

# Agricultural Research Forum

Tullamore, 12-13<sup>th</sup> March 2008

## Small Country, Big Ambitions

A Look Back,  
A Look Forward

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Image NASA  
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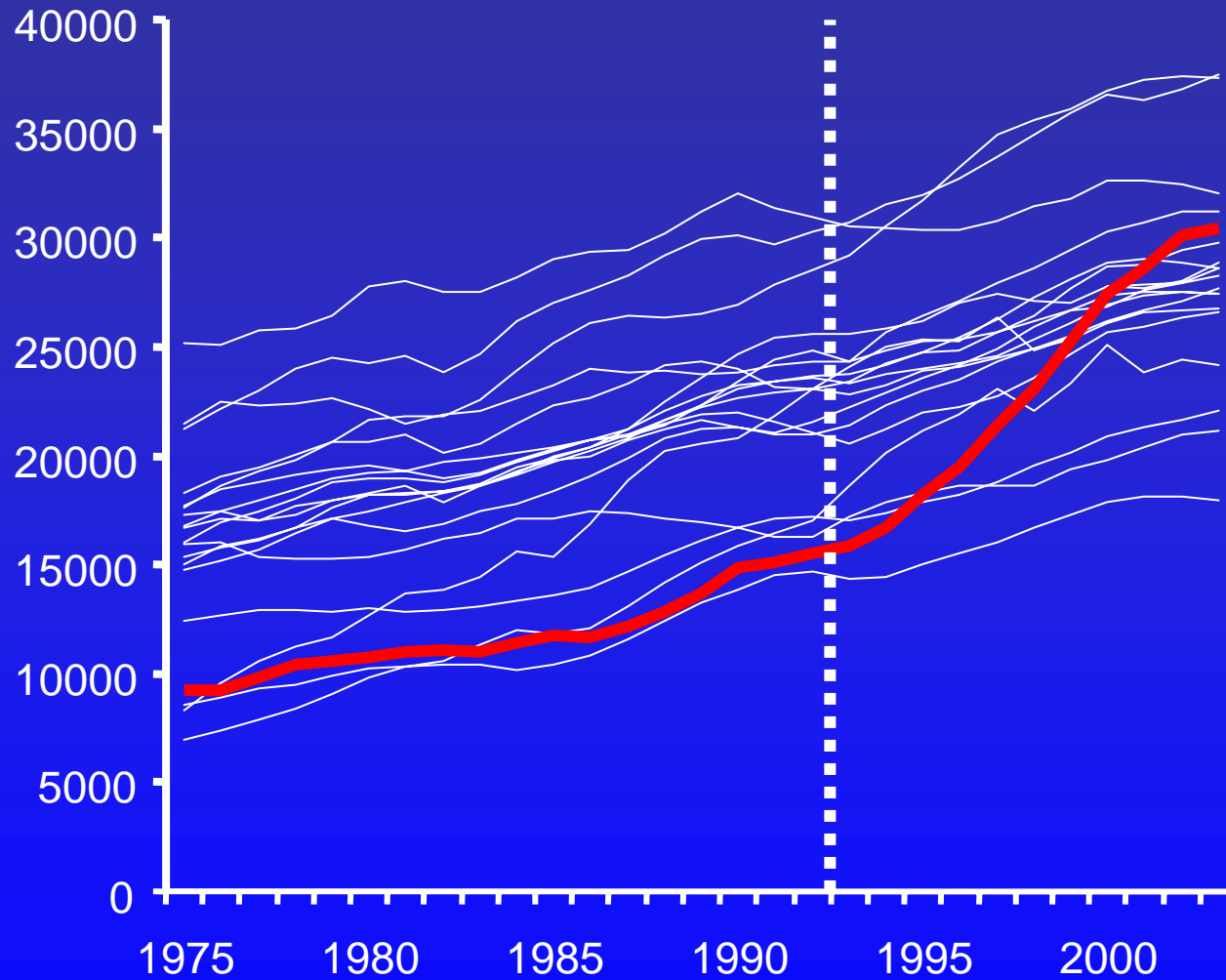
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- International Benchmarking:  
Where does Ireland stand?
- Our resource base:  
People, land, climate, water.
- Reaching the targets:  
The necessary steps.

# Roots of Development

- I. History; Geography; Demography; Language
- II. Change in Economic Policy (1958)
- III. EU Membership (1972)
- IV. Investment in Education (1967, 1970 ...)
- V. Social Partnership (1987)
- VI. Tax Policy (1980-90s)
- VII. Infrastructure; Banking; Legal

# GNP per capita 1975-2003: Ireland and other advanced economies



Source: World Bank, 2003

# Economy Expands, Agriculture Modernises

	1960	1995	2006
Agriculture % GNP	20	7	3.5
Agriculture % Employment	37	11	5.4
Numbers Employed (K)	390	139	109

# Output Surged, then Stabilized

	1960	1995	2006
<b>Milk (mt)</b>	1.9	5.2	5.1
<b>Cattle (m)</b>	1.0	2.0	1.8
<b>Pigs (m)</b>	1.4	3.0	3.0
<b>Sheep (m)</b>	1.5	4.2	2.9
<b>Cereals (mt)</b>	1.3	1.8	1.9
<b>Volume Index</b>	100	233	233

