

# **Innovative Clusters:**

***An international view of how to get economic  
growth from academic knowledge centres***

***Richard L. Hudson***  
***CEO & Editor***

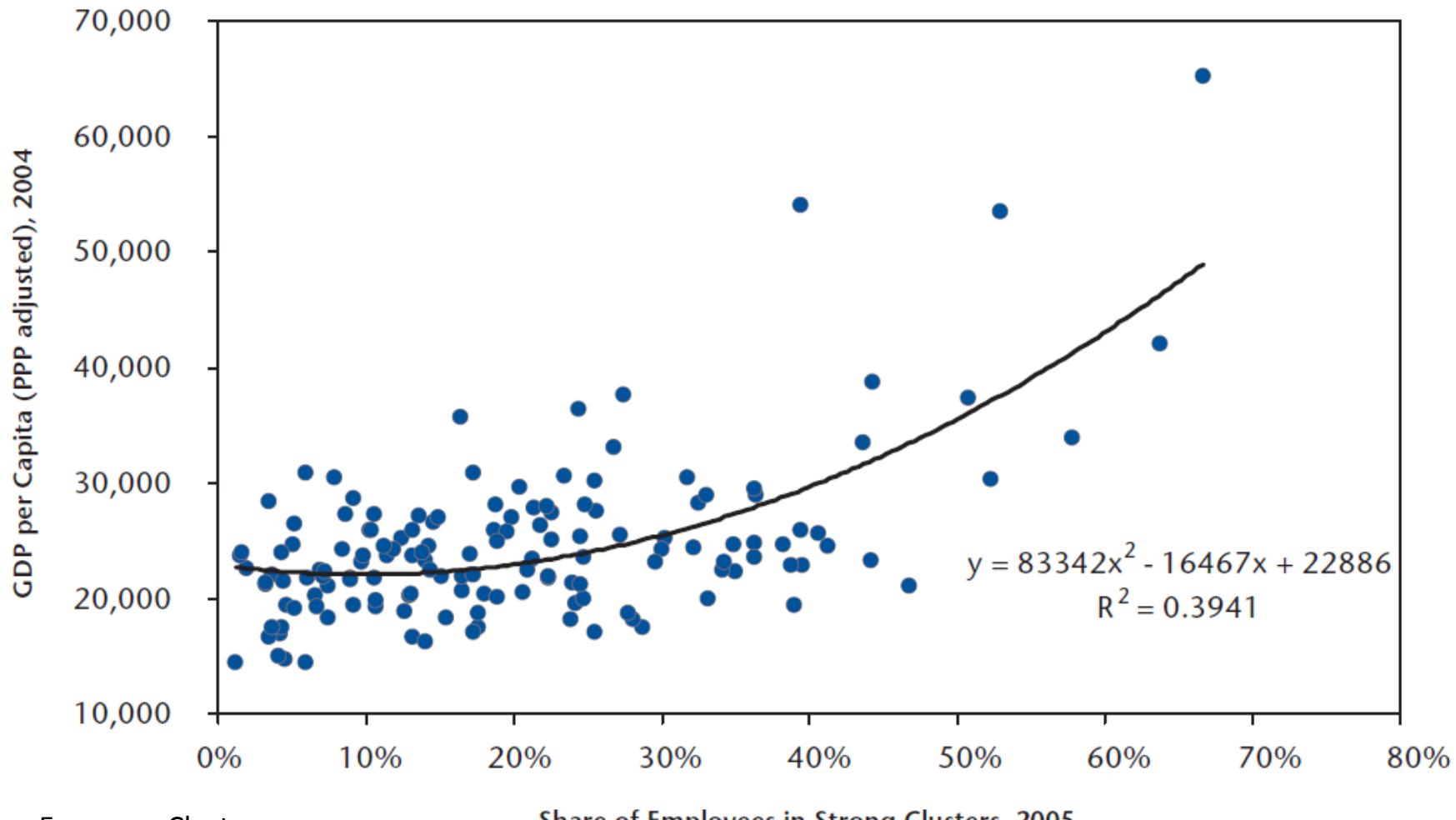
**SCIENCE | BUSINESS**

# The Science | Business Network

Europe's leading innovation community

- 42 members
  - Cambridge, Imperial, Karolinska, ETH, KULeuven, Bologna, INSEAD...
  - Sanofi, Microsoft, GE, SKF, Biogen, Dow, Toyota, Huawei, Boeing...
- Top-level networking: 15+ public and private meetings/year
  - Sept. 29: SME Finance, Brussels
  - Oct. 20: Industry 4.0, Brussels
- Innovation intelligence: [www.sciencebusiness.net](http://www.sciencebusiness.net) news briefings
- Tech transfer: Academic Enterprise Awards (Nov. 20, Barcelona)
- Policy leadership: Science | Business Innovation Board AISBL
- Communications consulting
  - ERC, EIT, CERN, BP, EuropaBio, GE, Microsoft...

