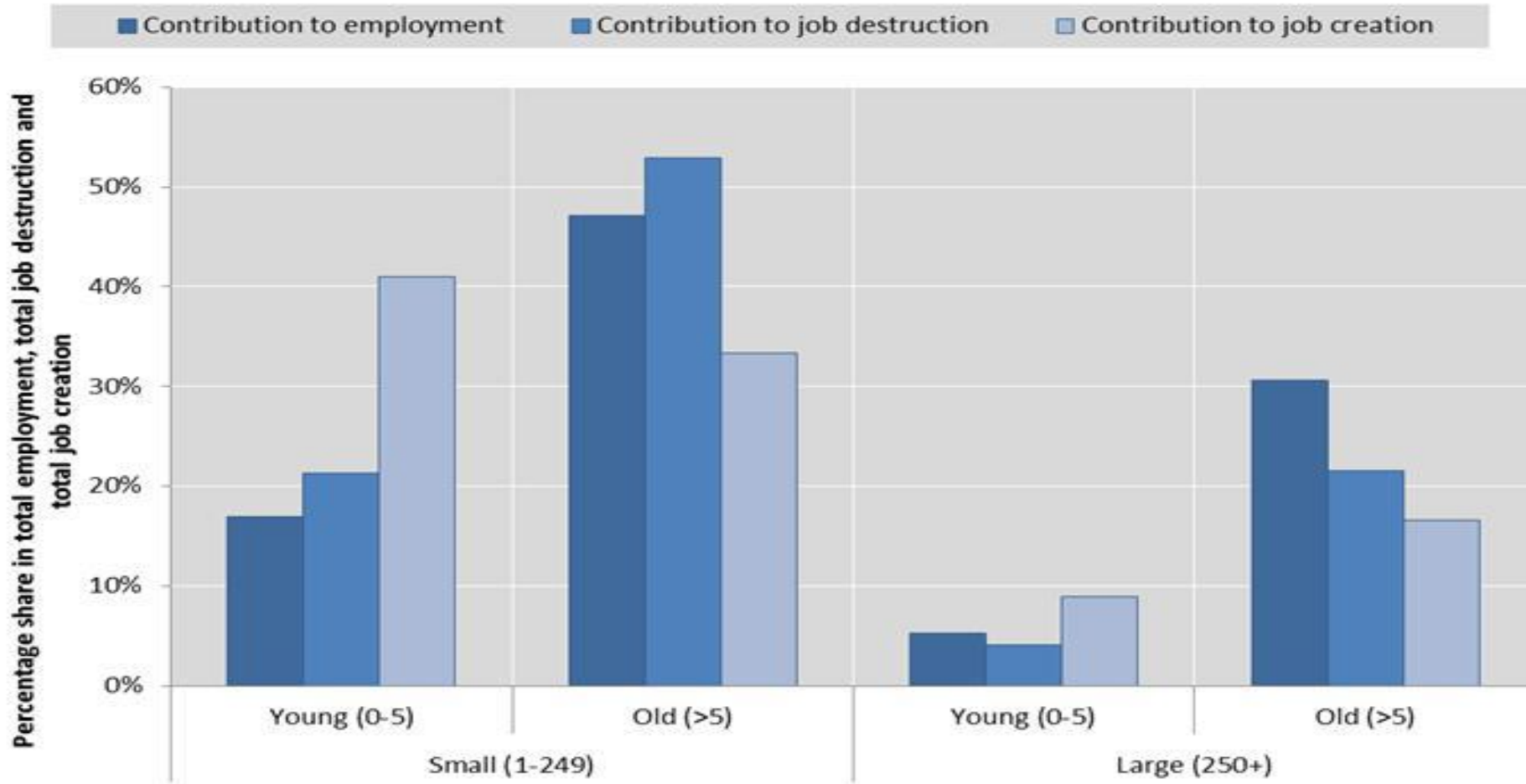
Business investment in knowledge-based assets
(as % of business sector value added, 2010)



Source: OECD calculations based on INTAN-Invest, Eurostat and multiple national sources.

An innovative economy is also about creative destruction ...