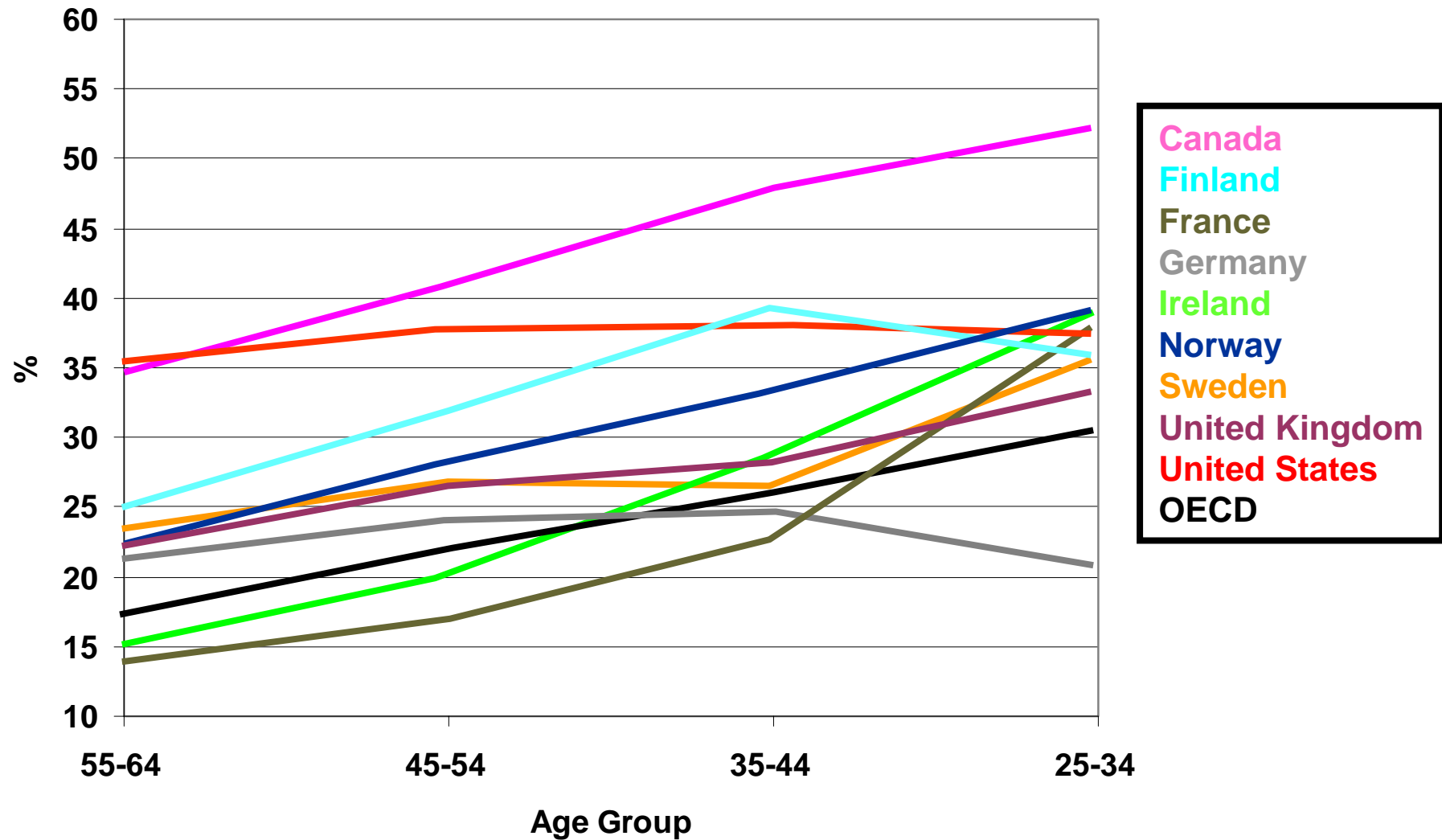
# Efficiency Gains Continue

	1960	1995	2006
<b>Milk (kg/cow)</b>	<b>1,833</b>	<b>4,116</b>	<b>4,649</b> <i>(2002)</i>
<b>Wheat (t/Ha)</b>	<b>3.2</b>	<b>8.2</b>	<b>9.2</b>
<b>Barley (t/Ha)</b>	<b>3.3</b>	<b>6.1</b>	<b>6.8</b>
<b>Volume index / person</b>	<b>100</b>	<b>655</b>	<b>840</b>

## **% with Off-Farm Jobs**

	<b>1993</b>	<b>2000</b>	<b>2002</b>
<b>Farmer</b>	<b>24</b>	<b>33</b>	<b>42</b>
<b>Spouse</b>	<b>12</b>	<b>23</b>	<b>35</b>
<b>Farmer or Spouse</b>	<b>31</b>	<b>45</b>	<b>60</b>

## Percentage with Tertiary Education by Age Group (2005)



Source: Education at a Glance, OECD, 2007.

# European Innovation Scoreboard

## Innovation Drivers

- S&E Graduates
- Tertiary Education
- Broadband
- Life-long Learning
- Youth Education

## Knowledge Creation

- Public R&D
- Business R&D
- Share of medium/high-tech R&D
- Enterprises receiving Public Innovation Funds

## Innovation & Entrepreneurship

- SME in-house Innovation
- Innovative SMEs cooperating
- Innovation Expenditures
- Venture Capital
- ICT Expenditures
- SME Organisational Innovation

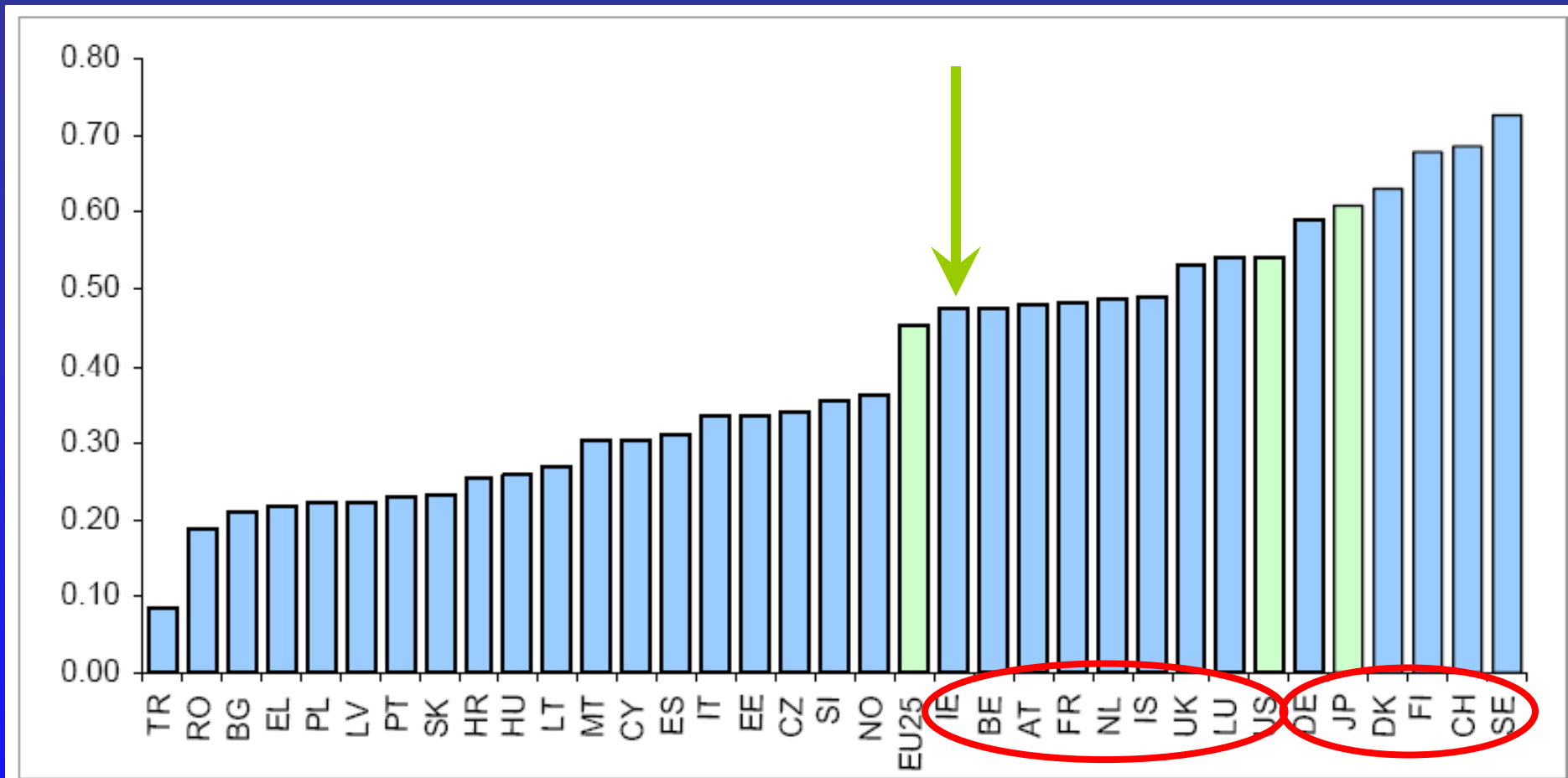
## Applications

- High-tech Services Employment
- High-tech Manuf. Employment
- High-tech Exports
- New-to-market Sales
- New-to-firm Sales

