



Investing in the Knowledge Economy

Why? Who? How Much? What Benefits?

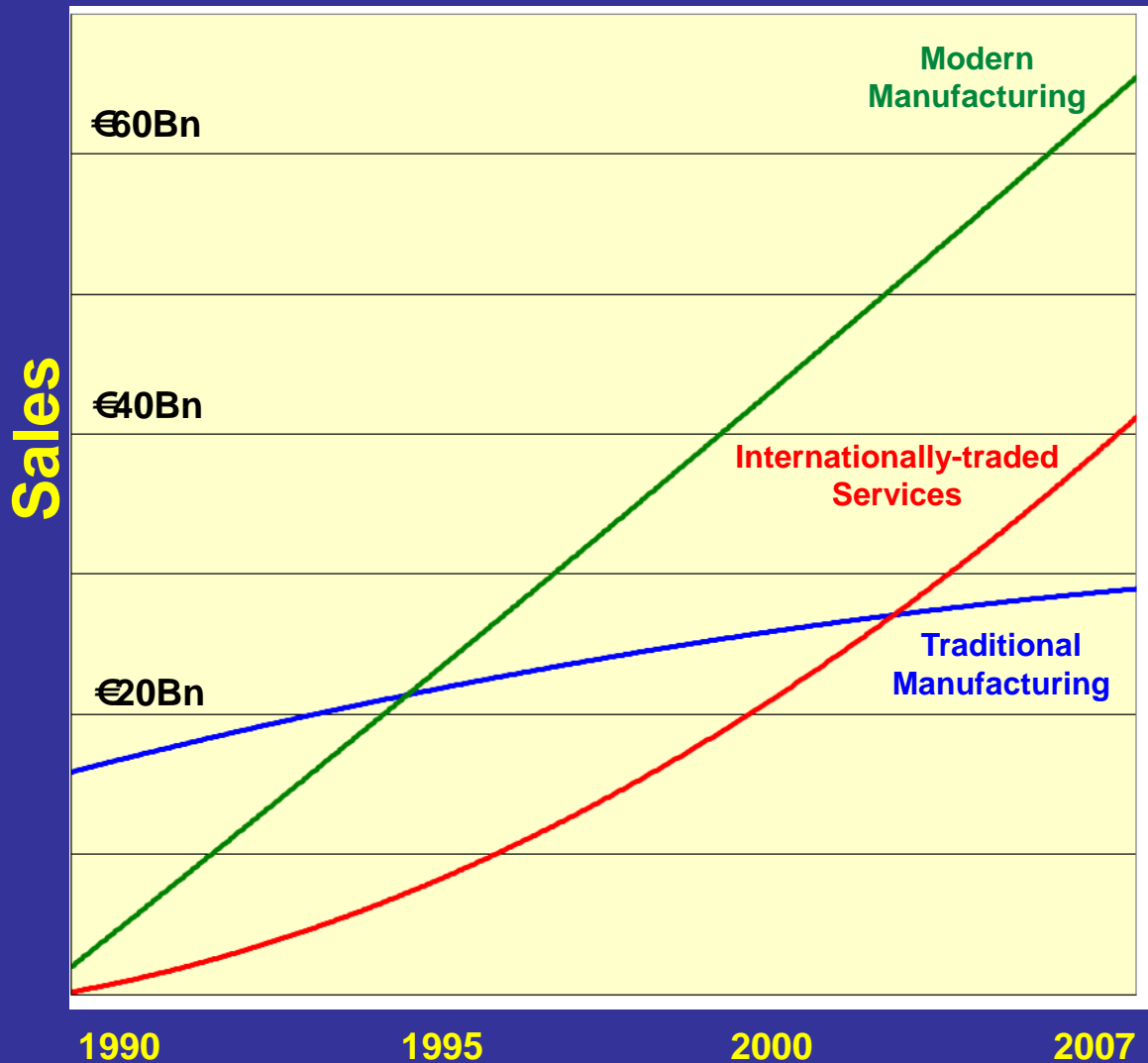
Patrick Cunningham
Chief Scientific Adviser to the Government

EUNIS, Dublin, 15 June, 2011

Strategy for Science, Technology & Innovation (2006)

“Ireland by 2013 will be internationally renowned for the excellence of its research, and will be to the forefront in generating and using new knowledge for economic and social progress, within an innovation driven culture.”

The Tiger Years

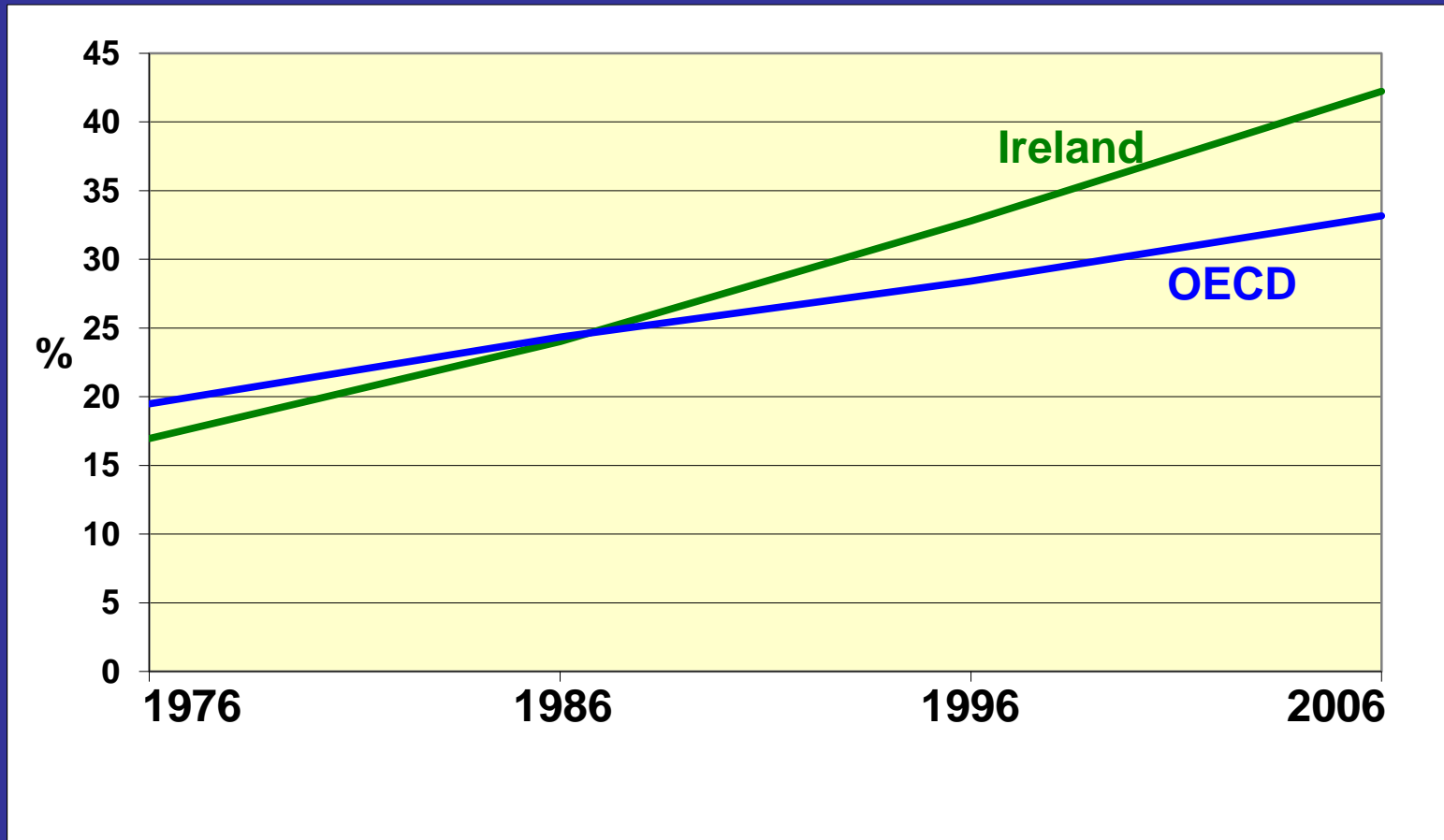


Roots:

- EU / Euro
- Tax
- Education

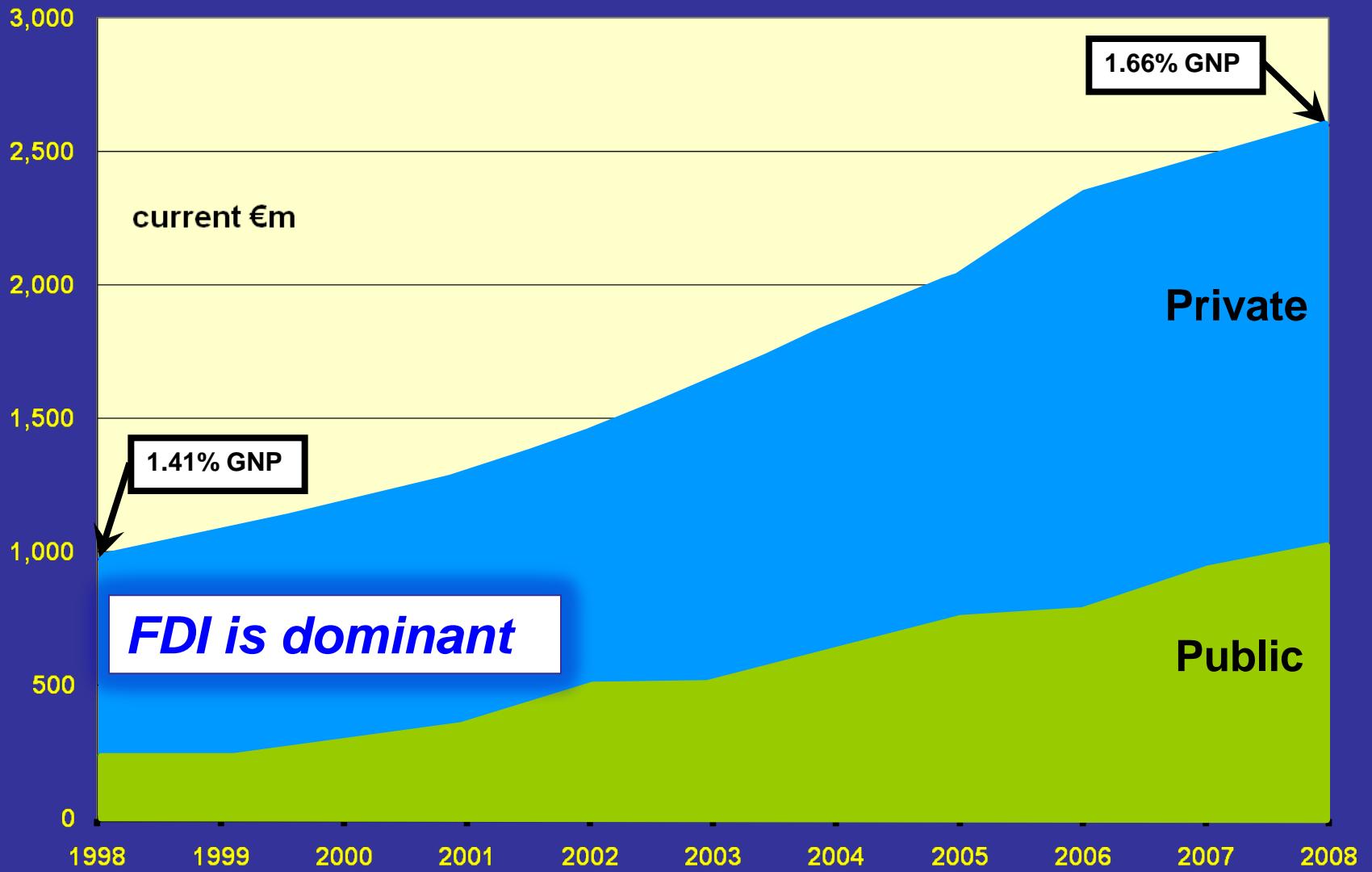
Source: Forfás, 2008

% of 25-34 Age Group with Tertiary Education



Source: Education at a Glance, OECD, 2008.

Investment in R&D*

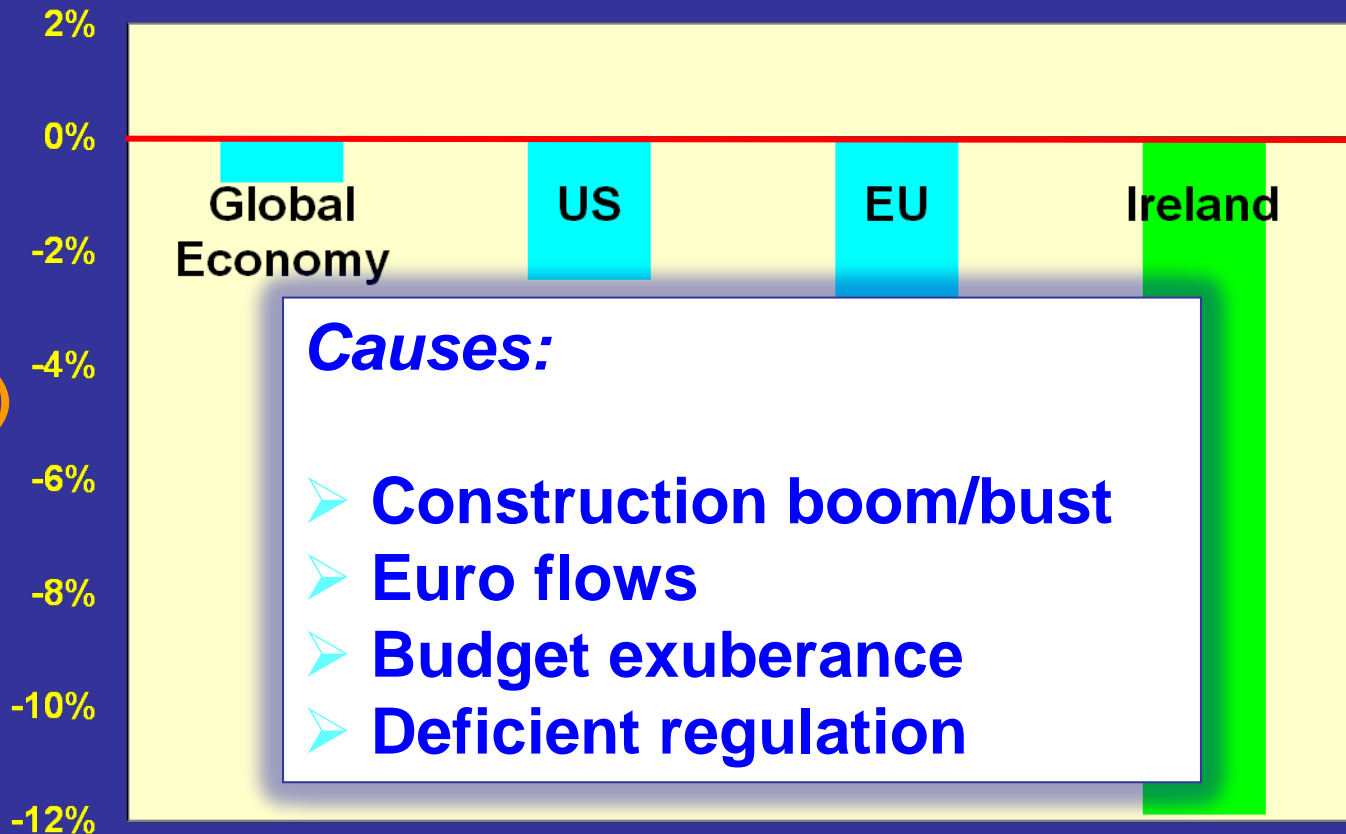


* GERD – Gross Expenditure on R&D.