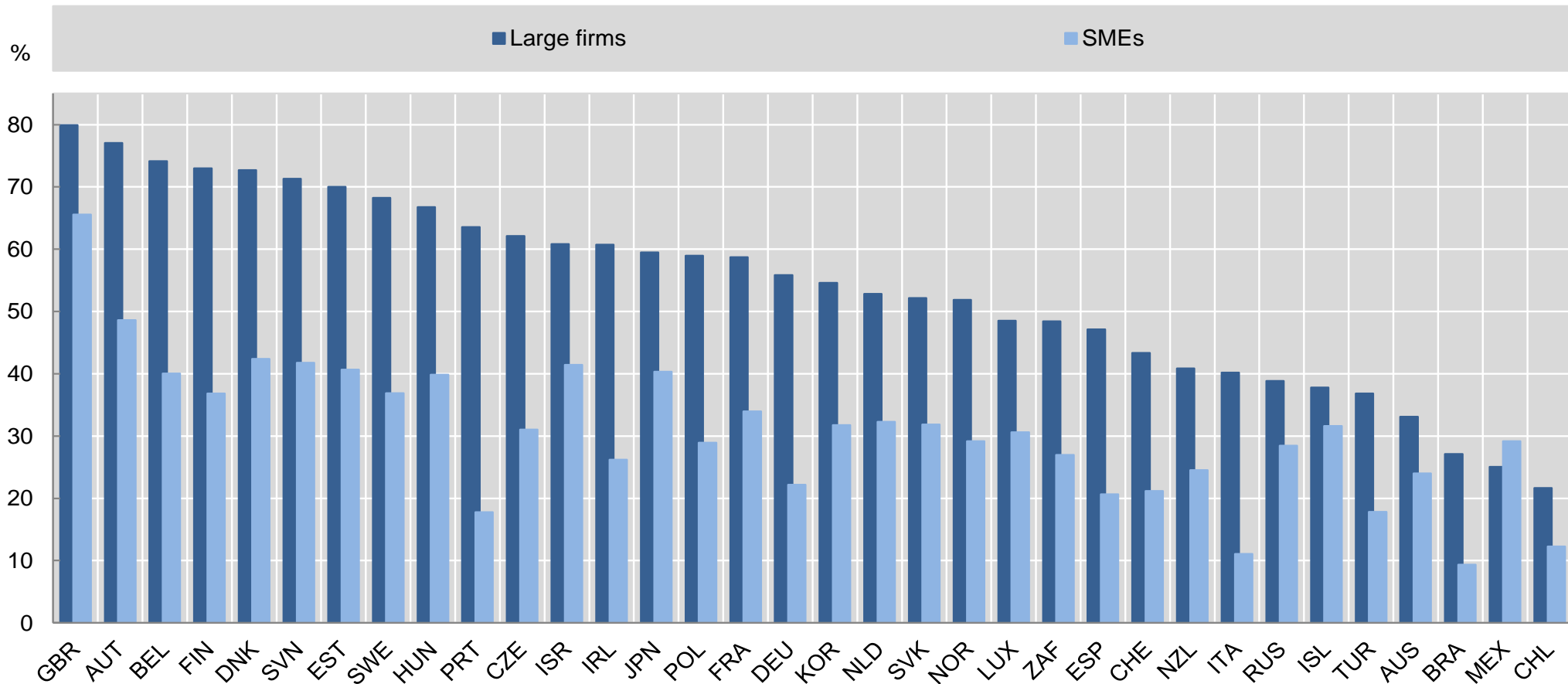
Role of different firms in employment growth, average over 18 countries, 2001-2011, in %