## Intellectual Property

- EPO patents
- USPO Patents
- Triadic Patents
- Trademarks
- Designs

# Summary Innovation Index 2006

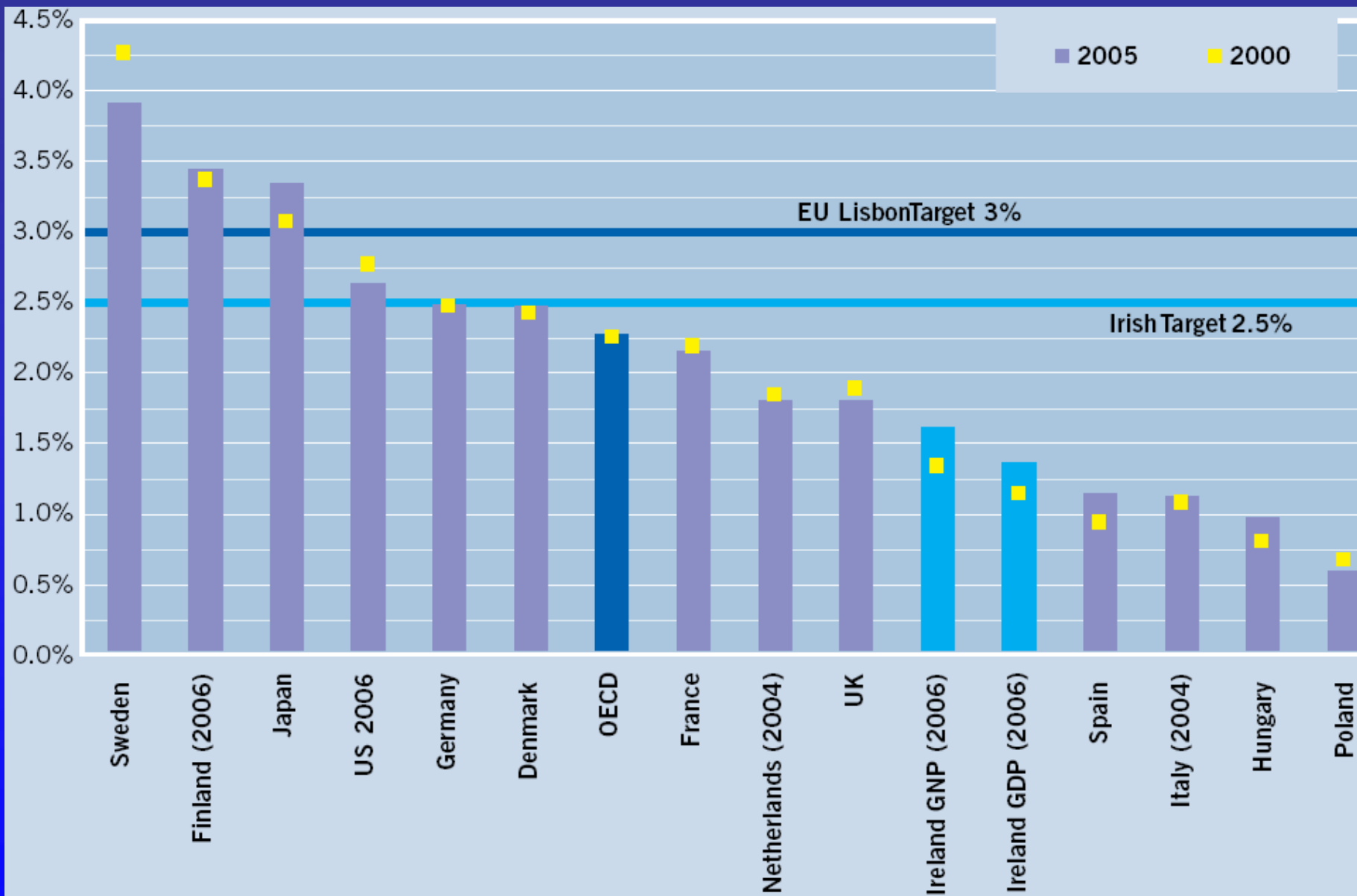


Followers

Leaders

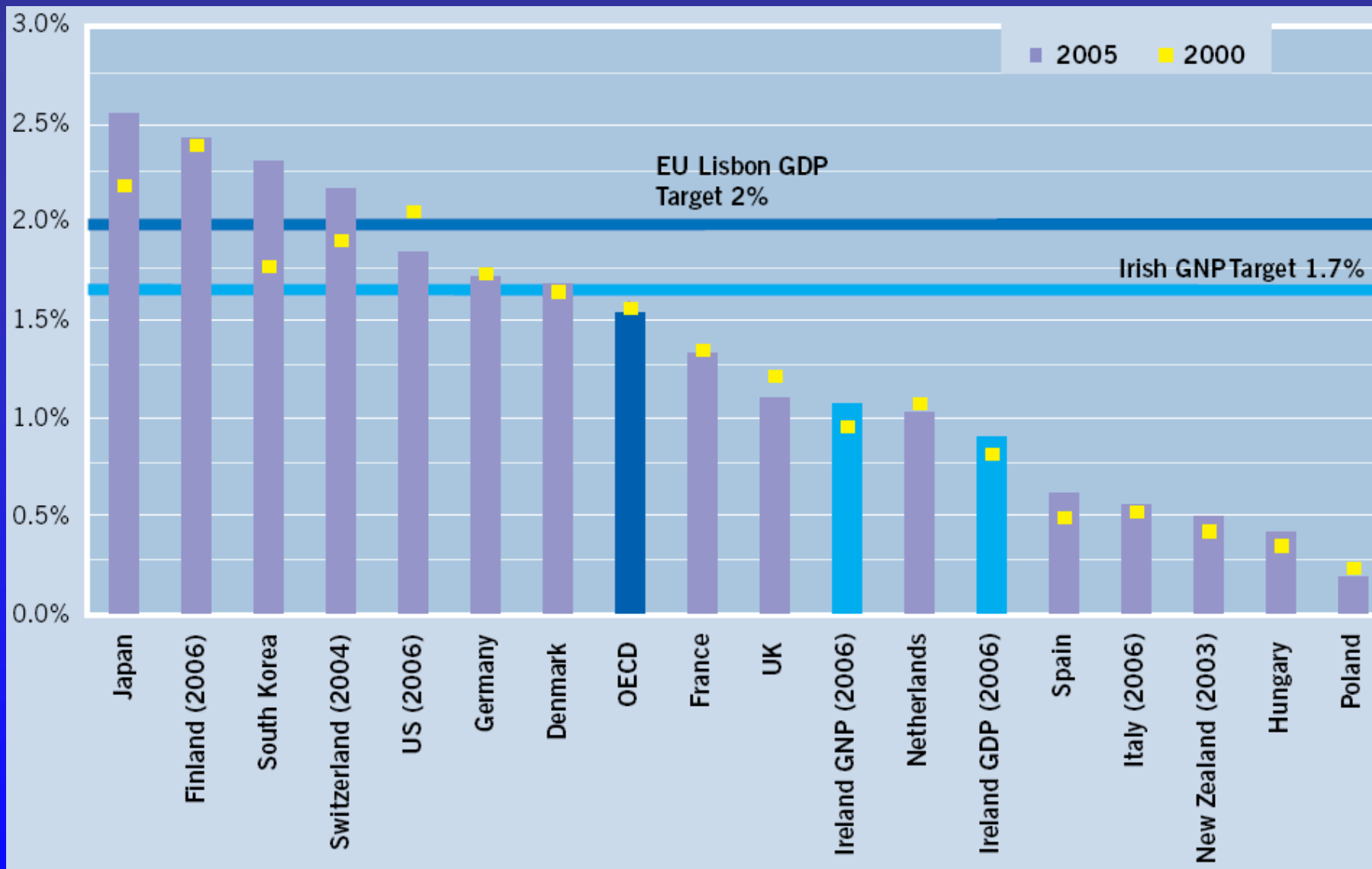
*European Innovation Scoreboard 2006 (Feb 2007)*