Source: Forfás, 2009

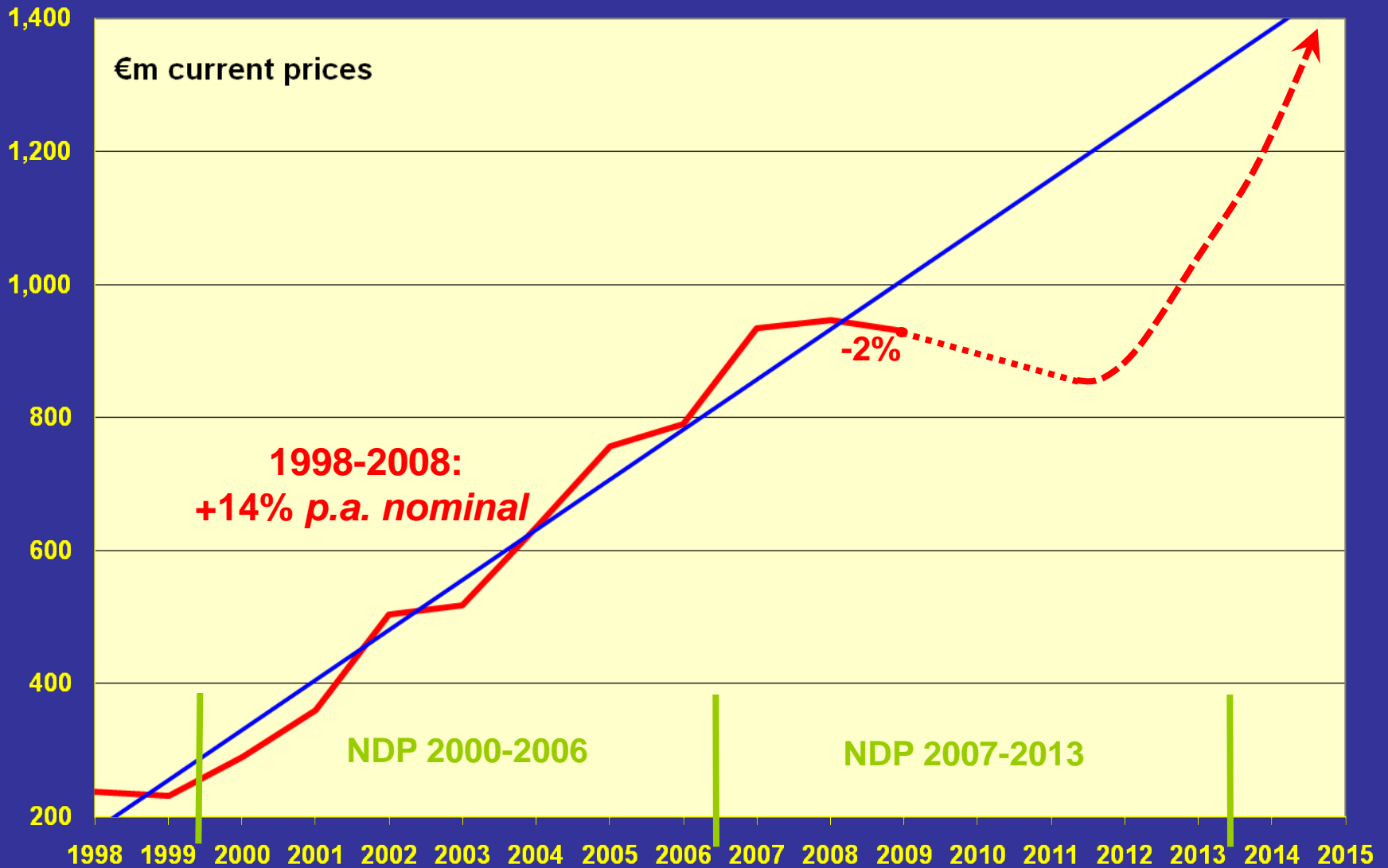
Depth of Global Recession

Decline in
GDP (GNP)
for 2009



Sources: *International Monetary Fund;
Central Bank of Ireland*

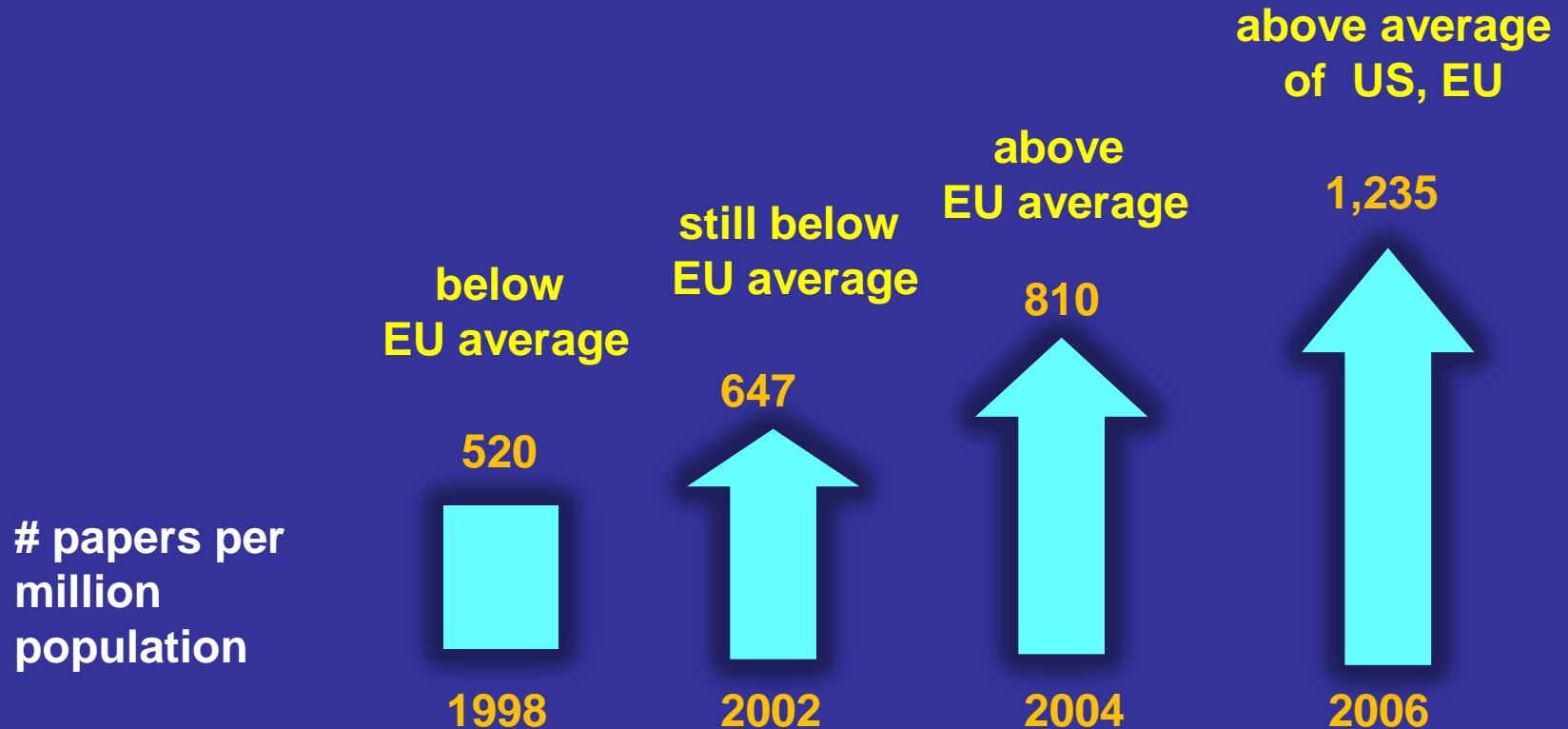
Public Investment in R&D*



* GBAORD - Government Budget Appropriations or Outlays on R&D.

