EIB conference on
Financing Productivity Growth in Europe

Making European innovators more resilient

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CHALLENGES

High expectations for innovation to bring us back to a sustainable growth path

BUT

Europe has consistently failed to exploit its potential for innovation-based growth, despite a series of innovation policy strategies and targets

Some bits of evidence

- In the **Innovation Union Scoreboard**, the EU scores consistently behind the US. China is very quickly improving
  - Latest numbers for 2015 from Eurostat on R&D intensity:
    - The EU R&D intensity level remains unchanged at 2.04% of GDP (in 2014, it was 2.03%)
    - China (with 2.05% in 2014) overtook the EU in R&D intensity
- Europe's gap relative to the US holds across almost all components of innovation capacity (**systemic deficit**)
- **Business R&D intensity** remains far below that in the US, South Korea and Japan and even China

Challenges continued

- Under fiscal consolidation pressures, the post-crisis trend has been for less **public spending on R&D**.
  - This is the case especially in the weaker, innovation-lagging countries that were under fiscal pressure, resulting in an **increasing intra-EU divide in public R&D spending.**

A persistent and growing divide in innovation investments among EU countries

	Corporate Innovation Investment (IUS score)	Pub R&D investment as % GDP
Average EU 2006 2008	0.45	0.51 0.56
Average EU 2013	0.42	0.58
Innovation leaders 2006 2008	0.63	0.80 0.82
Innovation Leaders 2013	0.62	0.94
Performance relative to innovation leaders (=100)		
EU-CEE- 2006 2008	62	48 52
EU-CEE- 2013	49	48
Southern EU – 2006 2008	61	56 65
Southern EU- 2013	50	55

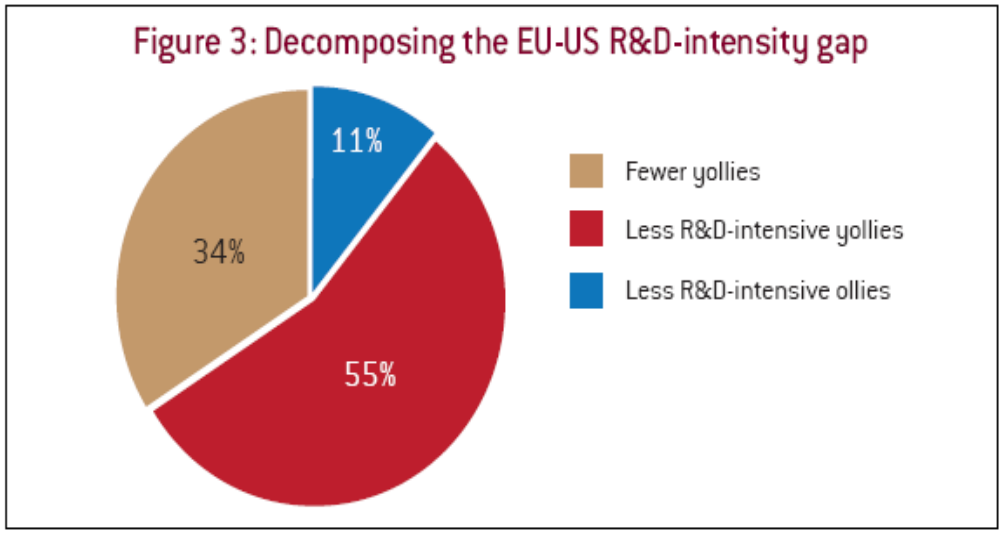
Source: Bruegel on the basis of IUS (2014) and Eurostat (2015).

Diagnosing EU's innovation deficit

The nature of EU's industrial structure is a major reason for the persistent business R&D investment deficit/divide: a deficit in the capacity for creative destruction

- EU fails to specialize in innovation based growth sectors
  - *aerospace, biotech, computer hardware&services, health care equipment & services, internet, pharmaceuticals, semiconductors, software, telecom equipment.*
- EU misses young world leading innovators in innovation based growth sectors

Yollies: young companies who have made it into the R&D scoreboard of world leading innovators : *Amazon, Google, Microsoft, Qualcomm, Amgen…*



	EU	US
Share of Yollies in number of region's leading innovators	23%	51%
R&D intensity of Yollies/Ollies	4%/3%	10%/4%
Share of the region's Yollies in Innovation Based Growth Sectors	62%	84%
R&D intensity of Yollies in Innovation Based Growth Sectors	13.9%	12.6%

Why Europe is missing young innovators in innovation based growth sectors?

A systemic problem:

- Risk-taking financial markets
- Higher (Re-)entry & exit costs
- Inflexible labour markets
- Segmented product markets

- Insufficient linking in “innovation system”
  - Industry science links
  - Large incumbents and small new entrants
  - Public Private partnerships
- Government policy
  - Funding
  - Regulation
- …

- More financially constrained
  - EU Yollies almost 4 times more cash constrained than US Yollies

Source: Cincera, Ravet & Veugelers (2015); **R&D financing constraints of young and old innovation leaders in the EU and the US, *Economics of Innovation and New Technology,***

- Lower rates of return from Innovation
  - For every one euro invested in R&D, a US High Tech Yollie receives 20 cents in terms of additional generated output, c.p.
  - For EU Yollies: 4 cents, non-significantly different from 0

Source: Cincera & Veugelers (2014); **Exploring Europe’s R&D deficit relative to the US: differences in the rates of return to R&D of young leading R&D firms, *Research Policy***

The problem identified; How to remedy?

Remedying the European Union's deficient innovation based growth will require more emphasis to be put on nurturing more new firms in new sectors, enabling them to ***grow to world leading-innovators***.

Address the specific barriers for development of new innovation based growth markets and firms -access to *early risk* financing, access to *frontier science*, access to risk-taking *lead customers and complementary suppliers*, *specialized* know-how and skills

This includes a.o. addressing their **access to external finance**

- Young radical innovators, lacking collateral, reputation and with high-risk profile, even more affected by imperfections in capital markets
- Young radical innovators can be expected to be affected disproportionally by low growth prospects
  - *Aghion et al (2007) show that in recessions when there is a higher bankruptcy risk, the negative effect of credit constraints on R&D investment is exacerbated for firms at higher risk of bankruptcy*

On the funding escalator, **risk capital** is a critical finance source at the early phase of scaling up to global commercialization and growth.

- The VC market in Europe is far less developed than in the US
- The VC market has been crisis hit, particularly in Europe and for the higher risk early stage projects

To effectively address access to finance for young leading innovators:

- Have a broader innovation policy to ensure a sufficient supply of profitable projects to fund.
- Have an interconnected set of policy instruments at each stage of the ‘funding escalator‘
  - Complementarity with public R&D grants, support for angel funding, loans, …
- Government should not replace/crowd out, but leverage private market forces

- Developing a viable “thick” VC market is a long term project: no quick fixes
  - *In early stages, high vulnerability for (crisis)shocks*
- Beyond the quantity of VC available, what matters more is how effective the market allocates funds to the most promising projects: “smart” VC funding, which requires “thick” markets with seasoned funders
- Not fall into the ‘local is beautiful’ trap : an integrated and open VC market.
  - Remove barriers to operate at European scale
  - Remove barriers for global operations (in- and outward)
- Not fall into the 'small and short is beautiful' trap.
  - Remove barriers to grow for VC firms

A close monitoring of emerging innovative markets

Experimenting with new policy initiatives

Evaluating, evaluating, evaluating…