# Gross Domestic Expenditure on R&D (GERD), % GDP, 2005



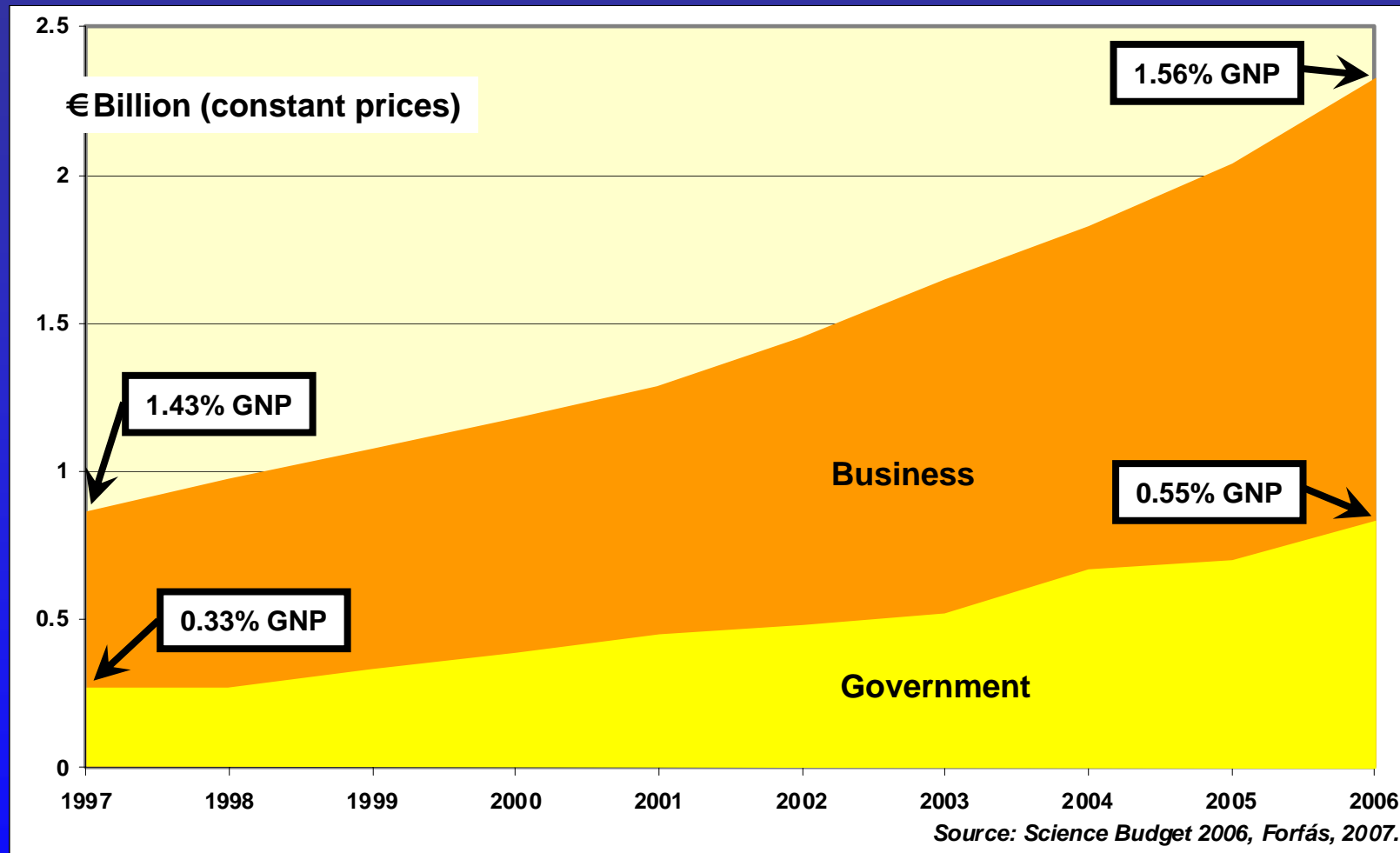
Source: Annual Competitiveness Report, NCC, 2007.

# Business Expenditure on R&D (BERD) % GDP, 2005

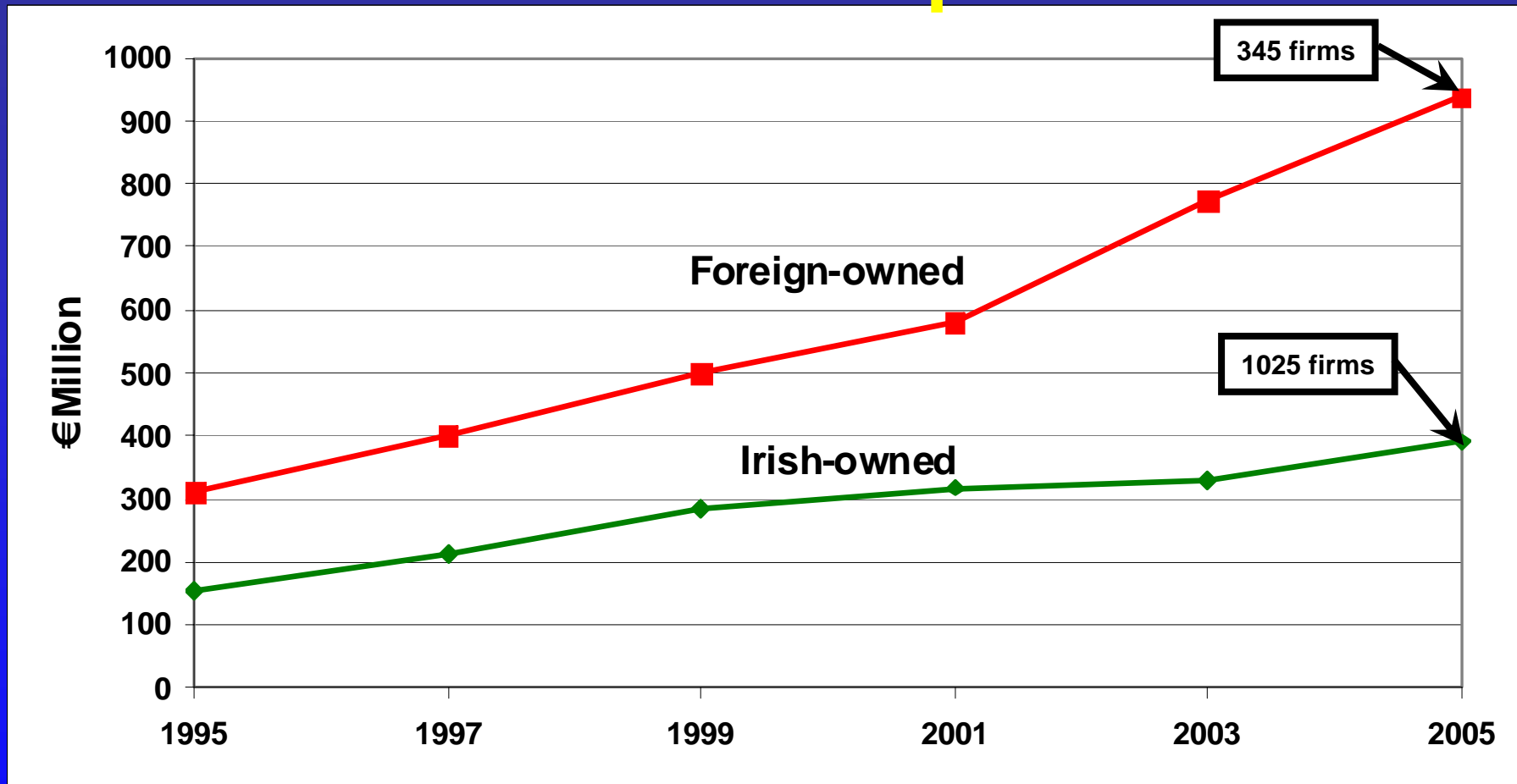


Source: Annual Competitiveness Report, NCC, 2007.