# Strong clusters are associated with strong growth



Source: European Cluster Observatory, 2008

Share of Employees in Strong Clusters, 2005



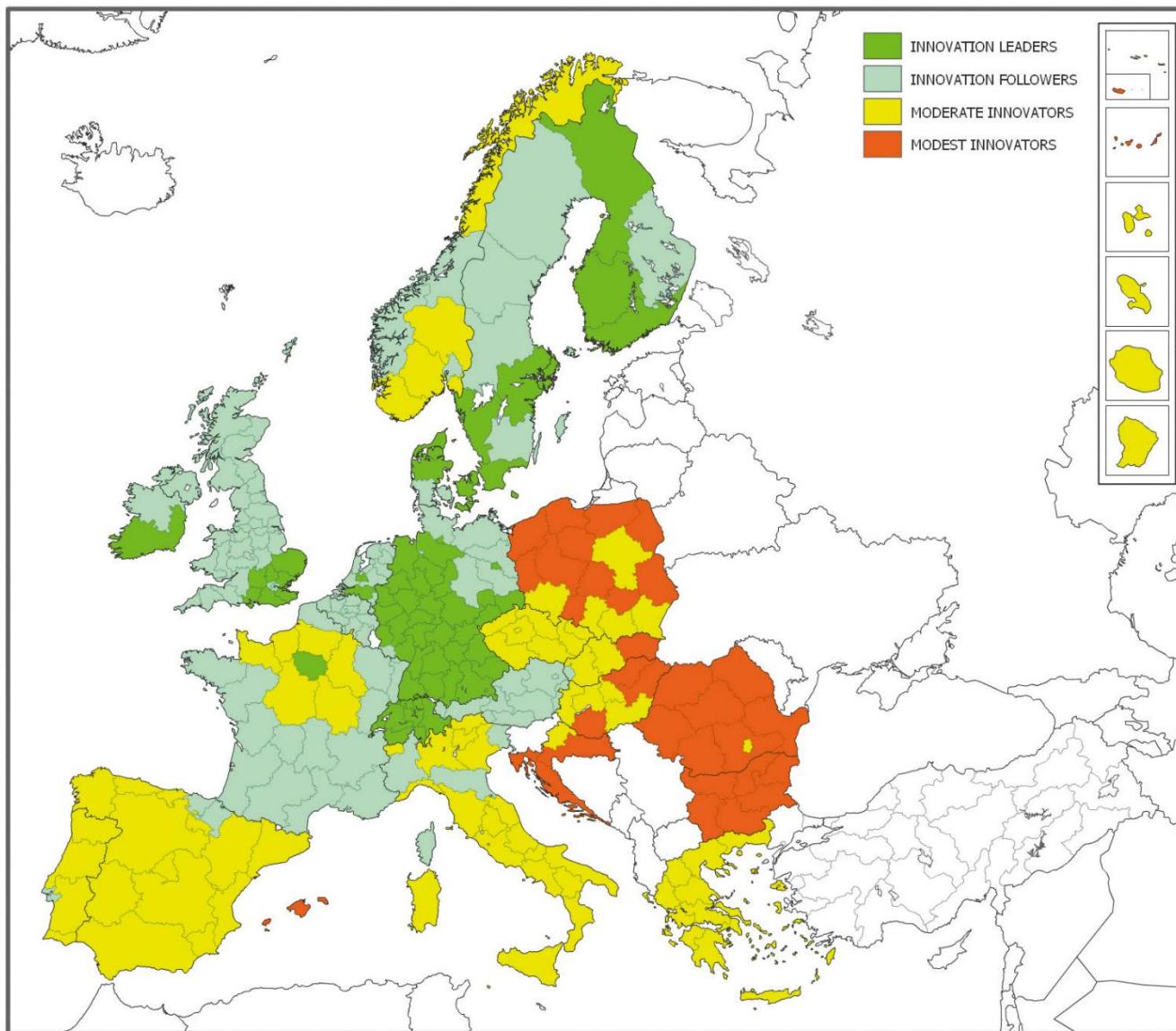
## The MIT cluster

- 25,800 spin-outs
- 3.3 million employed
- \$2 trillion in revenues
- 11<sup>th</sup>-largest economy

- Attracting talent: 90% of students from out of state, but 38% of the spinouts stay in the state with revenues of \$164 billion
- Formal entrepreneurial support began in 1970s – integrated into curricula, faculty, TTO, student clubs, competitions

*Source: Kauffman Foundation study 2009*

# EU innovation leaders and laggards



# Silicon Fen

- 57K employed in 1,500 technology-based firms with combined annual revenue £13 billion
- Of the 1,500, the university has backed 300 hi-tech and 200-computer based companies (which earn £250m between them) with more than a £1bn of funding and it also owns the IP on more than 1,000 patents

Source: Cambridge Enterprise



- **Notable companies:**
  - ARM Ltd
  - ABCAM plc
  - Autonomy (now merged)
  - CSR plc
  - Domino printing sciences plc
  - Xaar
  - Microsoft European research lab HQ
  - Toshiba European research lab HQ
  - AstraZeneca global R&D & corporate HQ



## ICT

- **22,000** ICT companies, employ **200,000**
- Billion-dollar companies with origins in Stockholm:
  - Spotify - (KTH)
  - Klarna (School of Economics)
  - King (School of Economics)
  - Mojang (now Microsoft)
  - Mysql (Finnish-Swedish)

# Stockholm-Uppsala

## Life Sciences

- Revenue: €10.6 billion
- 611 companies, 23,000 employed
- 124,000 students, 25,000 researchers
- 60% of all Swedish university research in life sciences
- A third of all EU life science projects have partners from this cluster

# Silicon Allee

## Spinouts

- Free University: 2006 to 2013 about **100 companies** have been founded with support of tech transfer service *profund*
- Humboldt-University: Tech transfer unit Humboldt-Innovation has been involved in 50+ spin-outs since 2005