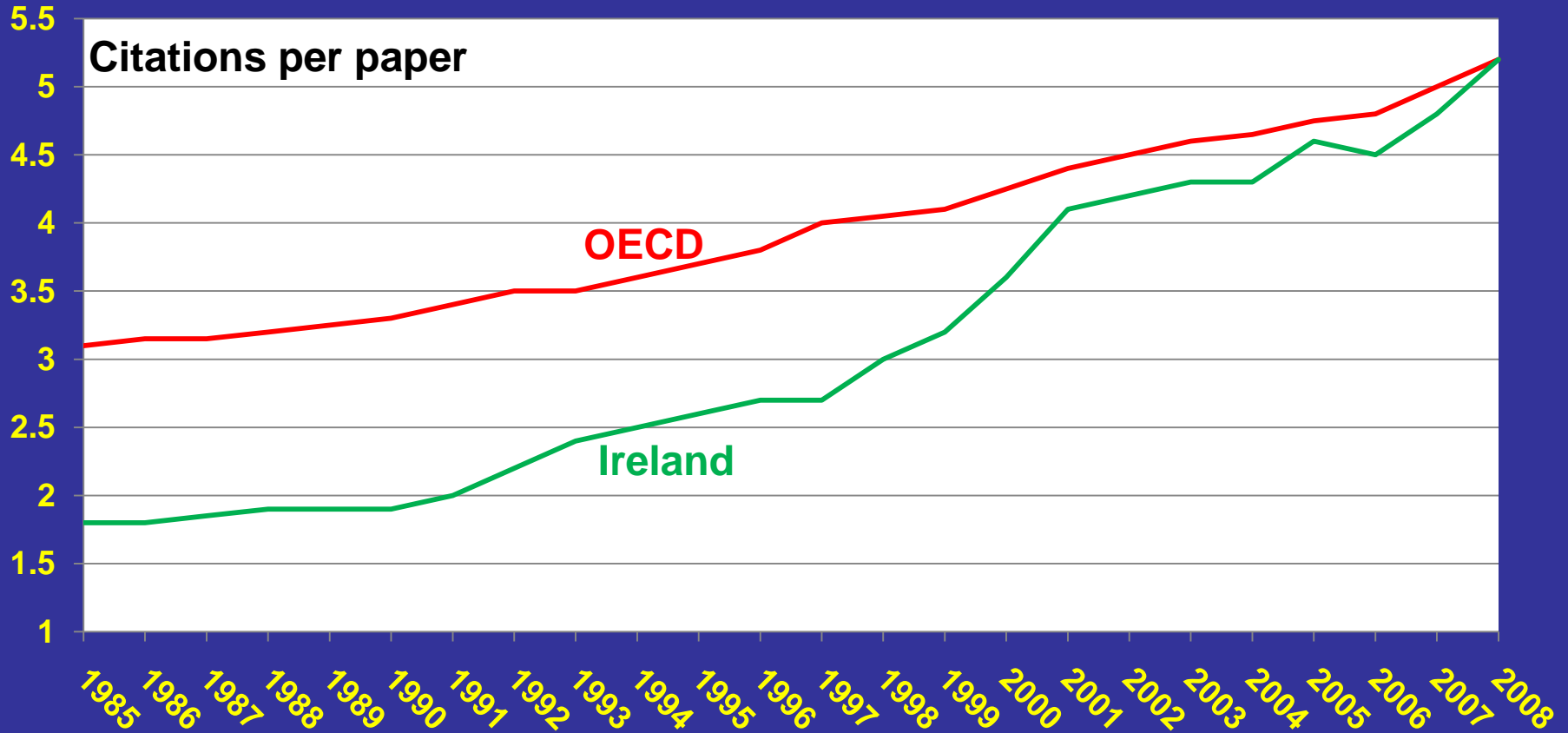
Source: Forfás, 2010

Publications: Quantity



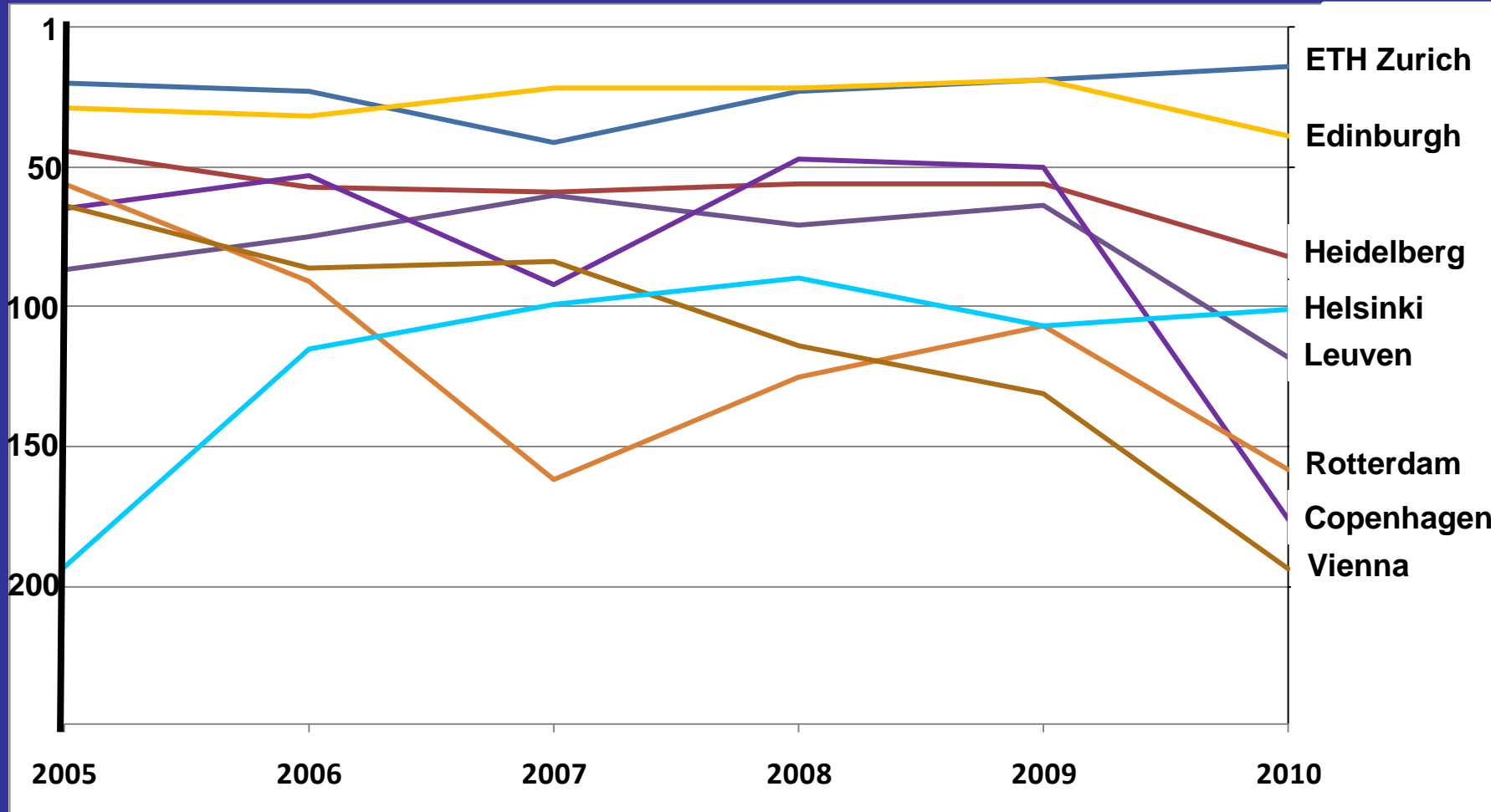
Source: EU Key Facts & Figures

Publications: Quality



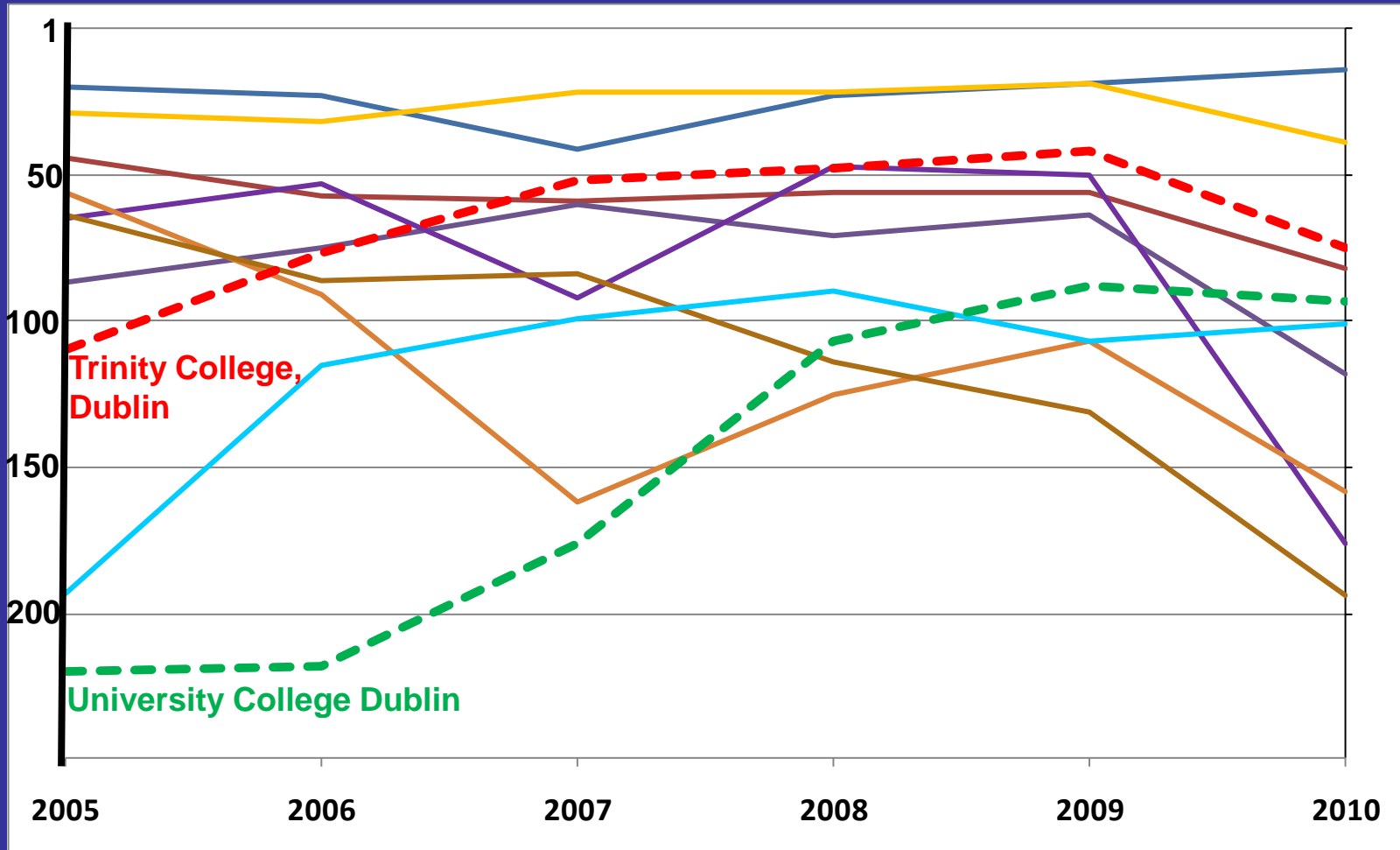
Source: Thomson Reuters, InCites, March 2010

University Rankings



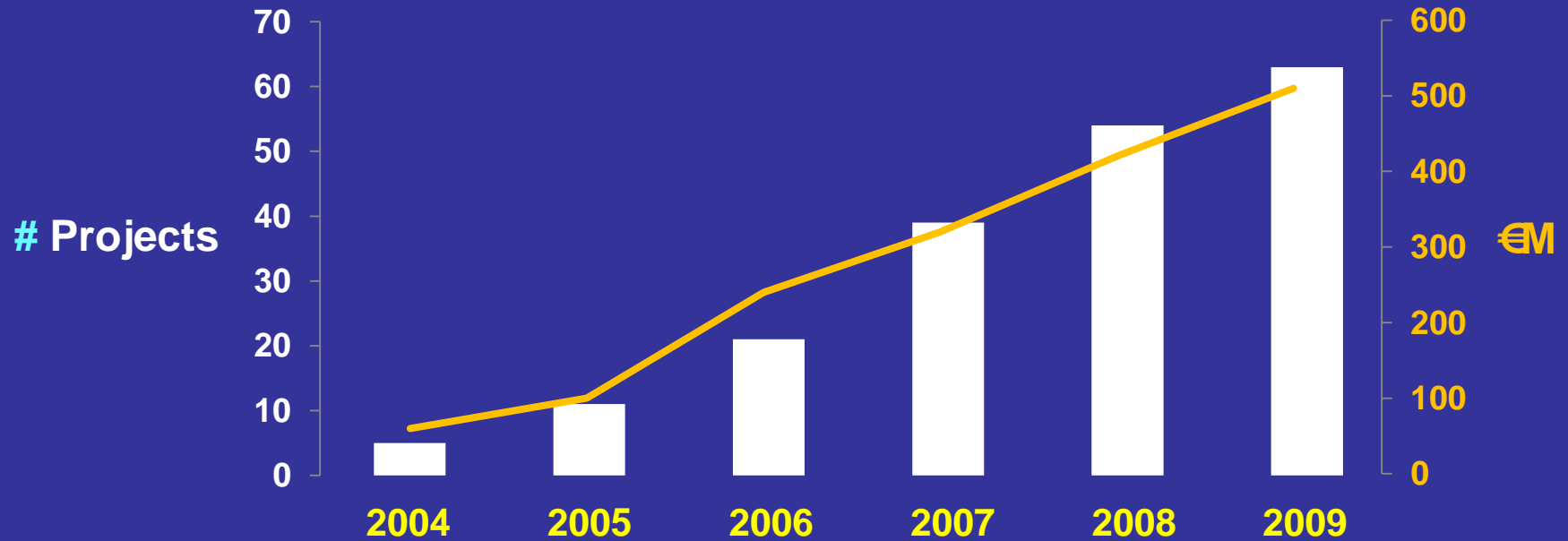
Source: Times Higher Education Supplement

