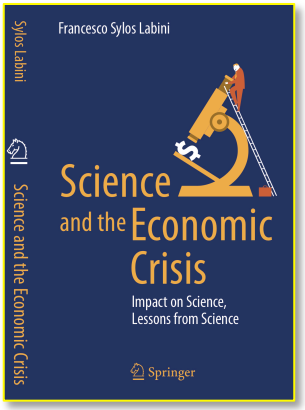
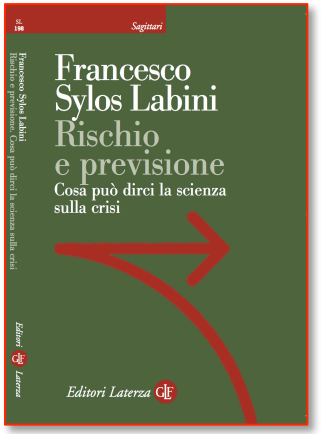


Francesco Sylos Labini



- Enrico Fermi Center
- Institute for Complex Systems, CNR
- **Roars.it**

ROARS
Return On Academic ReSearch

- Founded by **8** scientists (hard/social science, humanities)
- **14** editors (HS, SS, Hum + students, librarian)
- About **200** contributors
- In five years **4000** articles (1-2 articles per day)
- More than **40,000** comments
- More than **17 millions** visits
- Average **10,000** visits/day - peak value **35,000** visits/day
- About **5,000** followers on Twitter
- About **15,000** members in the Facebook group

