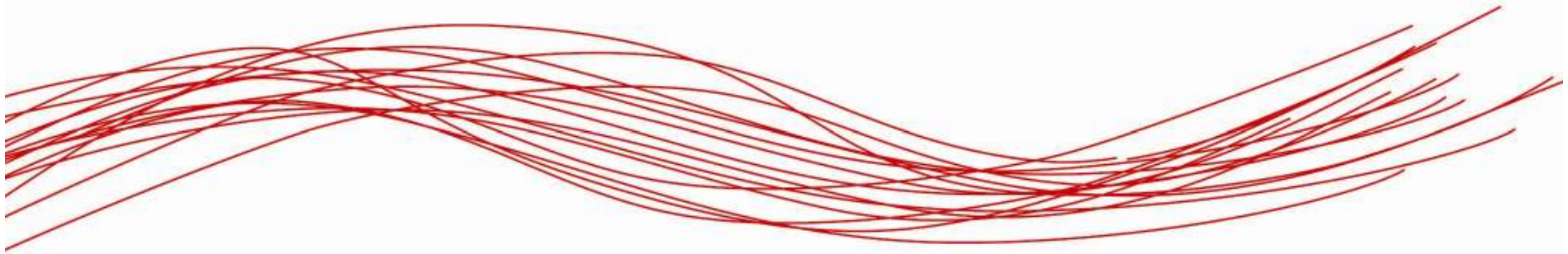


European Business Services Round Table Brussels, 23 March 2011

EU Research and Innovation



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EU innovation gap: Key figures

	EU-27	US	Japan
Tertiary educated population (% of population aged 25-34)	34	42	54
Expenditure on R&D (% of GDP)	2.0	2.8	3.4
Public-private co-publications (per million population) ⁽¹⁾	36	70	56
Patents invented (per billion GDP in PPS€) ⁽²⁾	4	4.3	8.3
Medium-high- and high-tech product exports (% of total product exports)	47	59	75
License and patent revenues from abroad (% of GDP)	0.2	0.6	0.5

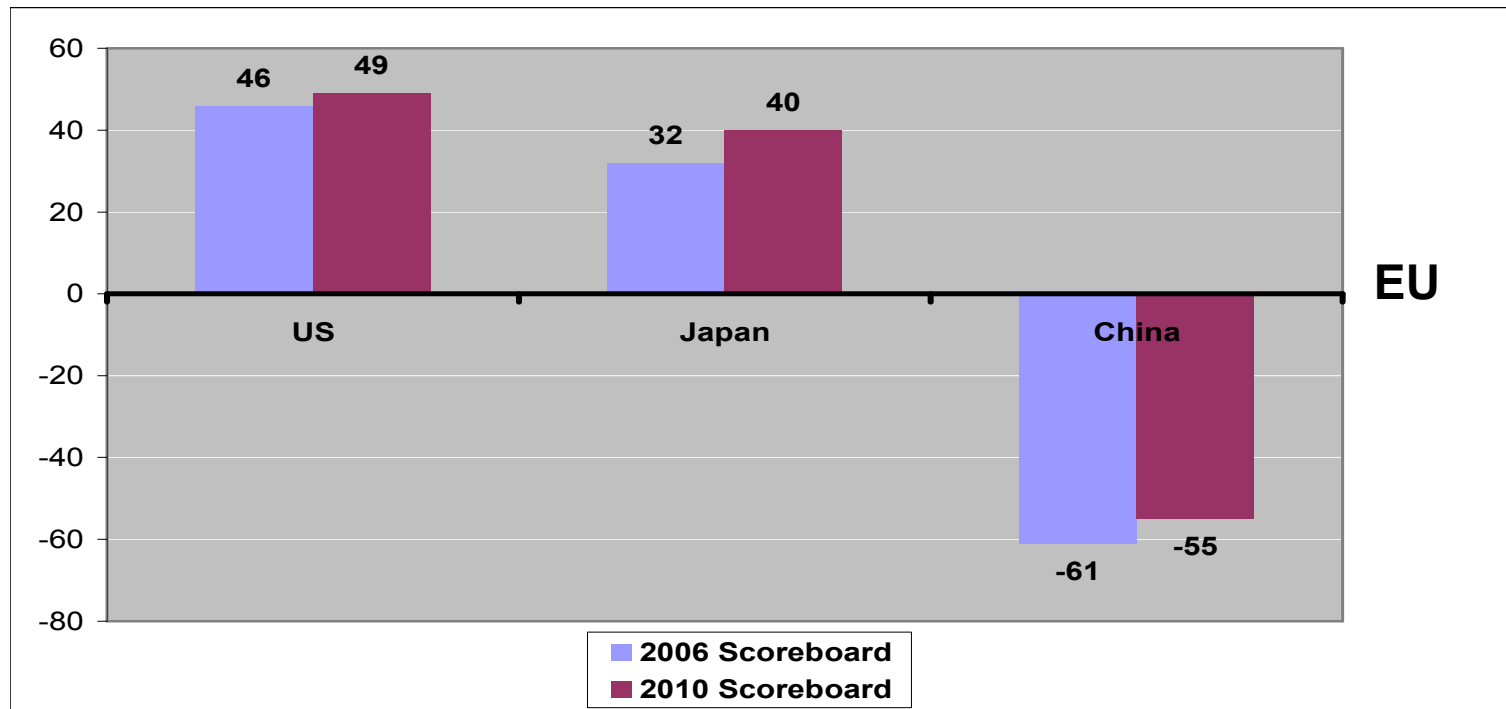
(1) Nr. of scientific publications with at least one author based in a public research institution and one author based in the private sector. Publications are assigned to the country in which the business companies or other private sector organisations are located. This number of public-private co-authored research publications is normalized by the population (in million inhabitants).