University Rankings



Source: Times Higher Education Supplement

Impact on Foreign R&D Investment



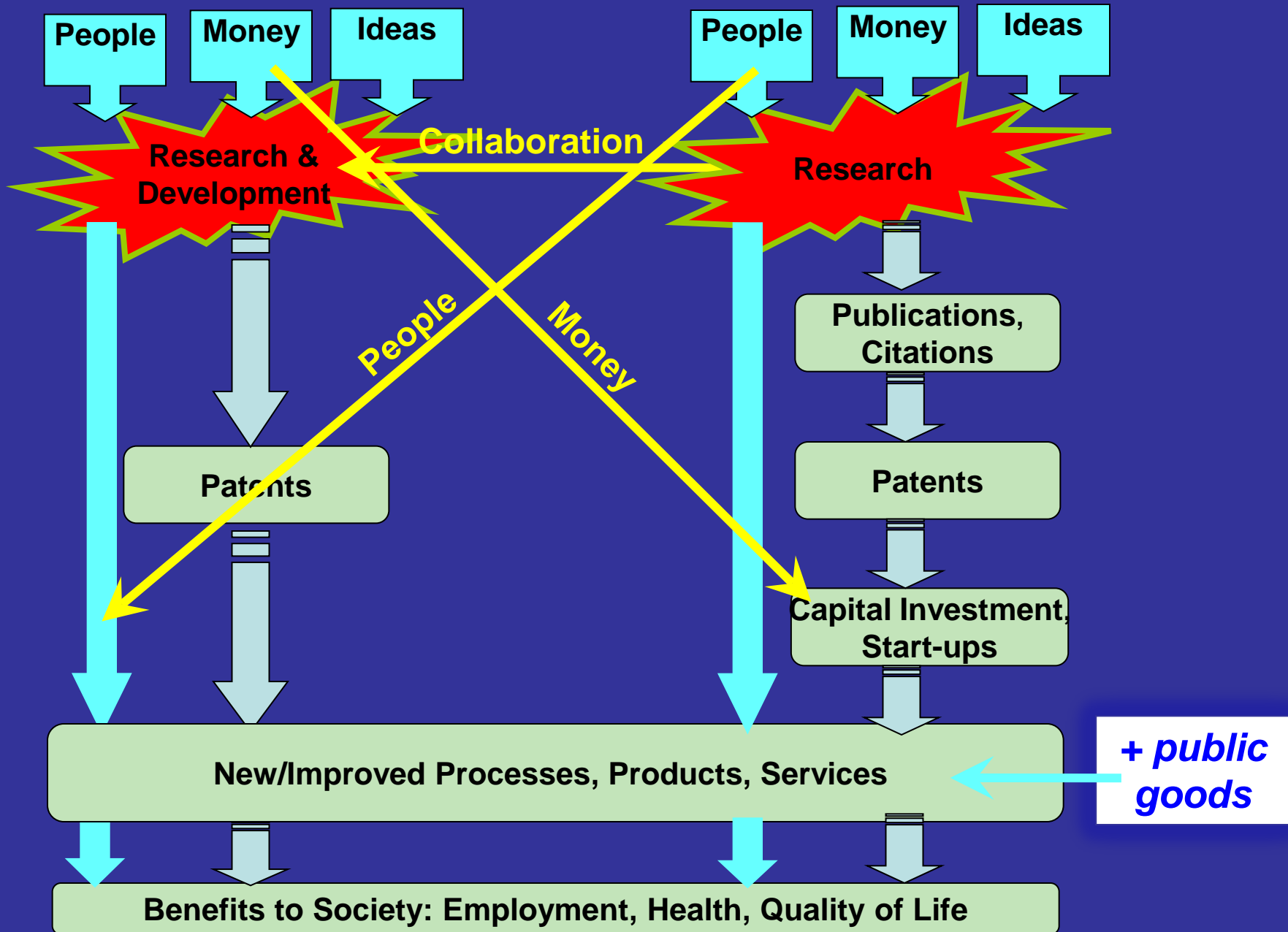
➤ **What Goals?**

➤ **What Models?**

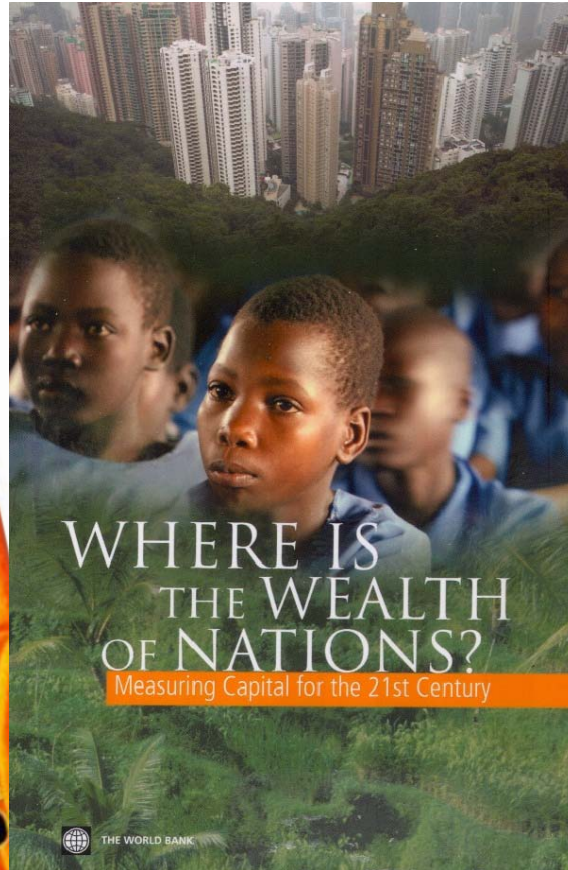
➤ **What Metrics?**

Business

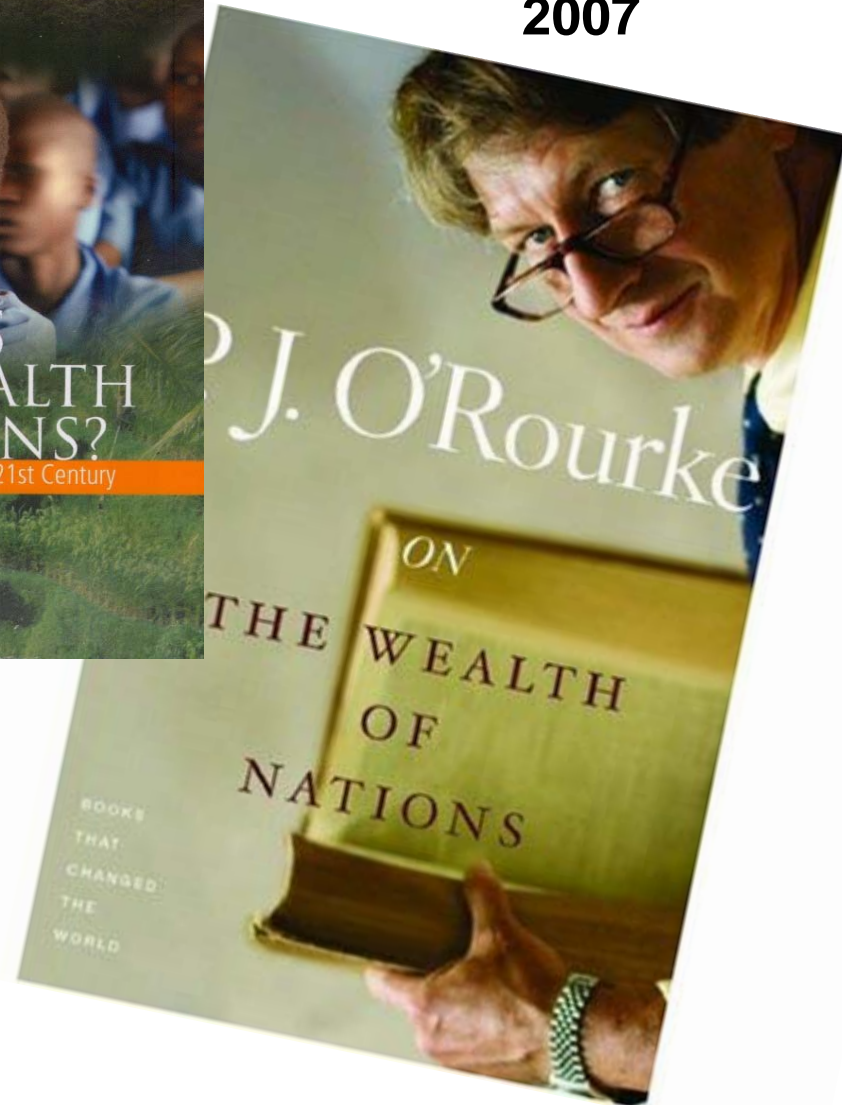
Public



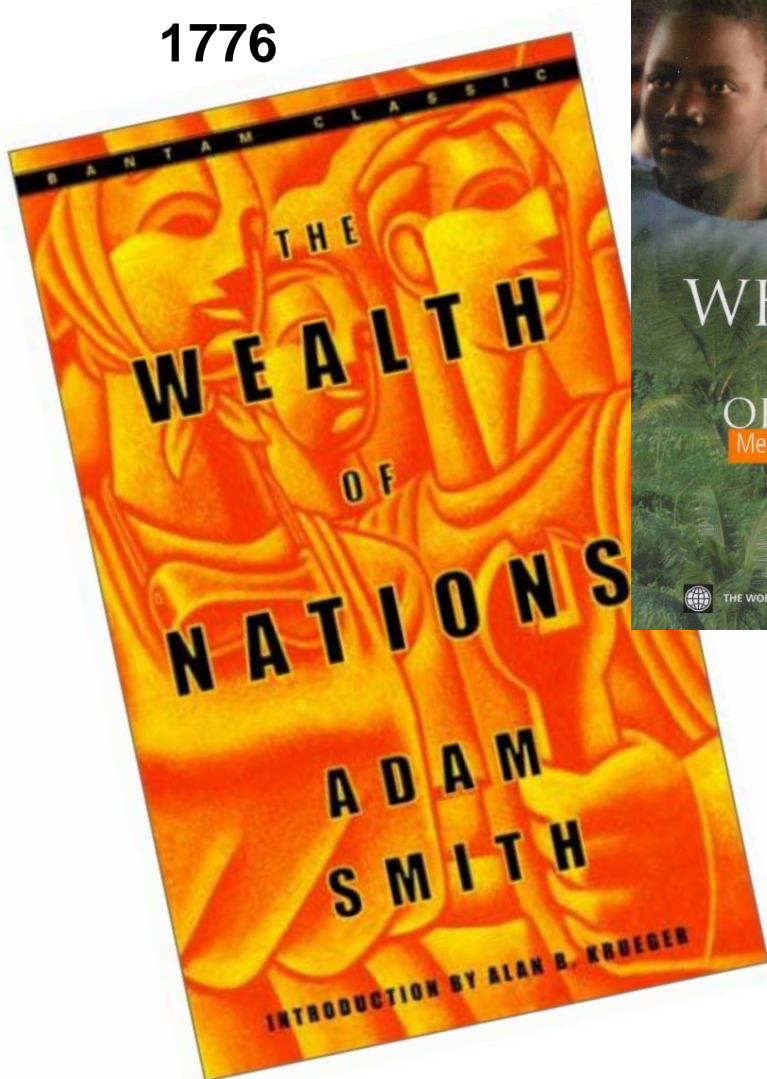
2006



2007



1776



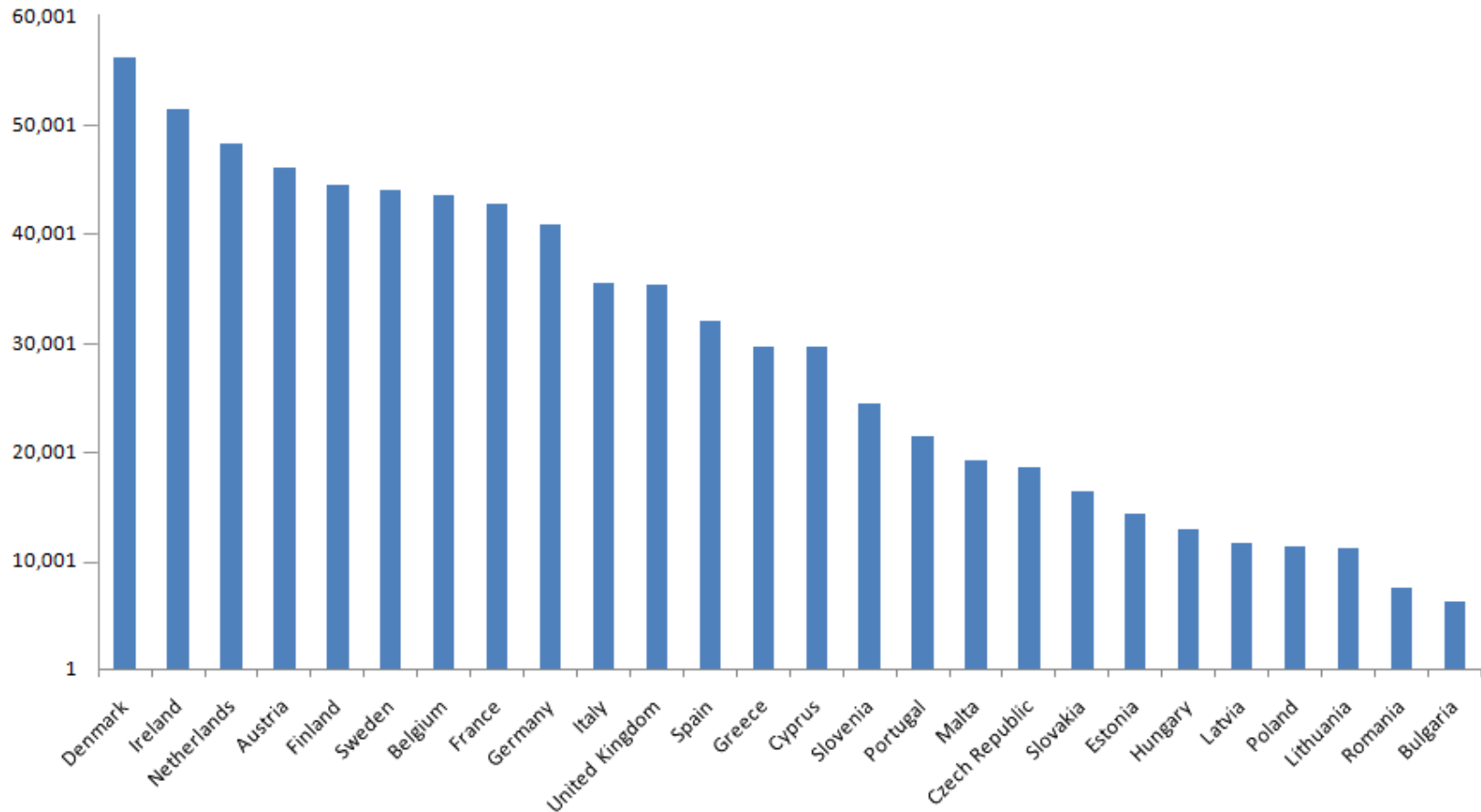
Ireland's Wealth



Source: Where is the Wealth of Nations? World Bank , 2006.