# Ireland: Investment in R&D



# R&D in the Business Sector by Ownership



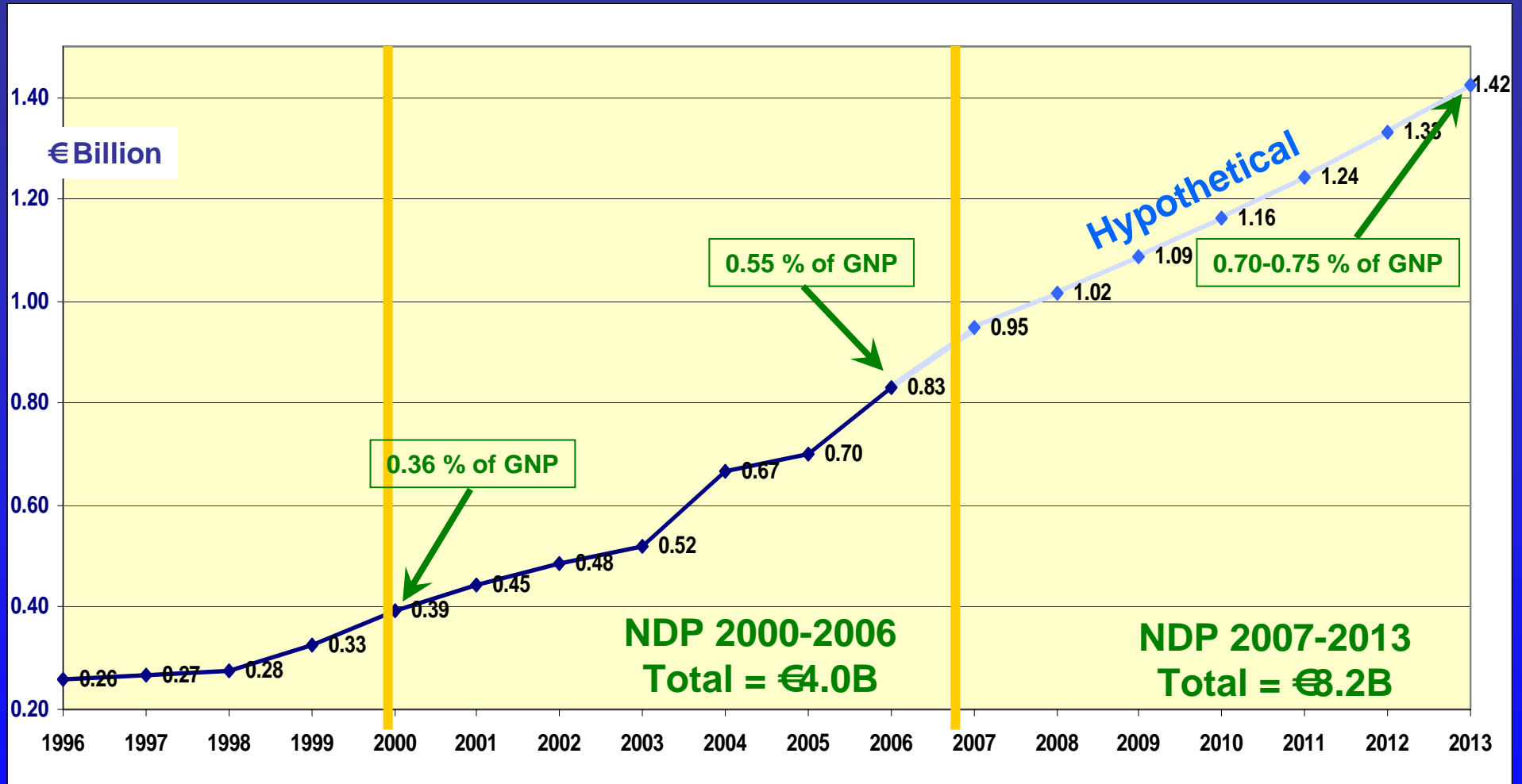
Source: Forfás.

# Strategy for Science, Technology & Innovation 2006 - 2013



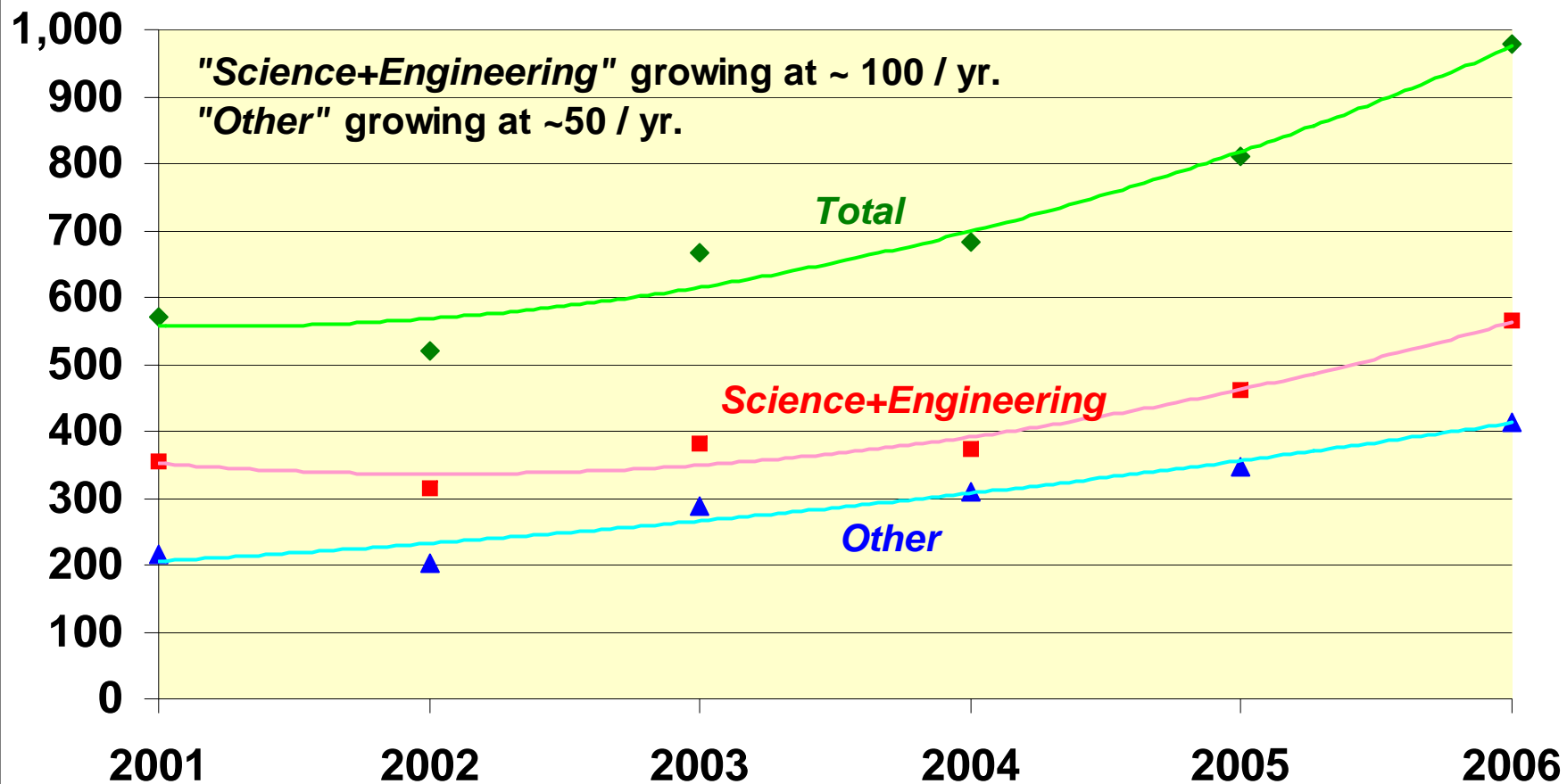
[www.entemp.ie/publications/science/2006/sciencestrategy.pdf](http://www.entemp.ie/publications/science/2006/sciencestrategy.pdf)