(2) Patent Cooperation Treaty patent applications by residence country of inventor

Source: Innovation Union Scoreboard 2010,



Research and innovation performance EU, US, Japan, China



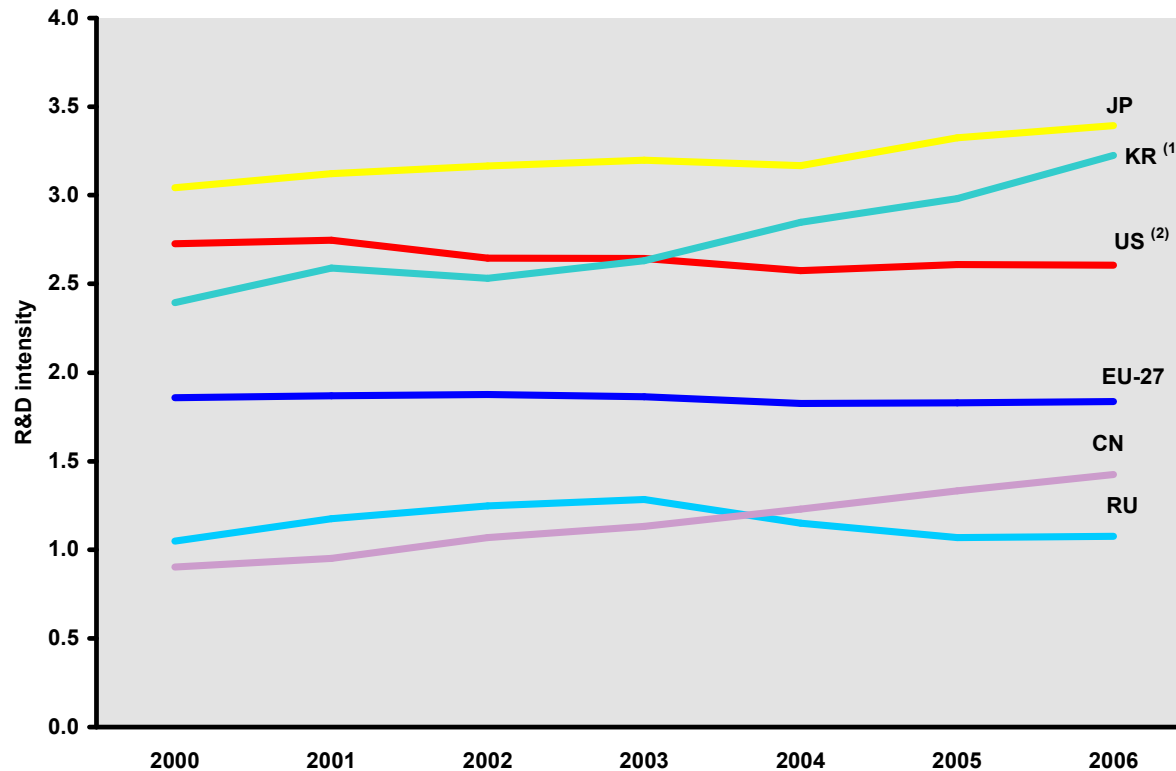
Based on agreed scoreboards, the US is steadily performing nearly 50% better than the EU27. China's performance is still 55% below the EU27 but is catching up

Source: Innovation Union Scoreboard 2010



R&D intensity

Figure I.1.2 Evolution of R&D intensity, 2000-2006



EU R&D intensity has remained almost constant these last ten years while Chinese and Korean R&D intensity has increased by more than 50%

Source: DG Research

Data: Eurostat, OECD

Notes: (1) KR : GERD does not include R&D in the social sciences and humanities.

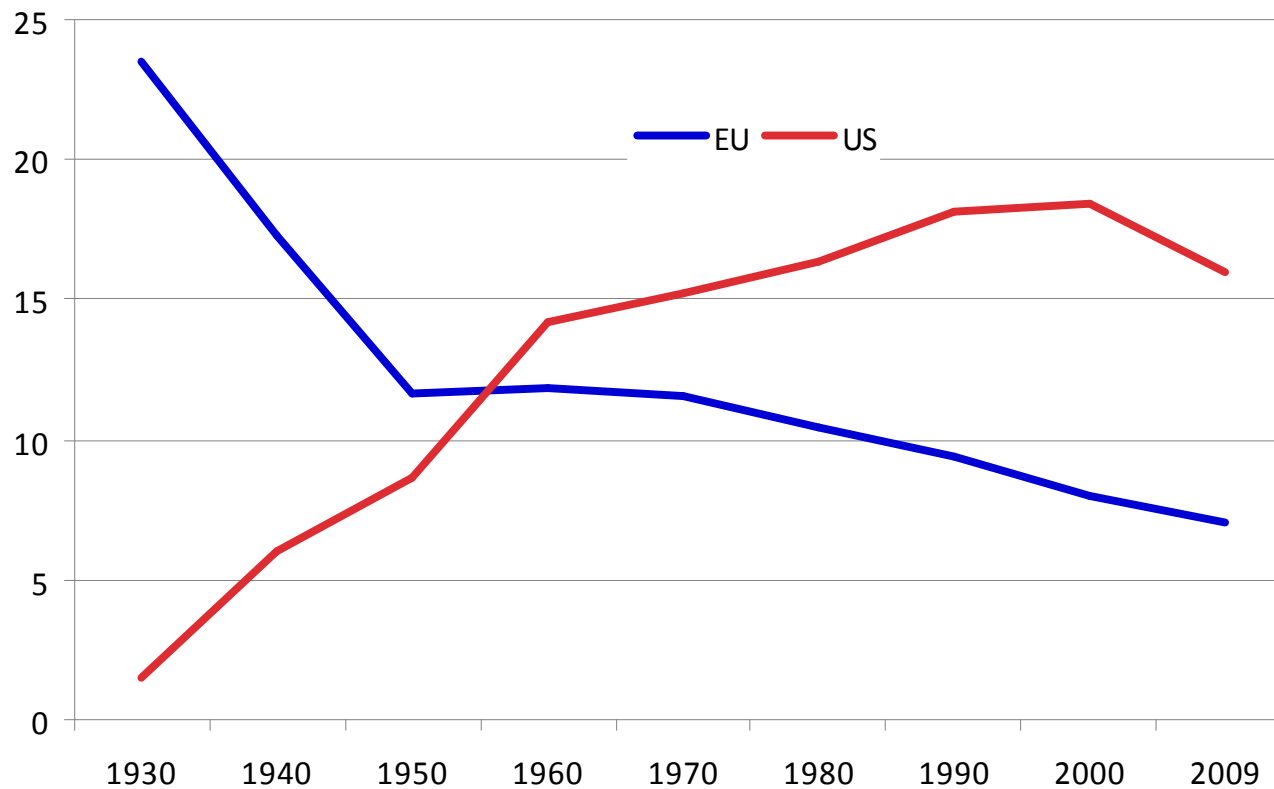
(2) US : GERD does not include most or all capital expenditure.