GDP per capita

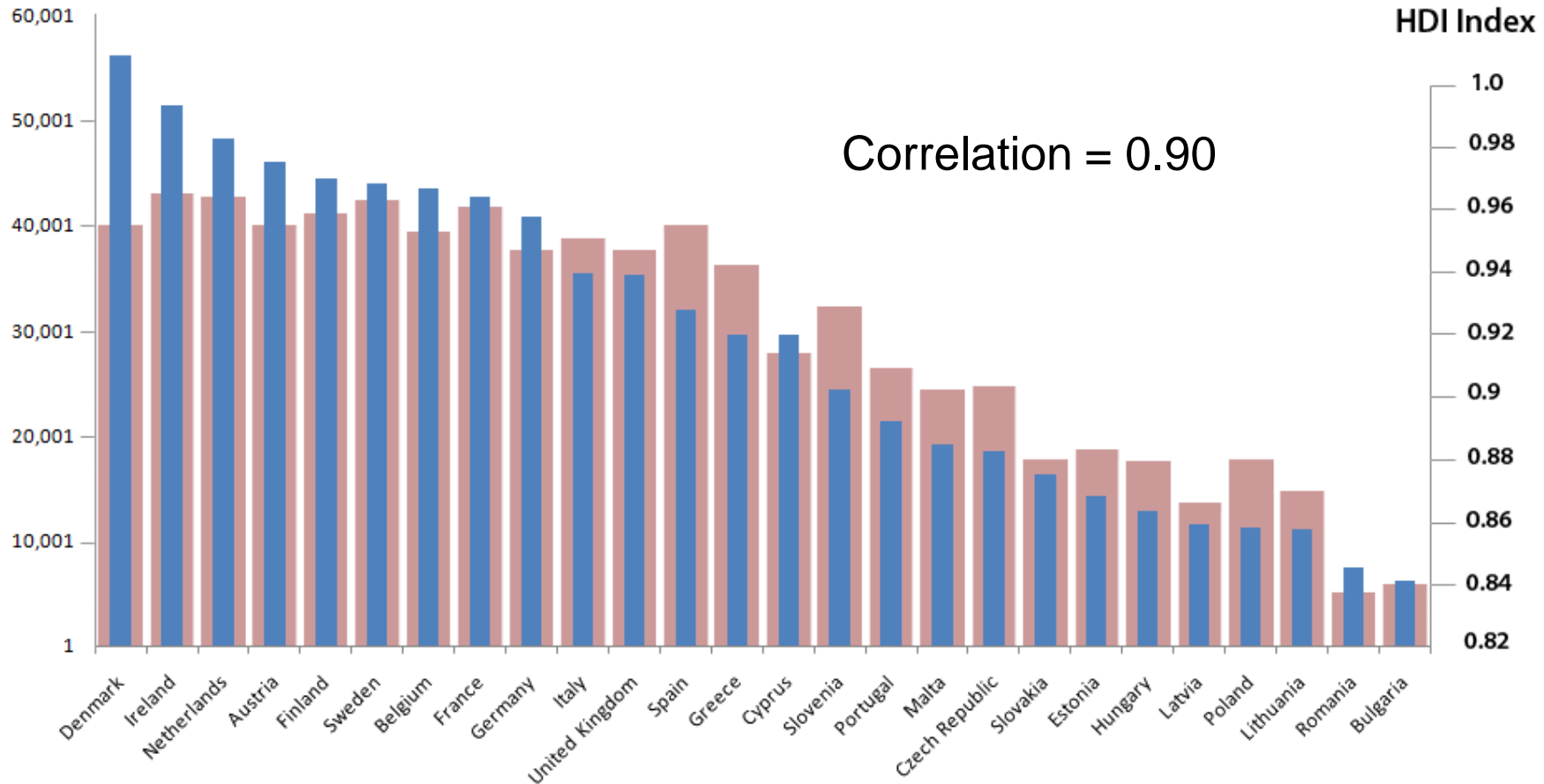
GDP (nominal) per capita in US\$



Source: International Monetary Fund, 2009

GDP per capita and Human Development Index

GDP (nominal) per capita in US\$



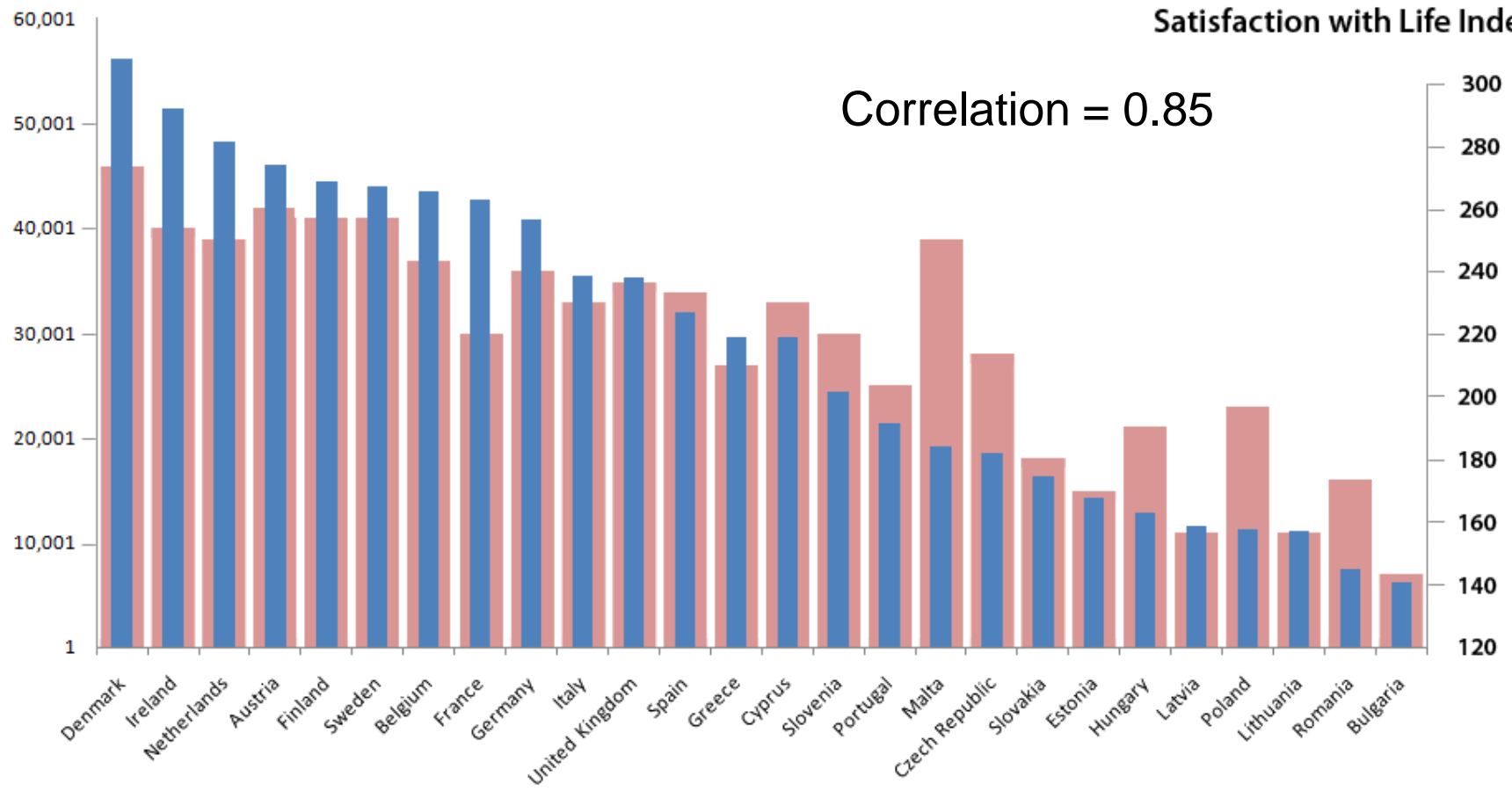
Sources: International Monetary Fund, 2009,
Human Development Report, UN Development Programme