# Public Investment in R&D



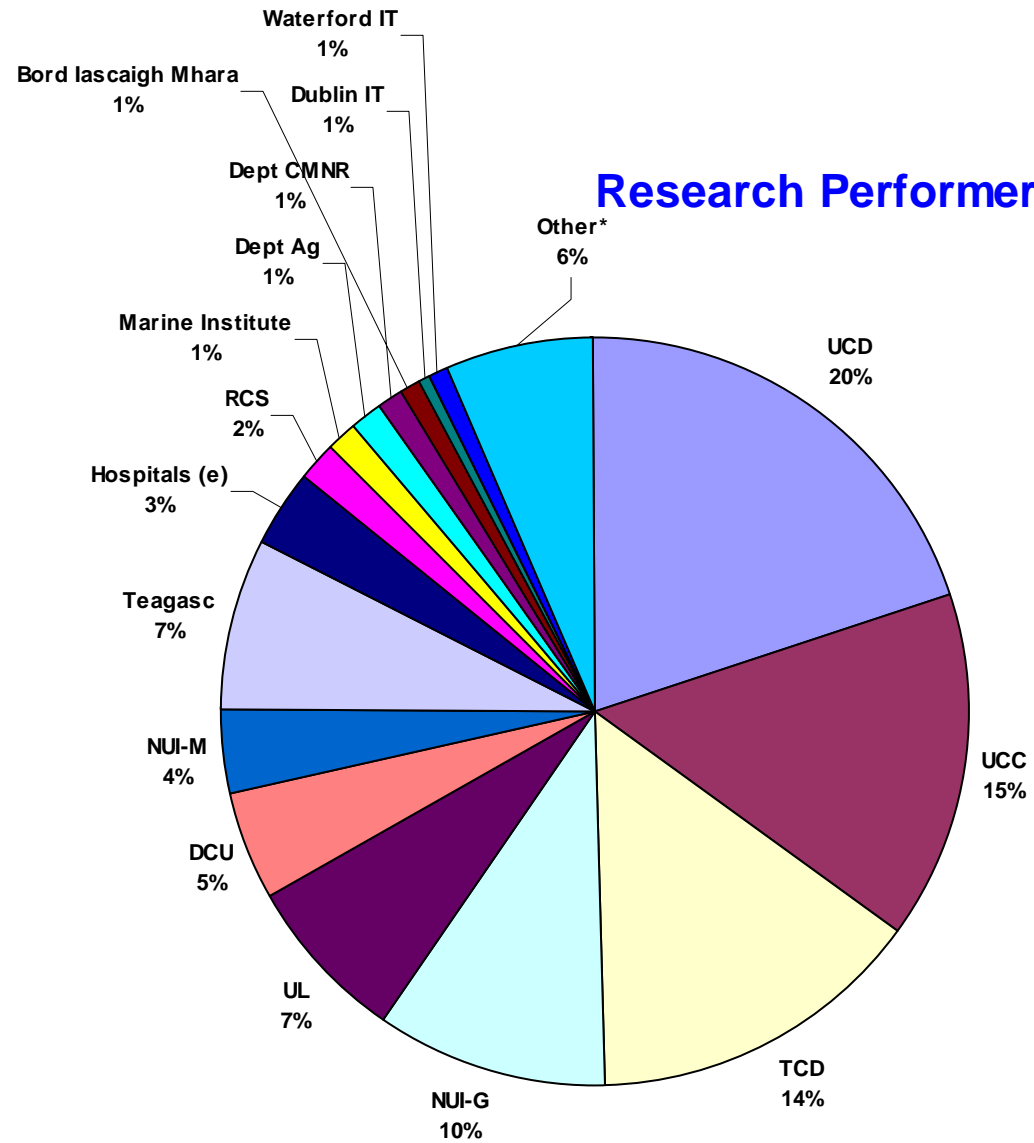
Sources: *Historical - State Expenditure on R&D 2005-6, Forfás.*  
*Future – CSA estimates based on NDP.*