Key Figures 2008

Source: STC key figures report 2008/2009



Nobel Prize winners*

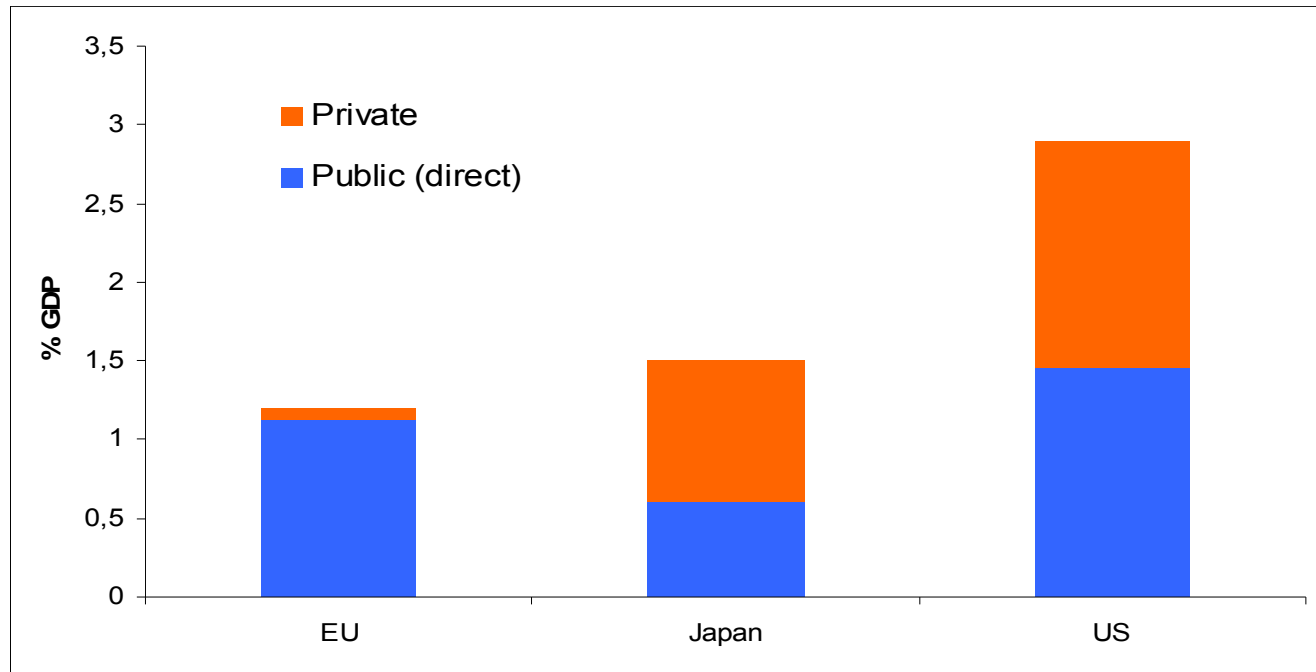


* Physics, Chemistry and Medicine

Source: European Commission elaboration based on data source Jürgen Schmidhuber, 2010



Expenditure on tertiary education (% GDP)