GDP per capita and Satisfaction with Life Index

GDP (nominal) per capita in US\$

Satisfaction with Life Index

Correlation = 0.85

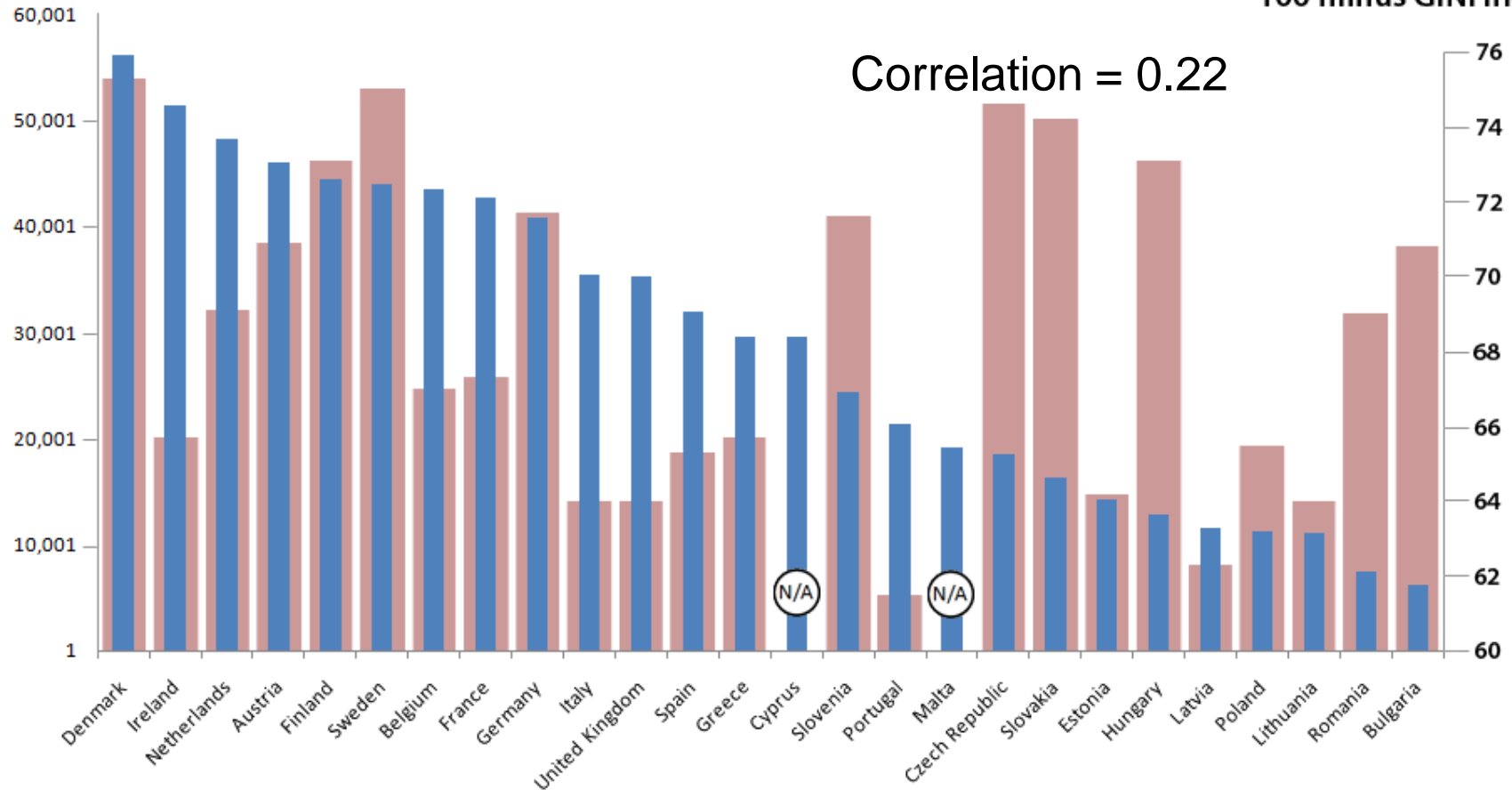


Sources: International Monetary Fund, 2009; White, A. (2007); A Global Projection of Subjective Well-being: A Challenge To Positive Psychology? Psychtalk 56, 17-20

GDP per capita and GINI Coefficient

GDP (nominal) per capita in US\$

100 minus GINI Index



Sources: International Monetary Fund, 2009,
Human Development Report, UN Development Programme

Innovation Union Scoreboard:

Inputs

Human Resources

- New Doctoral Graduates
- Population with Tertiary Education
- Youth Completion of Second-Level

Research System

- Scientific Publications
- Scientific Citations
- Non-EU doctoral students

Finance & Support

- Public R&D Expenditure
- Venture Capital

Firm Investments

- Business R&D Expenditure
- Non-R&D Innovation Expenditure

Linkages & Entrepreneurship

- SMEs Innovating In-house
- Innovative SMEs Collaborating
- Public-Private Co-publications

Intellectual Assets

- Patent applications
- Patent applications in Societal Challenges
- Community Trademarks
- Community Designs

Innovation Union Scoreboard:

Outputs

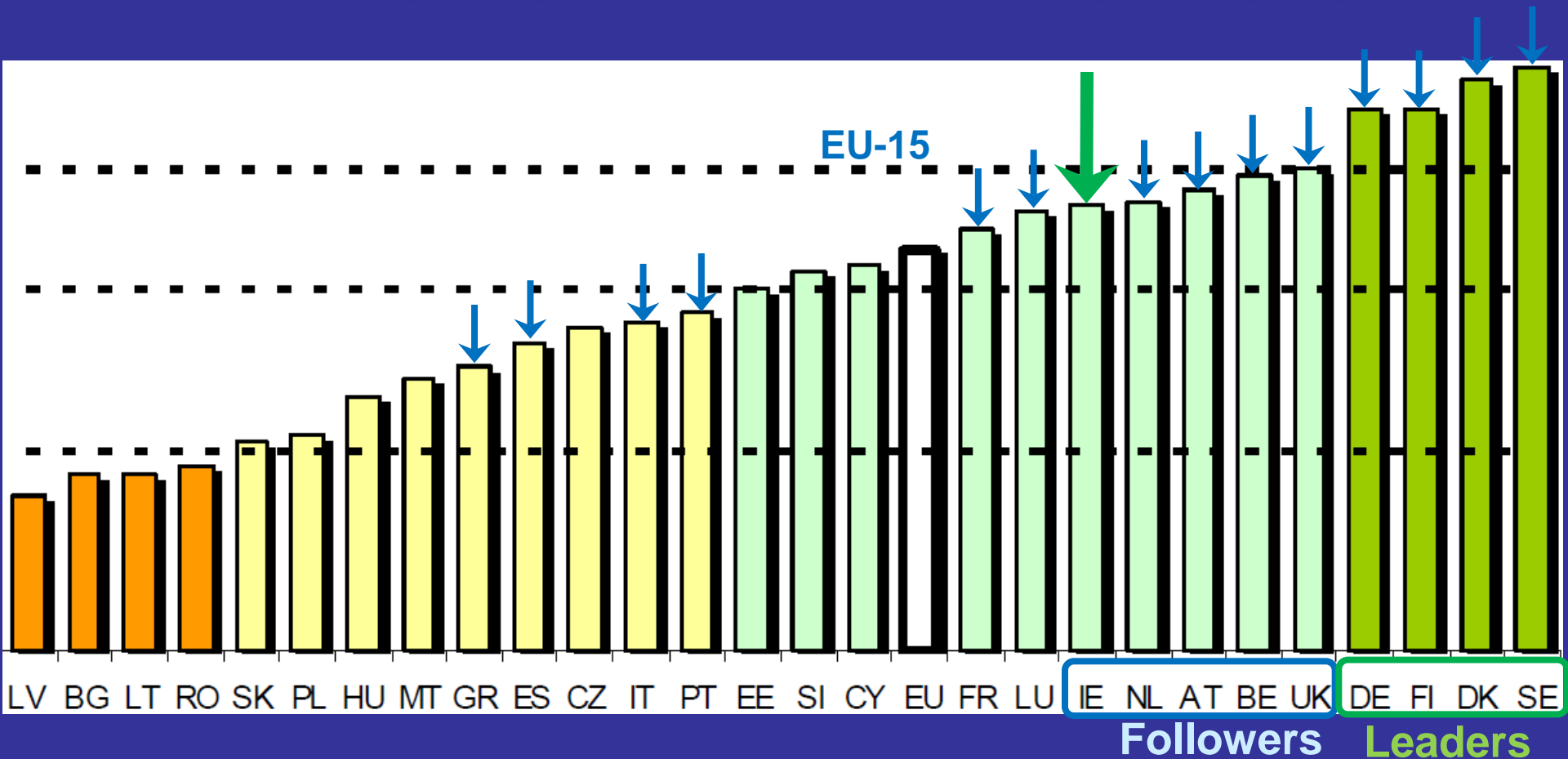
Innovators

- SME Product, Process Innovation
- SME Marketing, Organisational Innovation
- High-growth Innovation firms

Economic Effects

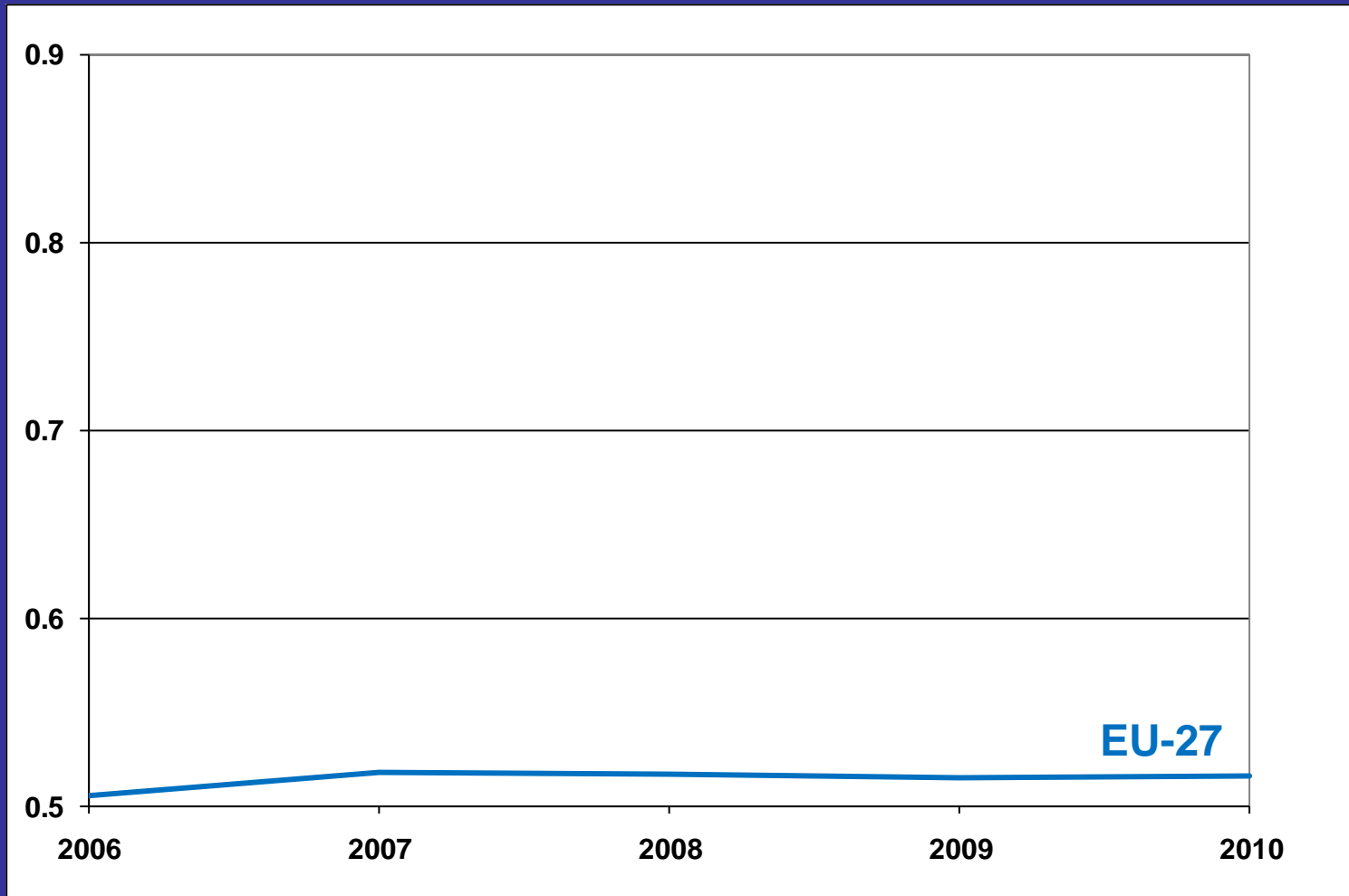
- Knowledge-intensive Employment
- High-tech Product Exports
- Knowledge-intensive Services Exports
- Sales New-to-Firm, New-to-Market Innovations
- License & Patent Revenues from Abroad