Source: Berlin Partner

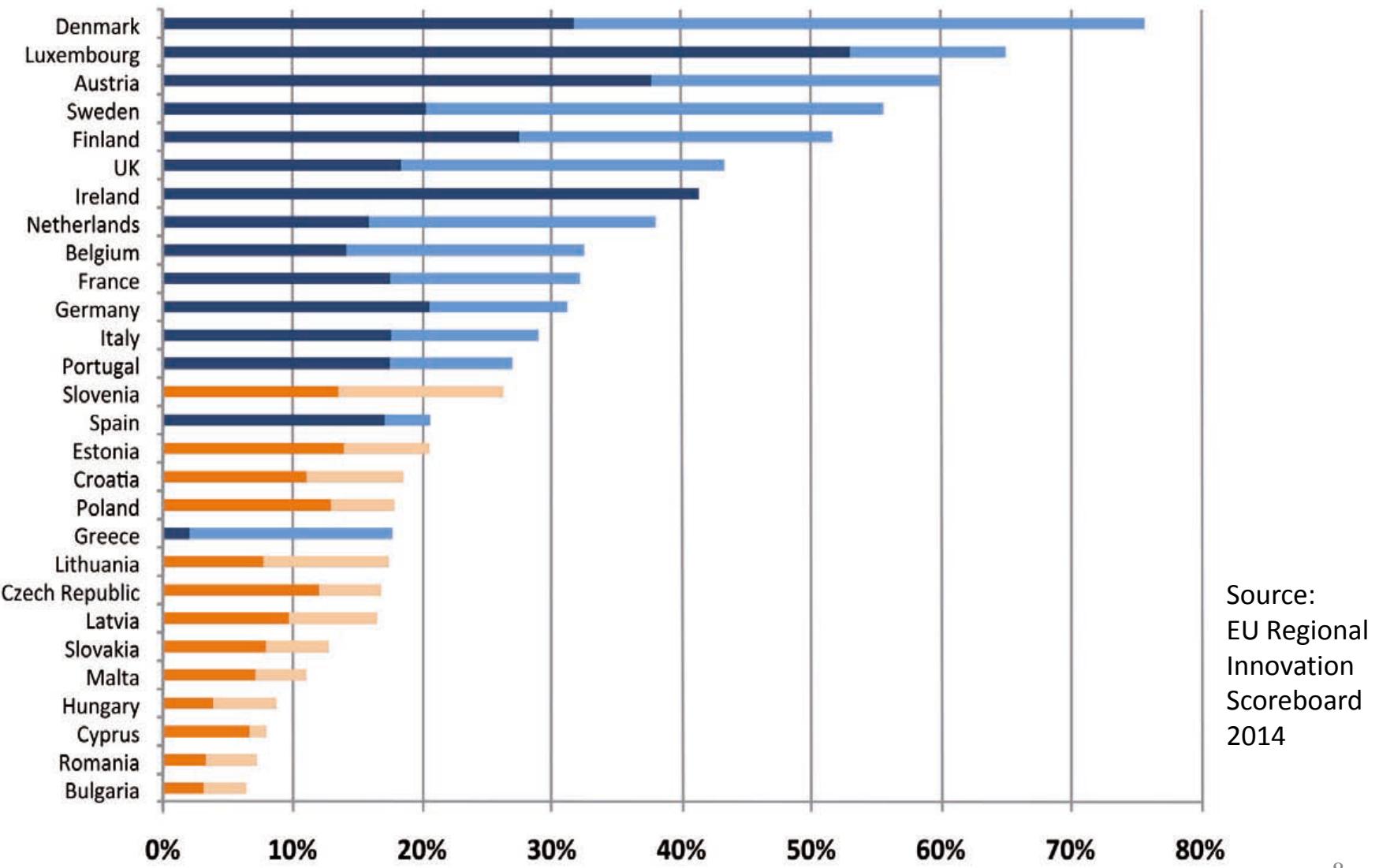


## The Berlin economy – generally

- Energy: 75,000 employed, revenue €17 billion
- Life sciences: 313,700 employed, €6 billion
- Photonics: 4,000 employed, €2 billion
- ICT, creative: 300,000 employed, €30 billion