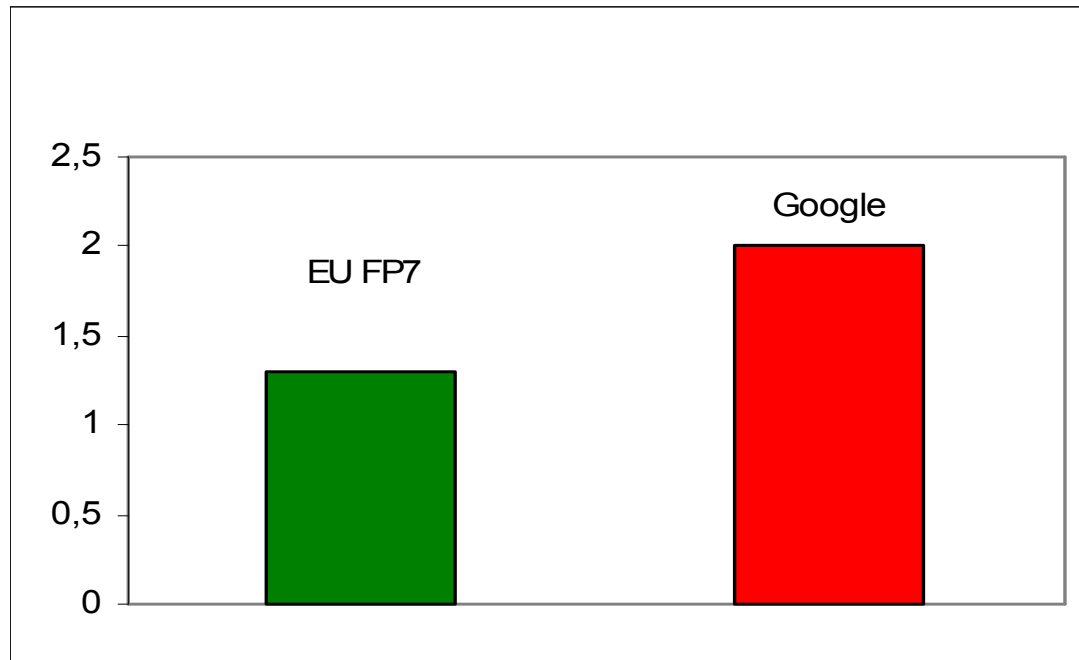


Total spending on tertiary education in the EU (as a % of GDP) is less than half the US level, mainly as a result of lower private spending in Europe

Source: European Commission



Investment in ICT R&D in 2009 (billions €)



The EU Framework Programme for Research (FP7) invests about 1.3 billion € in ICT R&D every year. In 2009, Google alone invested € 2 bn in R&D

Source: European Commission



Turning the eyes

Most of the efforts these last 30 years in R&D were directly linked to industrial policies. In Europe:

- **In the eighties, the eyes were turned towards Japan: technology push (cf. "Framework Programme")**
- **In 2000, the eyes were turned towards USA: competitiveness push (cf. Lisbon Strategy)**
- **Today: Europe 2020 Strategy – Smart, sustainable and inclusive growth**



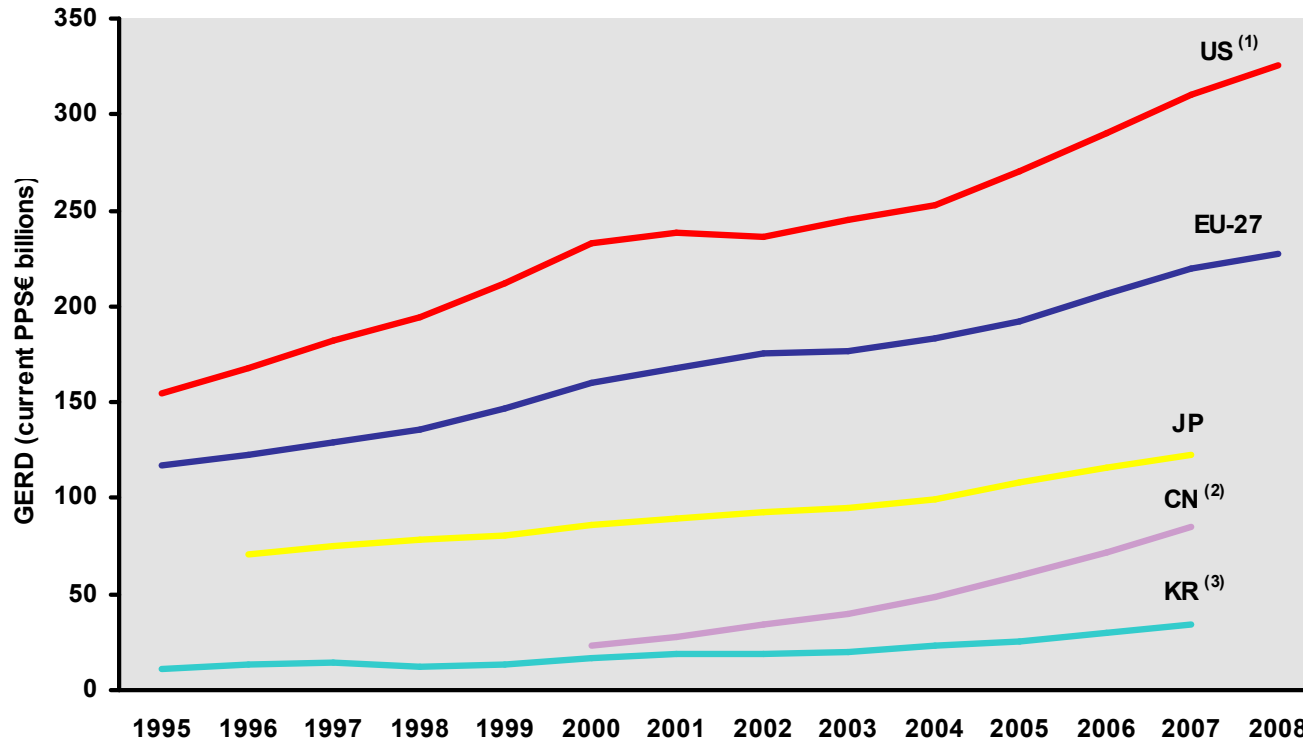
European Research and innovation

- **Third EU policy in budgetary terms (after CAP and Structural funds including more and more RTD&I)**
- **FP7: Major instrument for intensification of EU research collaboration**
- **RTD&I as a major instrument to recover the crisis effects**
- **3% R&D target**
- **Broad concept of innovation (including social innovation)**