Source: Criscuolo, Gal and Menon (2014), www.oecd.org/sti/dynemp.htm

... and about collaboration

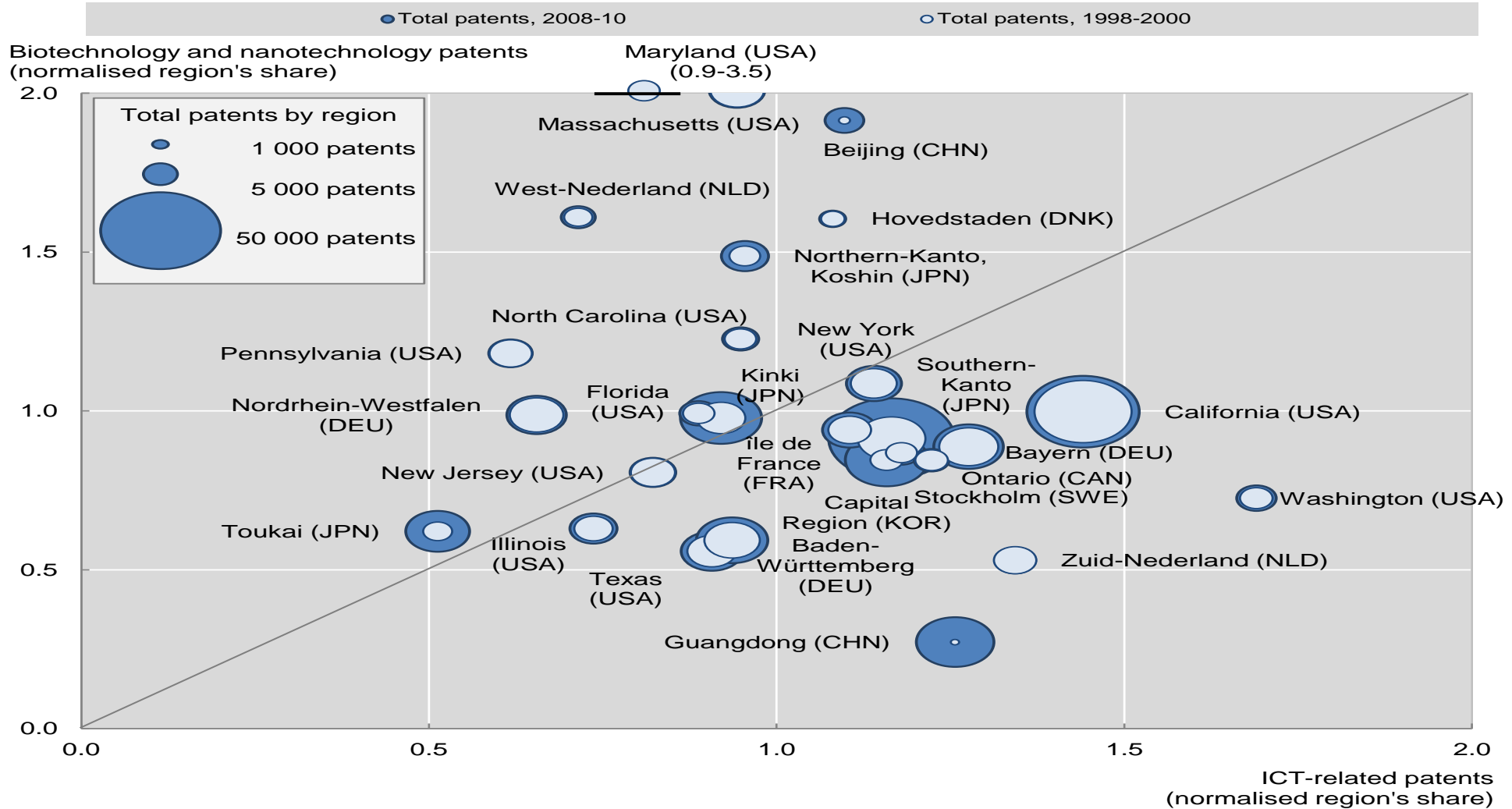
Firms collaborating on innovation activities, by size, 2008-10
(as a % of product and/or process innovative firms in each size category)



Source: OECD Science, Technology and Industry Scoreboard 2013. <http://dx.doi.org/10.1787/888932891321> 8

We have some indicators on innovation outcomes ...

Innovation hotspots in ICT, biotechnology and nanotechnology, 1998-2000 and 2008-10