Innovation Performance 2010



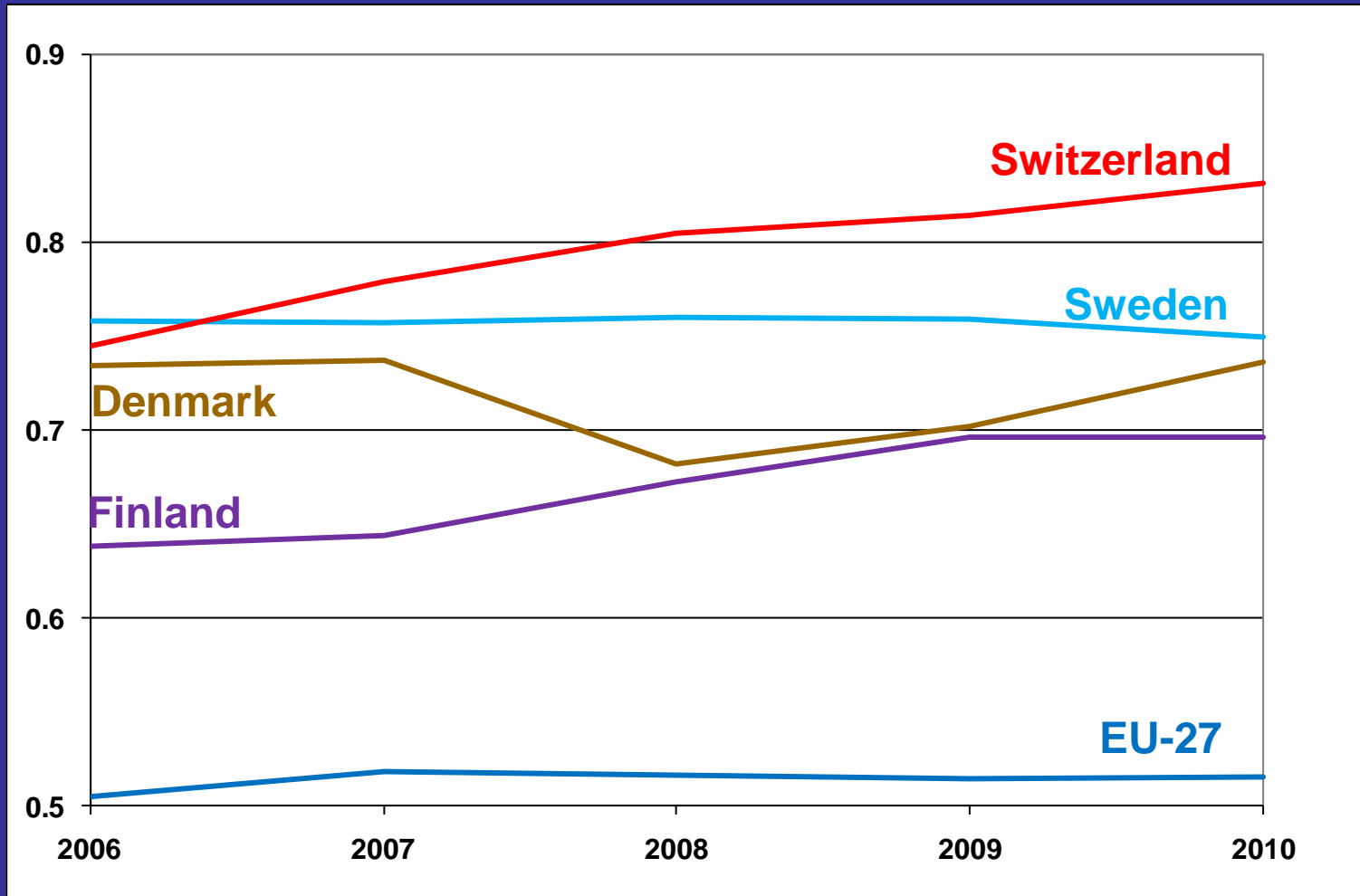
Source: Innovation Union Scoreboard 2010, UNU-MERIT, Maastricht, Jan. 2011

Time Series



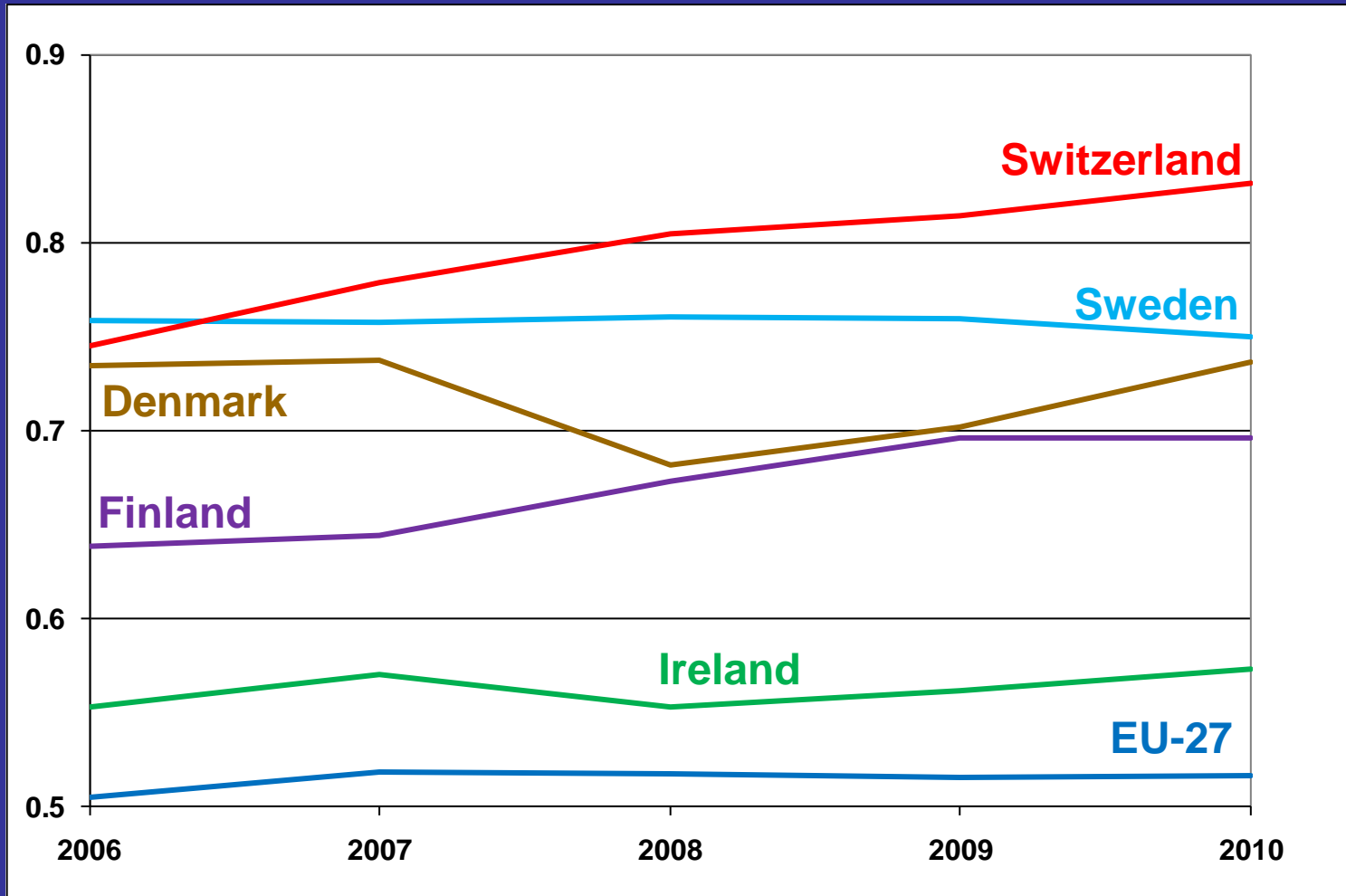
*Source: Innovation Union Scoreboard 2010,
UNU-MERIT, Maastricht, Jan. 2011*

Time Series



Source: Innovation Union Scoreboard 2010,
UNU-MERIT, Maastricht, Jan. 2011

Time Series



Source: Innovation Union Scoreboard 2010, UNU-MERIT, Maastricht, Jan. 2011

Summary

- **Metrics now show Ireland close to EU-15 average**
i.e. among the “followers”.
- **Target peer group includes FI, SE, DK, & CH.**

Challenges

- **Monitoring Delivery against Correct Indicators**
- **Effective Linkages to Dual Business Sectors**
 - Close attention to needs of foreign-owned firms
 - Special efforts to lift indigenous firms
- **Keeping on Track to Target**
 - To match leading countries
 - Achievable in ~10 years

Euroscience Open Forum 2012

Dublin, July 11-15, 2012

www.esof2012.org

Thank you