R&D expenditure

Evolution of GERD (current PPSE billions), 1995-2008

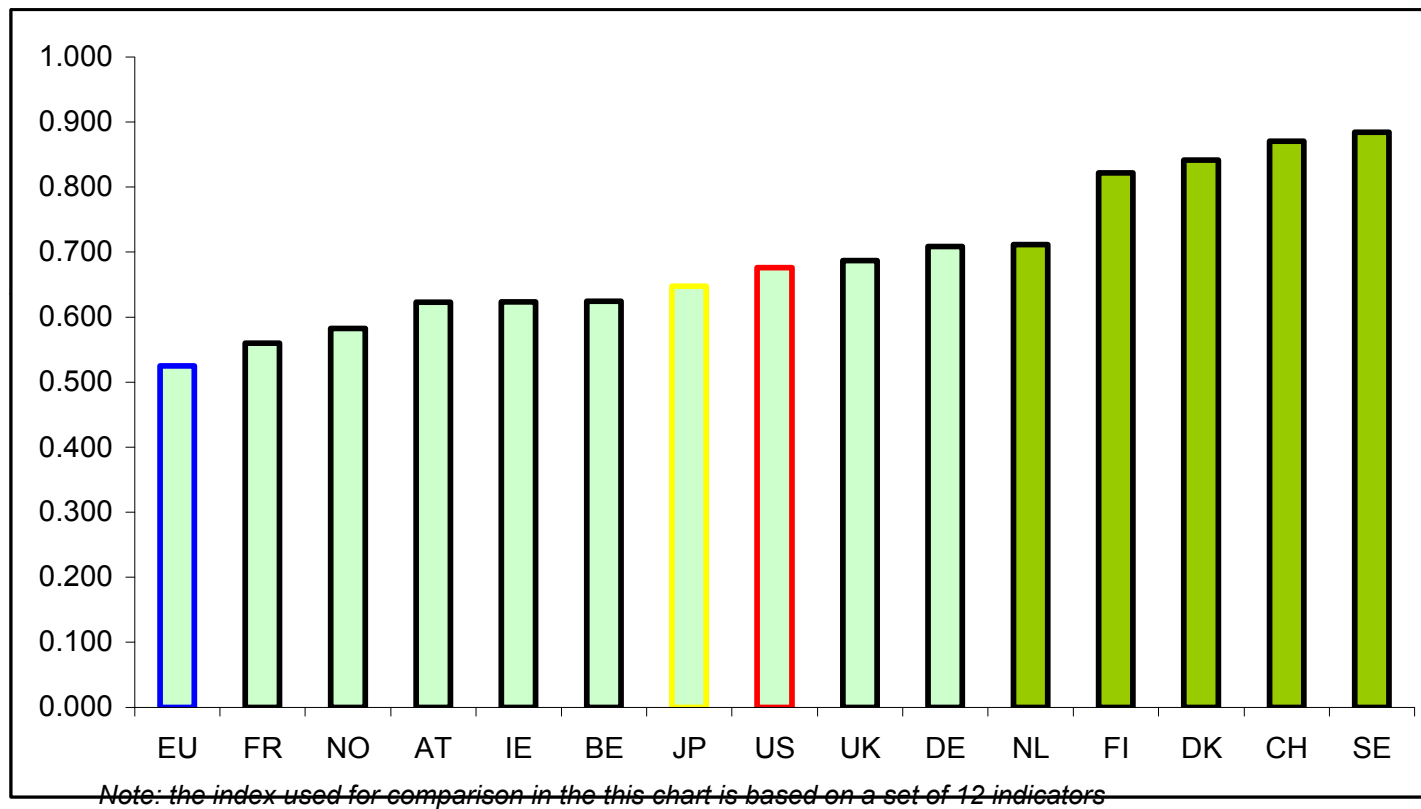


R&D has almost doubled these last 15 years in the EU and the USA. R&D has more than tripled in China. EU R&D accounts for more than € 200 billions. In 2008, EU accounted for 24% of the world R&D expenditure 33% for the USA; 12% for Japan; 11% for China

Source: STC key figures report 2009/2010



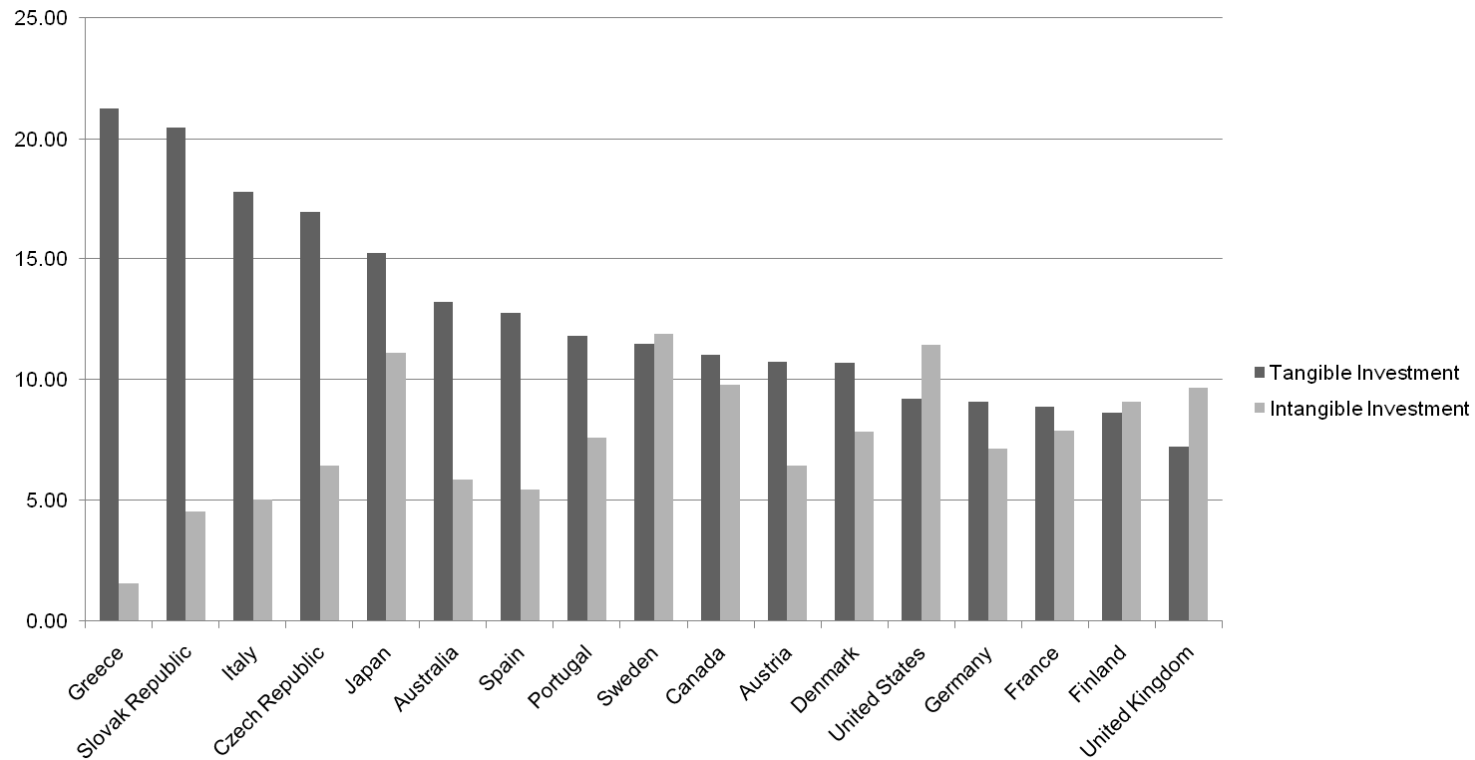
Some of the best R&I performing countries are Europeans