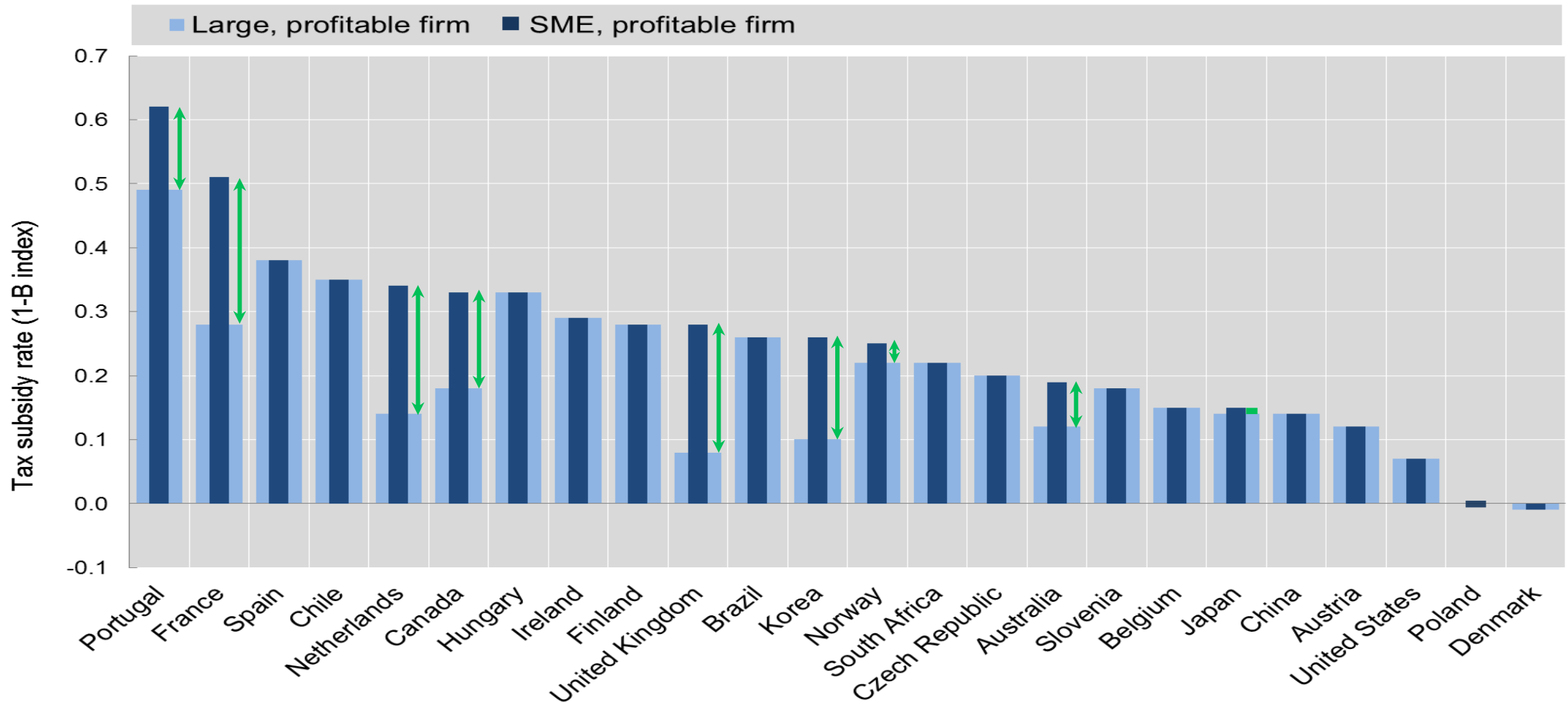
Source: OECD Science, Technology and Industry Scoreboard 2013. <http://dx.doi.org/10.1787/888932890238>

... but lack a good link to impacts

- Ultimately, innovation is about increasing productivity (and thus economic growth), about new job creation, improved health outcomes, greener growth, etc.
- But the links between investment in innovation and these impacts are complex, often not linear and can take a long time to emerge.
- Some progress is being made:
 - R&D is now considered an investment in the national accounts, and therefore part of GDP, enabling a stronger link to economic growth.
 - A lot of work is going on in countries to better understand impacts of science and innovation.

Indicators of innovation policy are lacking, with some exceptions ...

Implied tax subsidy on R&D expenditures, 2013



Source: OECD Science, Technology and Industry Scoreboard 2013. <http://dx.doi.org/10.1787/888932891150>

... and we need a stronger focus on policy evaluation

- Need an explicit commitment – at a high level - to the importance of evaluation.
- Insist on the development of data and evaluation strategies before programmes begin.
- Choose a evaluation technique appropriate to the programme concerned.
- Insist on full disclosure in evaluation reports.
- Robust governance to ensure evaluation is objective and free of political influence.
- Good mechanisms for policy learning.