## Doctoral Graduations



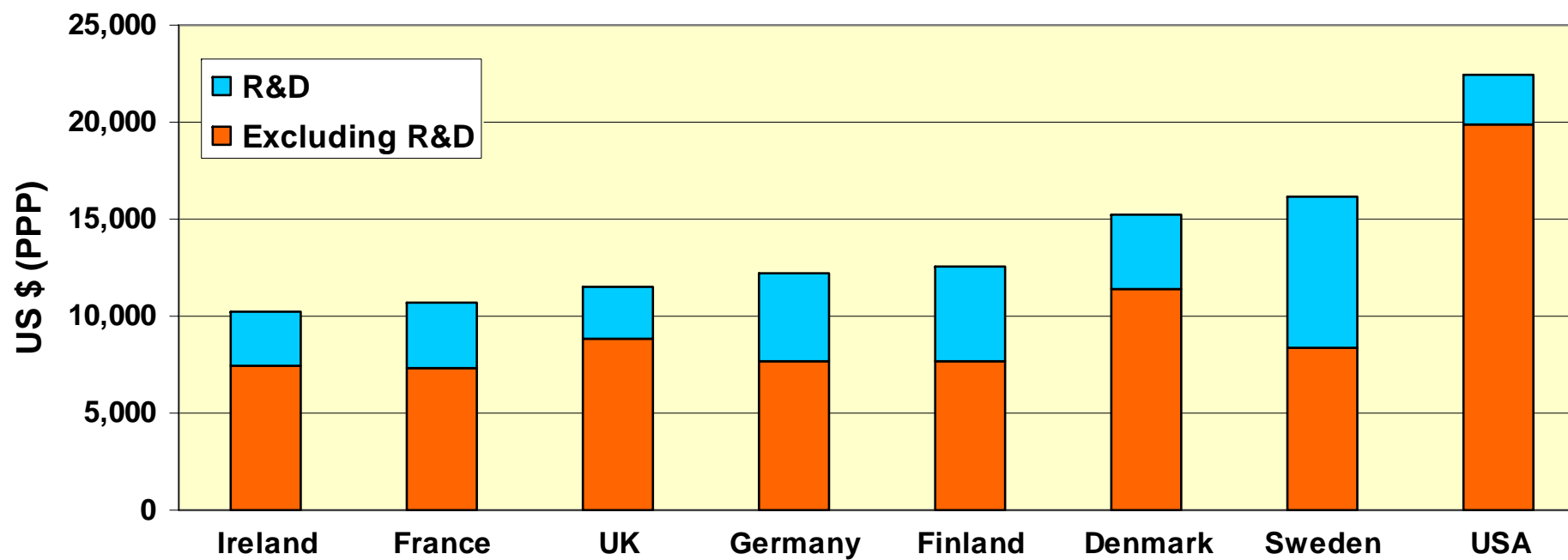
Source: Dept. Education & Science

## Research Performers 2006 (€633 M)



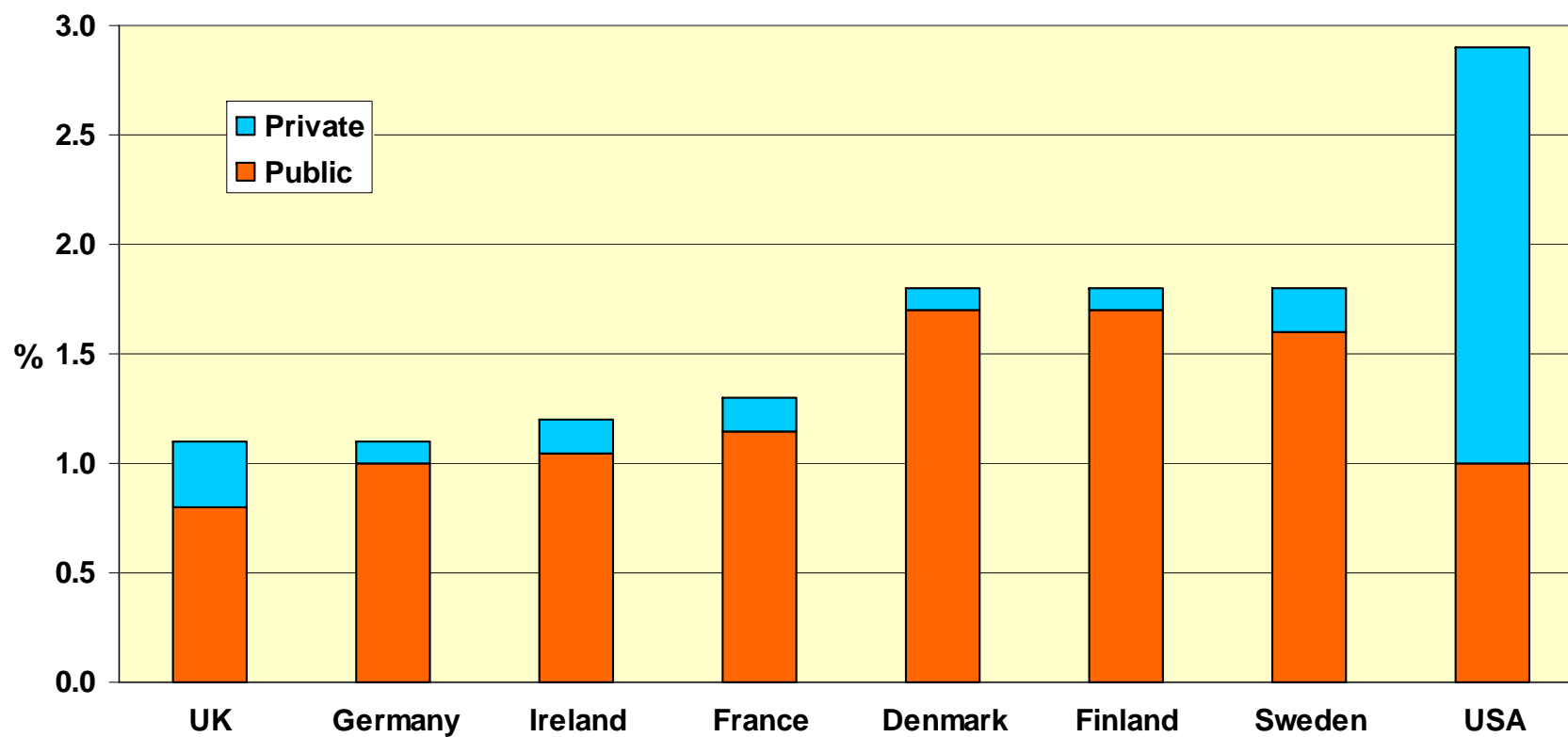
Source: Forfás

## Expenditure per Student in Higher Education (2004)



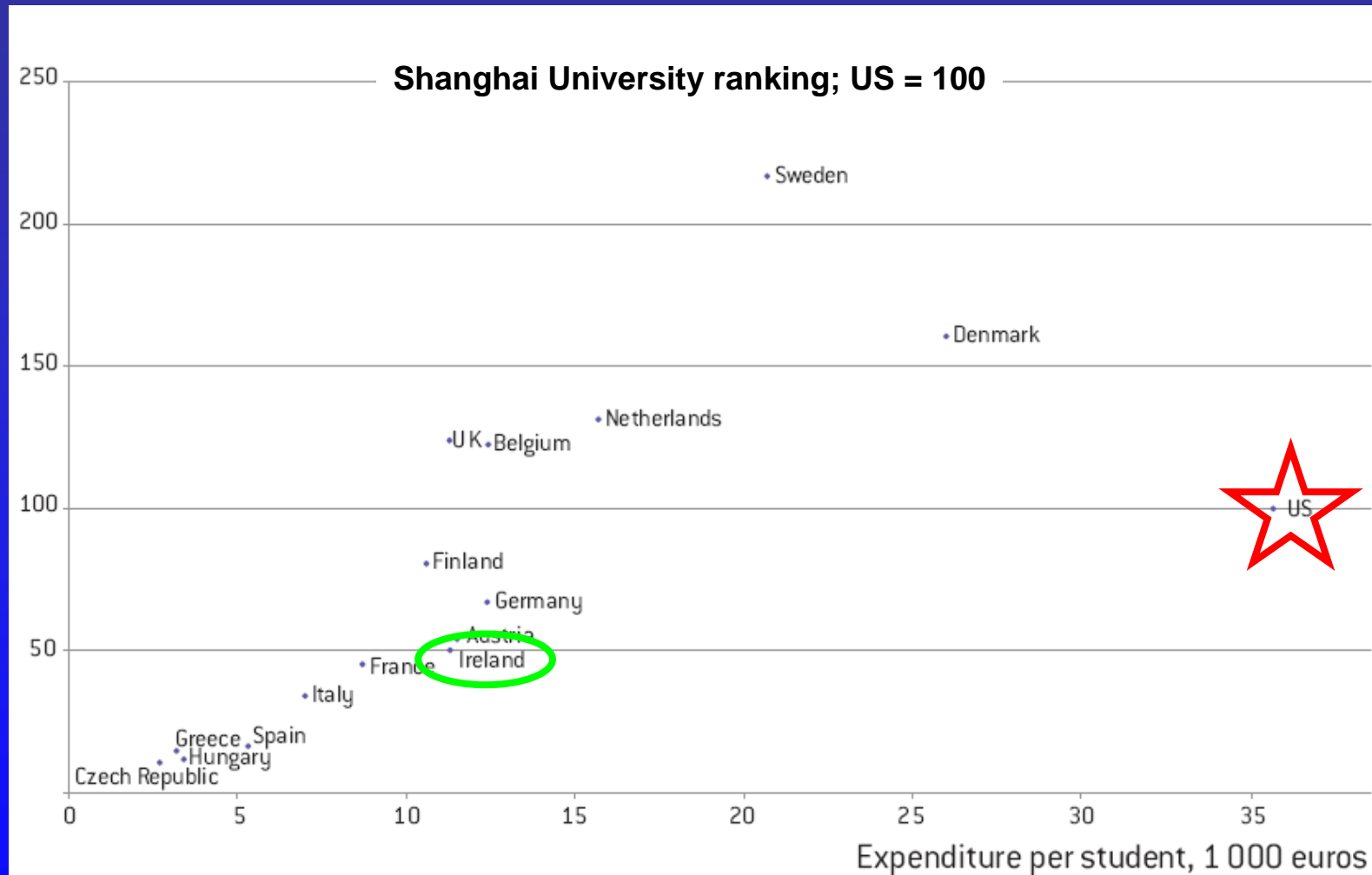
*Source: Education at a Glance, OECD, 2007.*