Source: Innovation Union Scoreboard 2010,



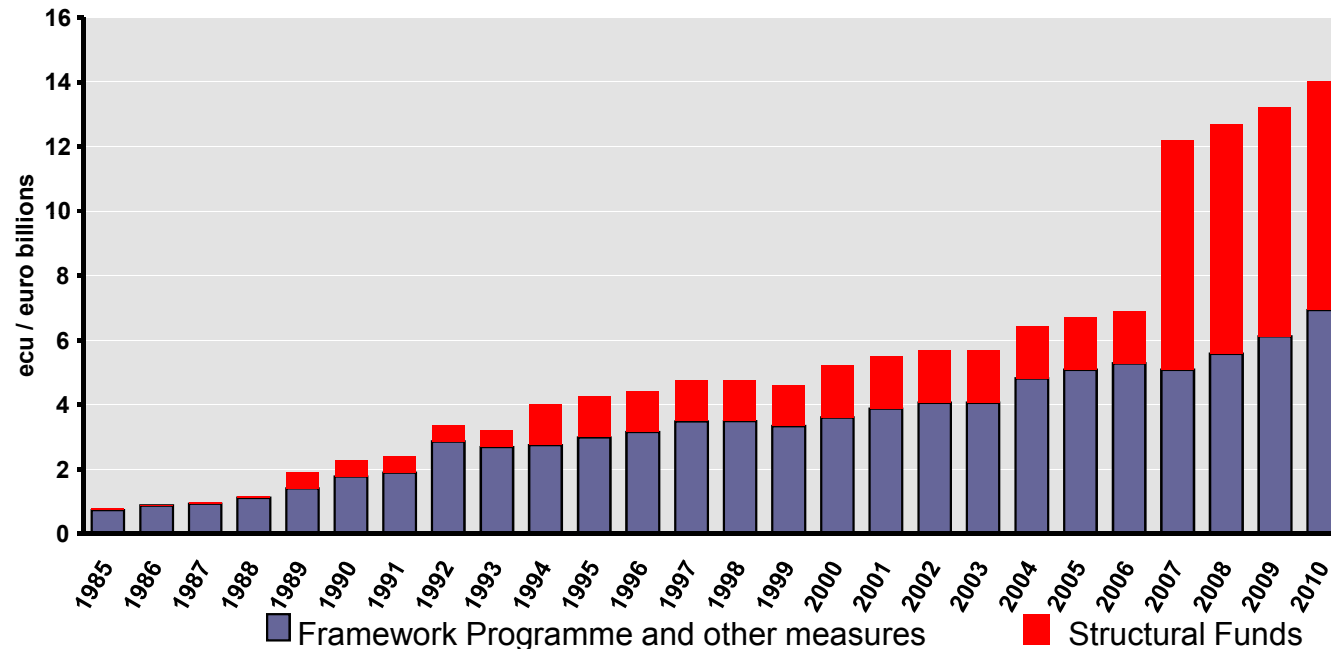
Tangible and Intangible investments 2006 - (% market sector GDP)



Source: DG RTD, COINVEST project (J. Haskel)



Evolution of EU funding of R&D and innovation (in billion euro)