Smart specialisation – what is it?

- Focus on a limited number of priority areas for knowledge-based investments, linked to a region's strengths and comparative advantages on the basis of:
 - More effective spending of public resources.
 - The creation of synergies between public support mechanisms for R&D and innovation, industrial promotion and training institutions.
 - The elimination of fragmentation and duplication of policy interventions.
 - The identification of the most promising domains for entrepreneurship and growth through a careful analysis of existing capabilities, assets and competences.
 - Mechanisms to enable strategic development.
 - Mapping and benchmarking of clusters.
 - Evidence-based monitoring and evaluation systems.

Smart specialisation – what is required (1)?

- Need for government interventions on a solid market basis – which implies robust framework conditions, that allow market driven allocation of innovation, capital and labour: only competitive and open markets are amenable to innovation.
- Government needs to listen to market signals when allocating its own budgets for innovation - entrepreneurial discovery – interventions should meet the market test.
- Avoid capture by vested interest – which implies transparency, accountability and evaluation of policies.
- Stand ready to terminate projects that don't pass the evaluation test.

Smart specialisation – what is required (2)?

- Strong leadership and stakeholders' involvement.
- Ensuring mechanisms or structures for new 'entrepreneurial bottom-up initiatives' to emerge and to help mobilise the relevant stakeholders.
- Existing quantitative data can provide an overall picture of the situation, but it is limited to past and present specialisation.
- To capture the 'entrepreneurial knowledge' embedded in the region (*e.g.* to identify emerging activities, synergies and complementarities) may require new diagnostic tools.

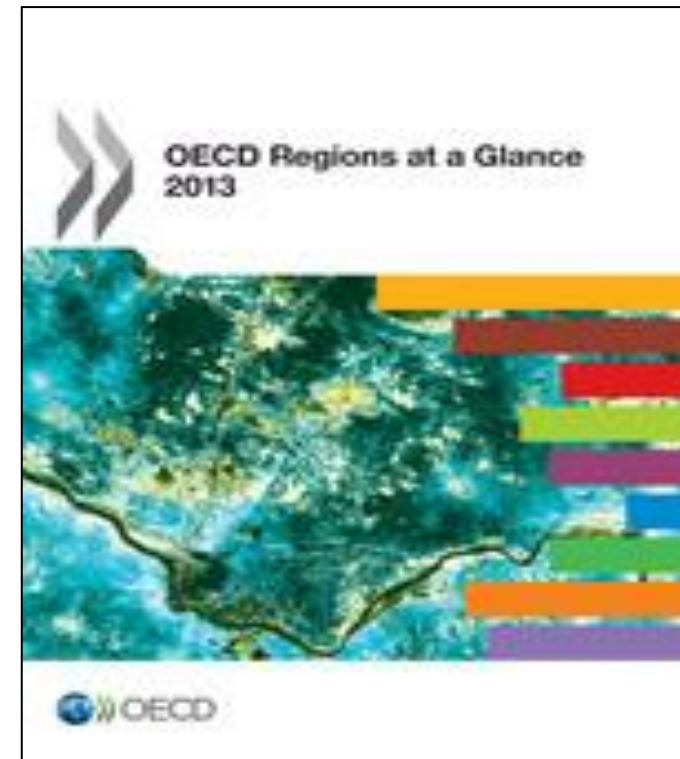
Finally: A measurement (and analysis) agenda to support policies for innovation

- From education to skills – where are the gaps?
- From R&D to the full range of investments in innovation
- Better understanding the dynamics of an innovative economy – understanding the enormous heterogeneity in an economy, across regions, across firms, across ...
- Better indicators of outcomes and impacts – and the link to investment
- Linking policy to performance – better policy indicators, more evaluation
- Complementing quantitative tools with qualitative analysis

For further reading – with all data available on-line



www.oecd.org/sti/scoreboard



www.oecd.org/regional/regions-at-a-glance.htm

Thank you!

Contact: Dirk.Pilat@oecd.org

Read more about our work



Follow us on Twitter:
[@OECDInnovation](https://twitter.com/OECDInnovation)



Website: www.oecd.org/sti

Newsletter: www.oecd.org/sti/news.htm