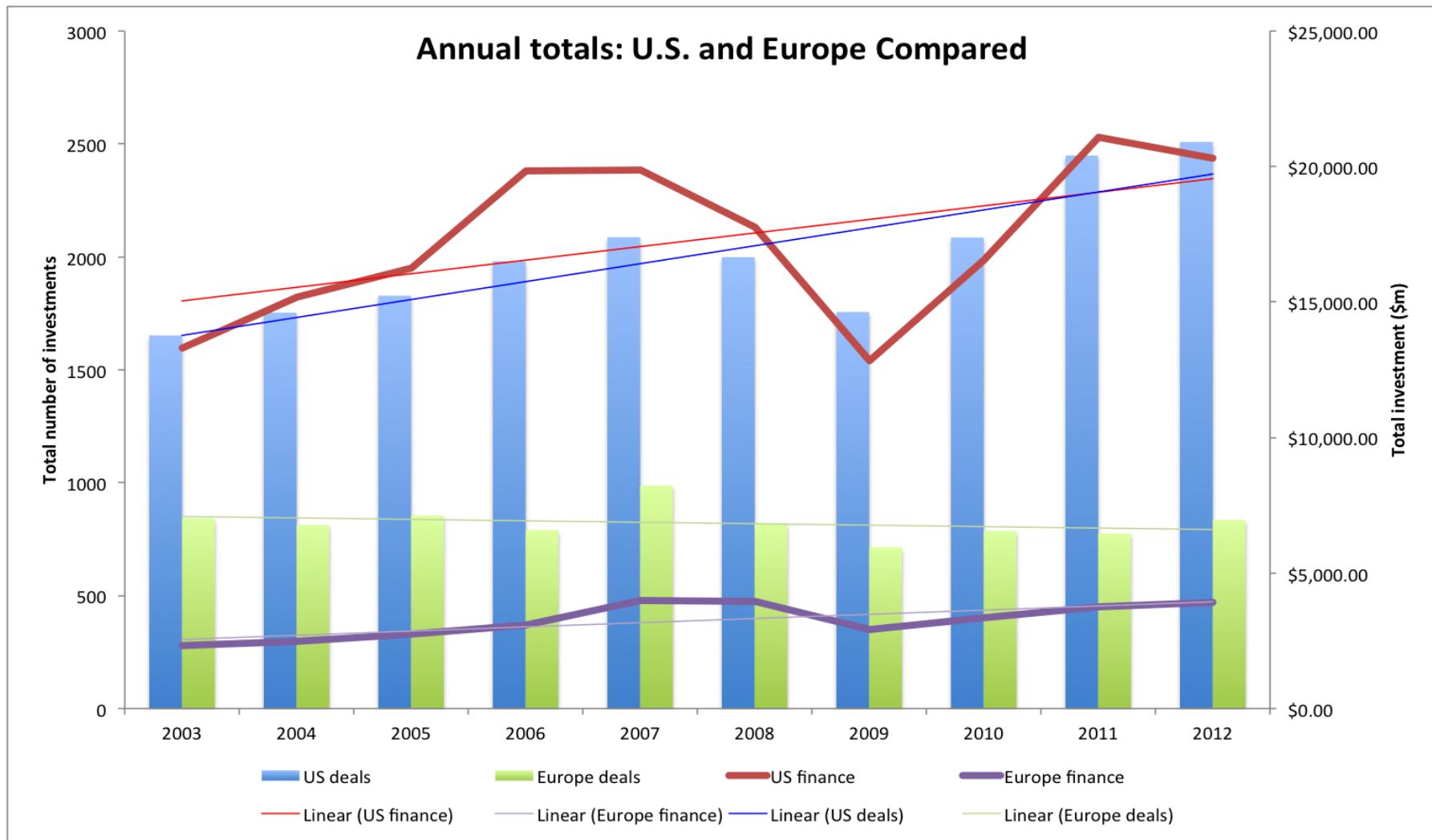
# Do the rich spend smarter?

## Share of structural funds applied to RTDI projects



# Venture capital: US v EU

## Annual venture fundings



Source: Venturewire 2013

# What does it take?

- Great science and knowledge centres
  - Spend more on research: Academic excellence the *sine qua non*
  - Greater autonomy for university management to experiment
- Dynamic entrepreneurs
  - Lead a change in culture – K-12 (as in KVAB report)
  - Expand enterprise programmes at universities (but incubation is only a part of the answer)
- Money: more, and smarter
  - Cut SME costs: As in KVAB report, high social charges a problem
  - Devote 10% of structural funds to inter-region competition
  - Liberalise pension funds to allow more risk-investment
- Open markets: Scale up demand
  - Focus on demand-side stimulus, e.g. public procurement
  - The Single Market must go deeper and broader