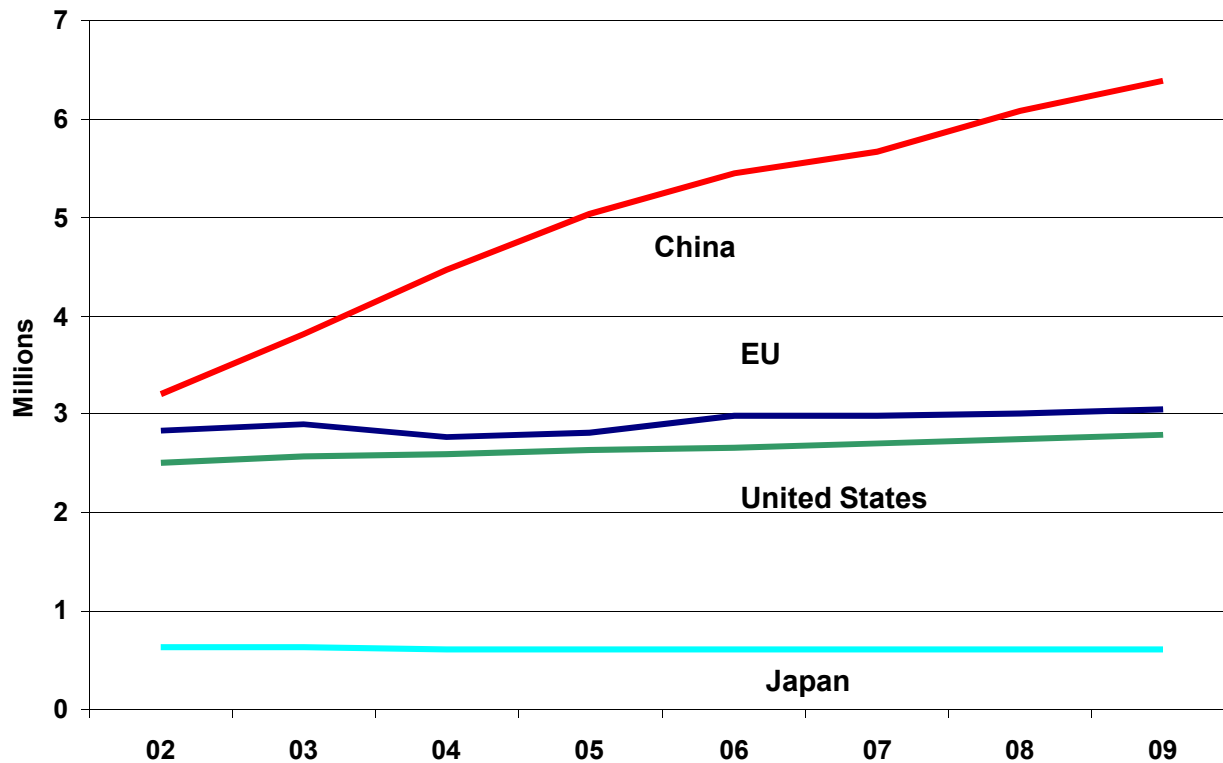
Source: European Commission



Rising Asia and socio-ecological transition



Number of undergraduate students



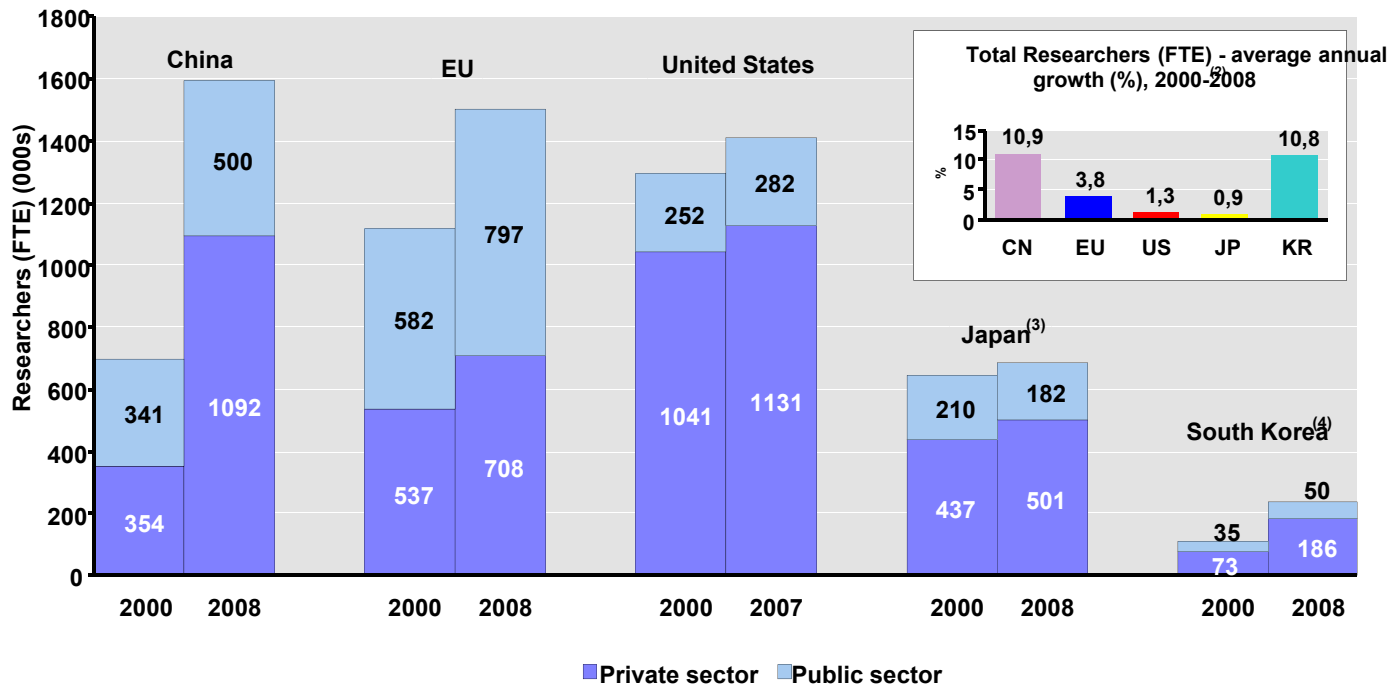
Figures for 2008-2009 for EU+US+JP are estimates

China is enrolling more students than EU, US and Japan combined

Sources: DG Research, Eurostat, National Statistics of China, 2010



Number of researchers (FTE)