### Tertiary Education Expenditure as % GDP (2004)



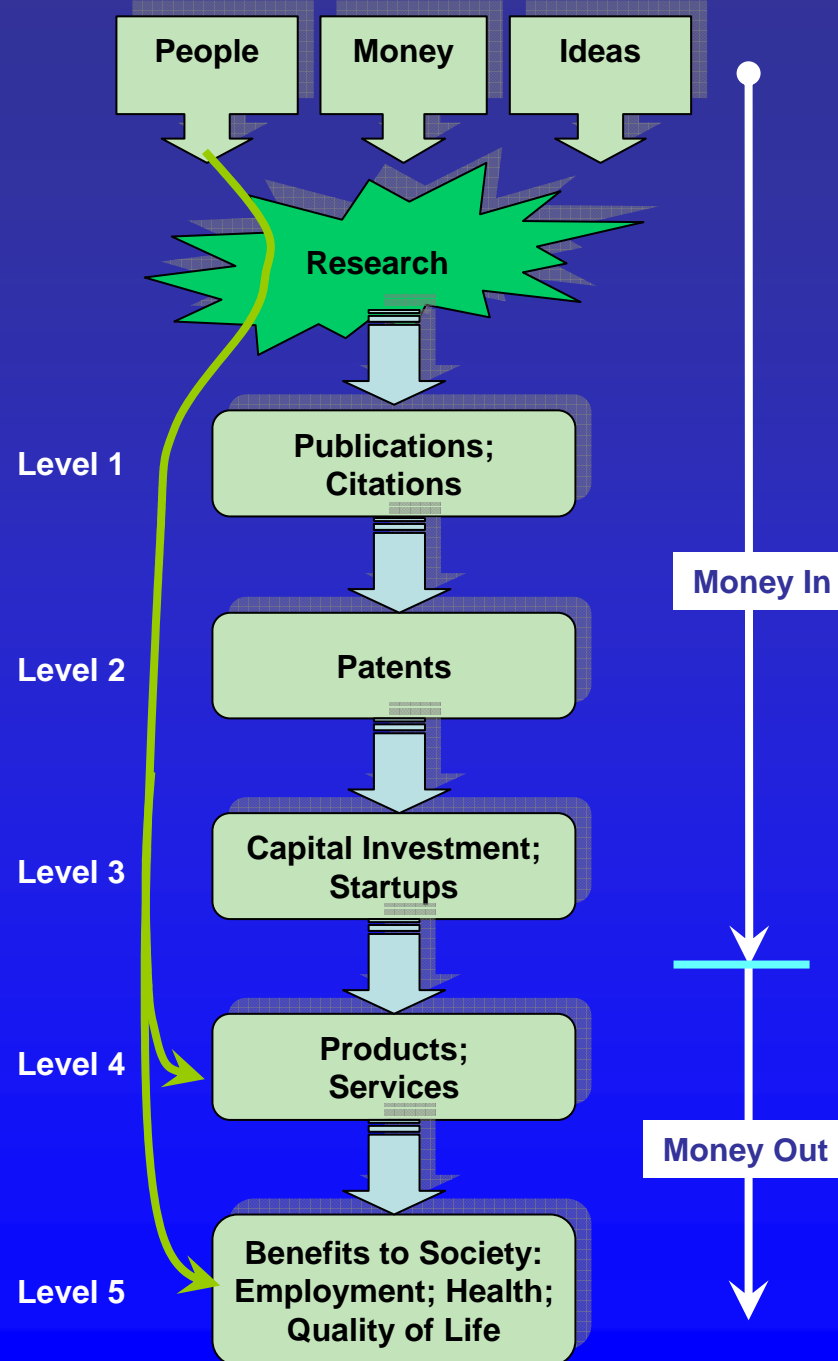
Source: *Education at a Glance, OECD, 2007.*

# Relationship between expenditure per student and country performance



Source: Aghion et al, Bruegel Policy Brief 4, 2007

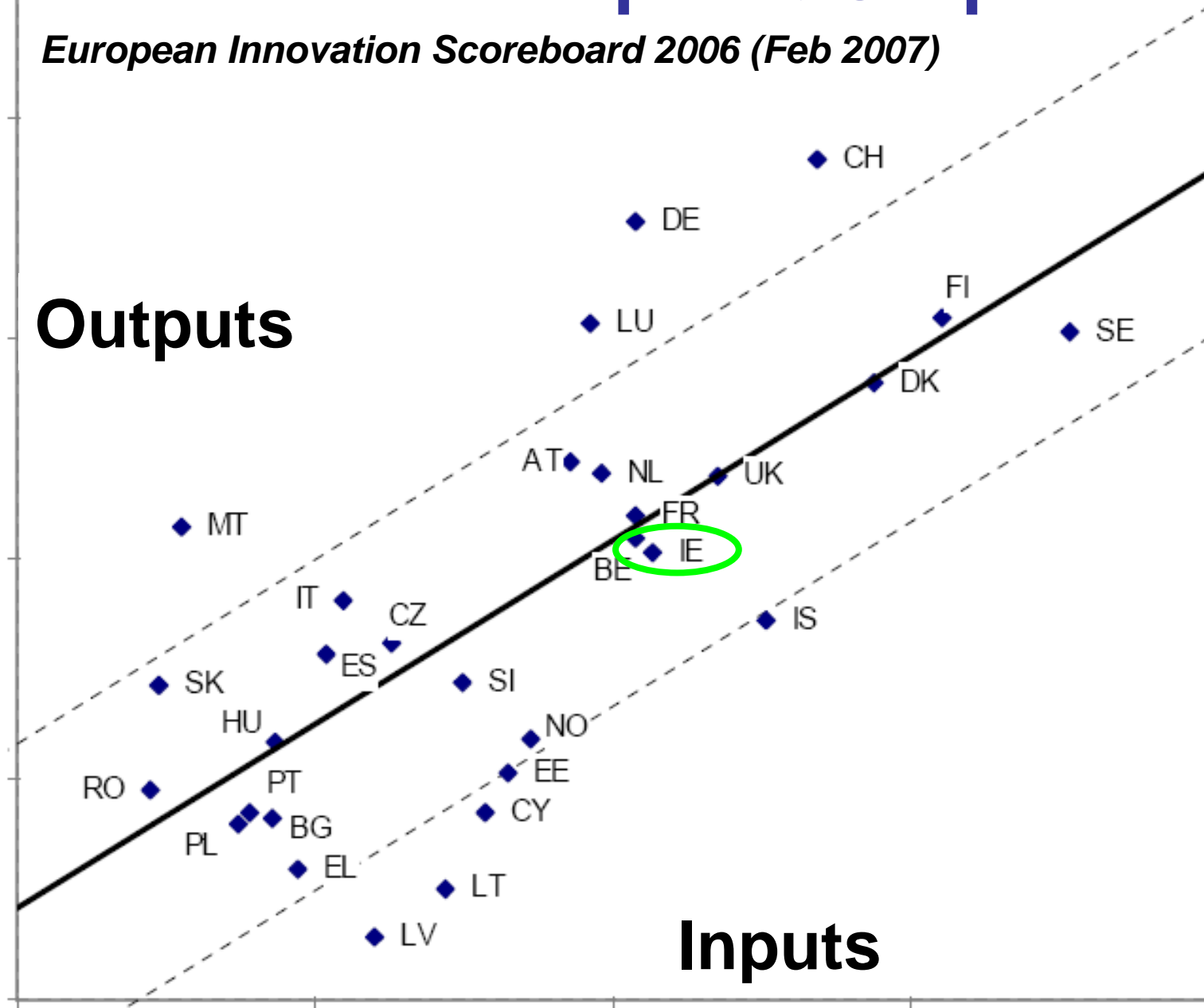
# Returns on Research



# Innovation Input & Output

*European Innovation Scoreboard 2006 (Feb 2007)*

**Outputs**



**Inputs**

**Thank you**

