

# US-EU Innovation Gap

Can Government policy make a difference?

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# EU-US Innovation Gap

Policymakers' concerns about persisting US v EU “gaps” in (i) productivity, (ii) innovation (patents, firm surveys, hi-tech exports), (iii) R&D and Human Capital.

Are US Support instruments (e.g. SBIR) **replicable** in the EU? e.g. “European SBIR” focus only on Phase III (procurement) but don't they overlook Phases I and II?

Classical debates between US *laissez faire* and EU's proactive **industrial polices** in light of apparent success of China's industrial policies.



# EU-US Productivity, Innovation and R&D Gaps – definitions, policy relevance



- Measures: Old days  $TFP=INNO$  or  $R\&D=INNO$ ;  
Today:  $INNO$  = new product in surveys, patents, exports
- Why measure gaps? Nothing like jealousy to motivate policy makers to make brave decisions: welcome Wal-Mart or Chinese science graduates to stay ("blue cards")
- Why not compare to US, not China? Can EU learn from China how to innovate?



# Study Outline

- **Chapter 1:** Introduction
- **Chapter 2:** The gap -- statistical evidence
- **Chapter 3:** Case studies evidence: web (Google, Apple, Facebook, Amazon, Skype, XING), robotics, E-paper and display technologies. Role of government – or lack thereof – in the emergence of Web subsectors in the US vs., EU?

# Study Outline (2)

- **Chapter 4** Bridging the Gap with Instruments: Are US Instruments (SBIR) replicable in the EU?
- **Chapter 5:** Bridging the Gap with Policies (business environment , human capital)
- **Annex:** Are INNO support instruments effective? Econometric literature review



# Bridging the Gap: my chosen three

1. Public vs. Private Financing
2. Business Environment (e.g. IPR)
3. Human capital migration, mobility

Footnote: For selection criteria, compare to Mowery (2009) and Bruegel (2011). Bruegel chose limited access to finance; Failing IPR and (iii) Failing ecosystems. (Bruno van Pottelsberghe, Nicolas Véron and Reinhilde Veugelers)



# Chapter 2 --- EU specialized in low/med R&D intensity sectors



EU is less R&D intensive than US, Japan or Asian Tigers.  
Not less R&D intensive **within** sectors but rather having different sectoral composition

EU is specialized in sectors with low or medium R&D intensity, while US, Japan and Asian Tigers are more oriented on higher R&D intensive sectors.

Does it follow that innovation policy should target sectors?  
Wait...



Source: EU-US Productivity and R&D Investment Gap (A firm-sector-level Analysis) Federico Biagi and Juraj Stancik Institute for Prospective Technological Studies Joint Research Centre European Commission (Seville, Spain)

# Chapter 3: Methodology – Case Studies



- Objective: micro study of INNO gap in subsectors to learn whether and how policy can bridge gap.
- Case studies vs. econometrics (Howard Pack)
- Google: Is it possible to build into Europe's institutions tolerance of unconventional behavior by brilliant people?
- Stanford University's tolerance of Page and Brin who consumed half of Stanford's entire network bandwidth





# Chapter 3: Business Environment in Case Studies



- ***Could Amazon have been started in Europe?***
- Business services: e.g. low cost parcel carriers in competition with the incumbent post office
- Variable tax and business conditions across the EU compared to uniformity in USA
- Downsizing continually; fire low rated employees: but in EU - protective labor laws



# Chapter 5: Innovation/ Industrial Policy

## - Sector neutrality vs. targeting



- EU is specialized in low or medium R&D intensity sectors →→???
- →sector targeting.
- Aghion (2011) implies that **sector-targeting** is needed to compensate for low levels of asset tangibility of hi-tech SMEs but falls short of recommending firm-level targeting
- Sector targeting is NOT logical conclusion of credit market failure. It can be addressed by **horizontal or neutral** matching grants to qualified applications in all sectors.
- If governments insist on targeting, targeting "hi tech" is "second best", but **picking the high tech companies is "third best" or worse.**



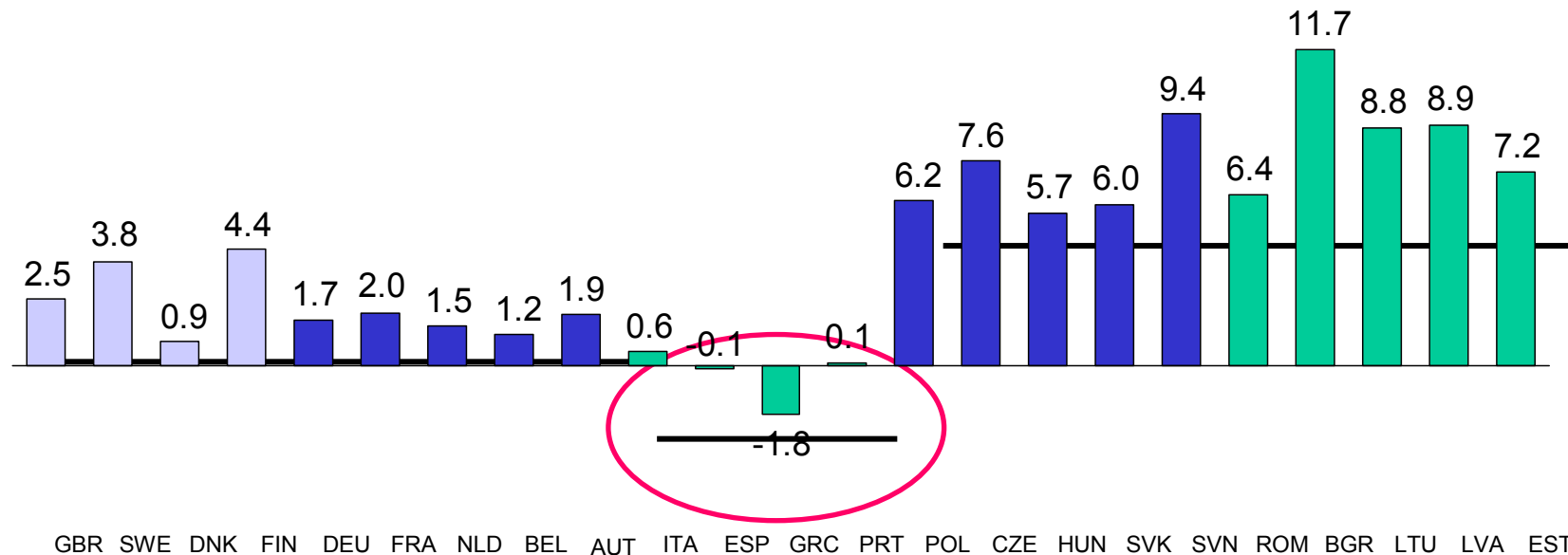
# Absorption or Innovation?



- Minister of Finance: what's the right proportion of absorption/innovation?.
- New to the world? New to EU-North or to EU-South or to EU-East? New to a firm?
- In EU-12 Structural Funds provide significant support for absorption in small medium and large enterprises via grants.



... while EU12 catches up, EU15 South is left behind  
(2002-2007 average annual growth in productivity)



• Does EU-15 South need support for absorption rather than innovation?