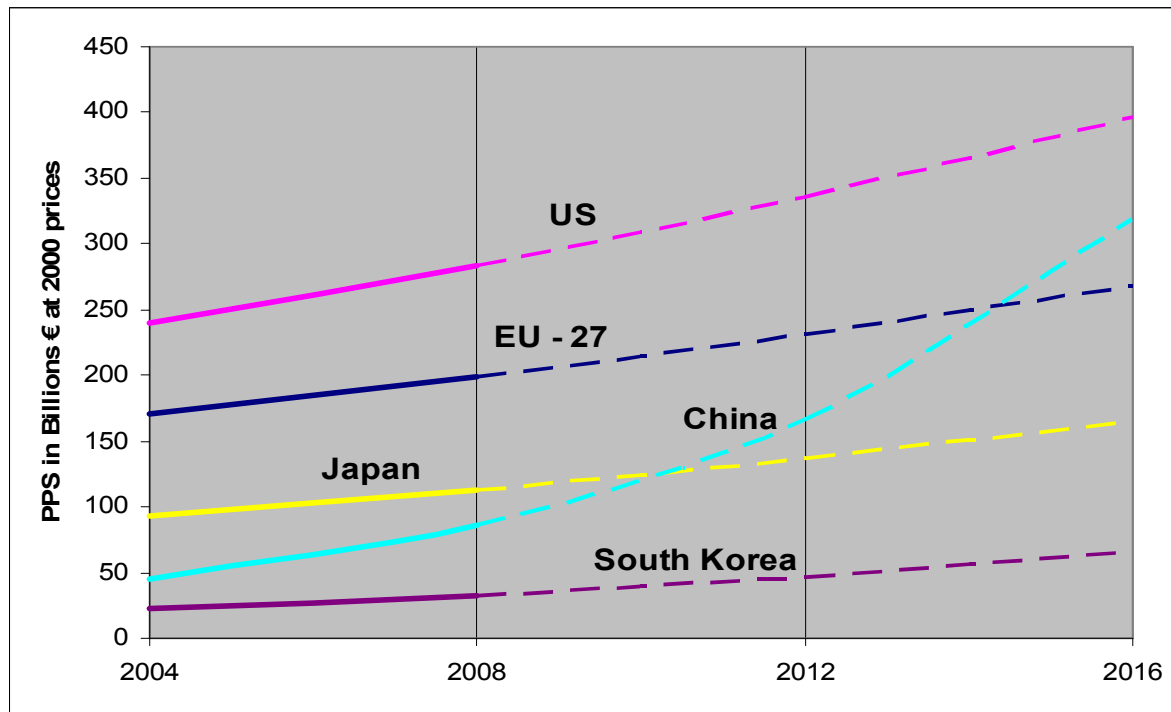


In 2008, China employed about 1.6 million researchers, compared to about 1.5 million in the EU. Trends over time and differences in the share of private and public sectors are also significant

Source: DG RTD – RIC report 2011, data from Eurostat, OECD



Evolution of world R&D expenditure



Note: (China excluding Hong-Kong)

The US spends most on R&D whilst emerging economies are quickly catching up. On current trends, China is set to overtake the EU by 2014

Source: European Commission



Innovation Union

Europe 2020 Flagship Initiative

- **EC Communication, 6 October 2010 – COM(2010)546 - Objectives: Improving performance at EU level by:**
 - Focusing on major societal challenges and win-win situations
 - Pooling resources and reducing fragmentation
 - Removing obstacles and enhancing mobility
 - Research and innovation friendly regulatory frameworks
 - Common standards
 - Coherent packages of supply and demand instruments
 - International cooperation
- **Creativity, skills, patents, freedom of knowledge, innovation single market are also addressed in IU**



IU and societal challenges

- **Tackle major societal challenges whilst creating new business opportunities for EU industry**
- **Loosely coordinated national responses are unrealistic**
 - No single country can tackle them alone
 - Individual countries are reluctant to bear costs alone when they cannot appropriate all the benefits
 - Uncoordinated efforts are likely to be costly and duplicative
- **Pilot European Innovation Partnership in the field of active and healthy ageing with concrete targets (e.g. raising our citizens' healthy life years by two in 2020)**



Standards & IPR are key



GSM = Europe world leader
(EU-funded R&D; common EU standard set quickly; a single legal framework)



Wi-Fi = Europe follower
(EU-funded R&D but too slow process for setting an EU standard => result = non-EU, industry-driven, standard has become market leader)



Some existing Socio-economic Sciences and Humanities (SSH) projects

- **Research on productivity measurement (EU KLEMS)**
- **Evaluation of R&D and innovation impact (DEMETER)**
- **Research on entrepreneurship (AEGIS, INNO S&T)**
- **Services economy and social entrepreneurship (SERVPPIN and SELUSI)**
- **Impact of Corporate Social Responsibility (IMPACT)**
- **Measurement of intangibles and services (INNODRIVE, COINVEST, SERVICEGAP)**
- **Financing entrepreneurial ventures (VICO)**
- **Forward looking activities, including at sectorial level (PACT, WORLD IN 2025)**
- **New and improved databases (WIOD) and models (PASHMINA)**



Some upcoming research projects (2011 SSH Call)

- **Lifelong learning in Europe: appropriate skills for sustaining better jobs**
- **Europe moving towards a new path of economic growth and social development**
- **Social platform on innovative social services**
- **New innovation processes including Social innovation**
- **Beyond GDP – Measuring economic performance and social progress**
- **Forward visions of the European Research Area**



Conclusion: Innovation and Services

- **Technological innovation**
But the value of manufactured products is increasingly based on intangibles
- **Social innovation and demand-side innovation**
Importance of customer's-employee interface, marketing and organisational innovation
- **Open innovation**
Firms do not develop innovation in a closed system
- **Global innovation**
Not only the production but also the innovation networks are now globalized