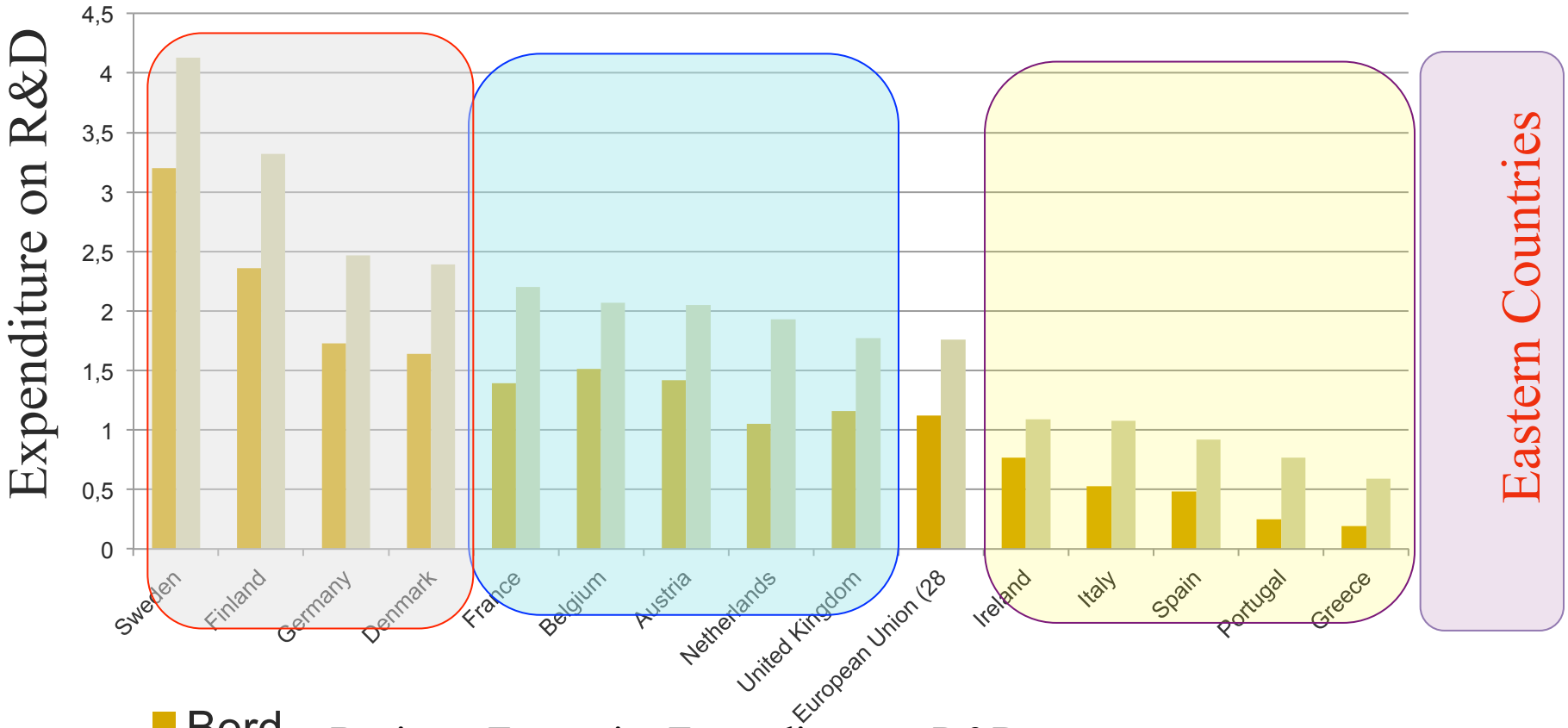
The Lisbon Strategy *(March 2000)*

- Its aim was to make the EU "*the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*", by 2010

- Raise overall R&D investment to **3% of GDP by 2010**.

Four speed Europe

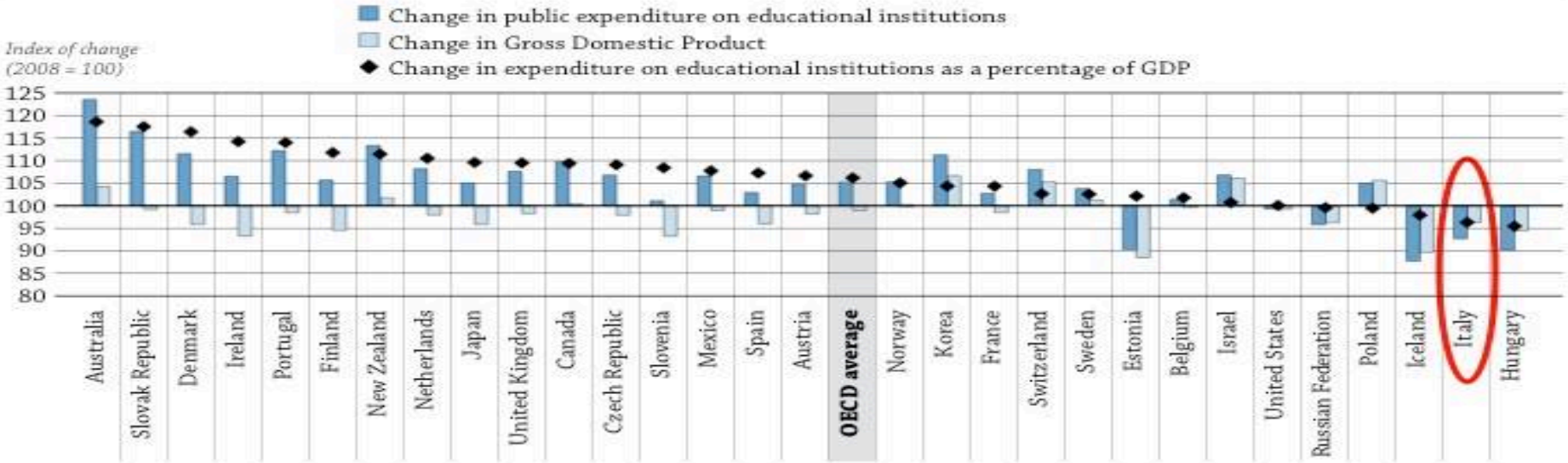
2001

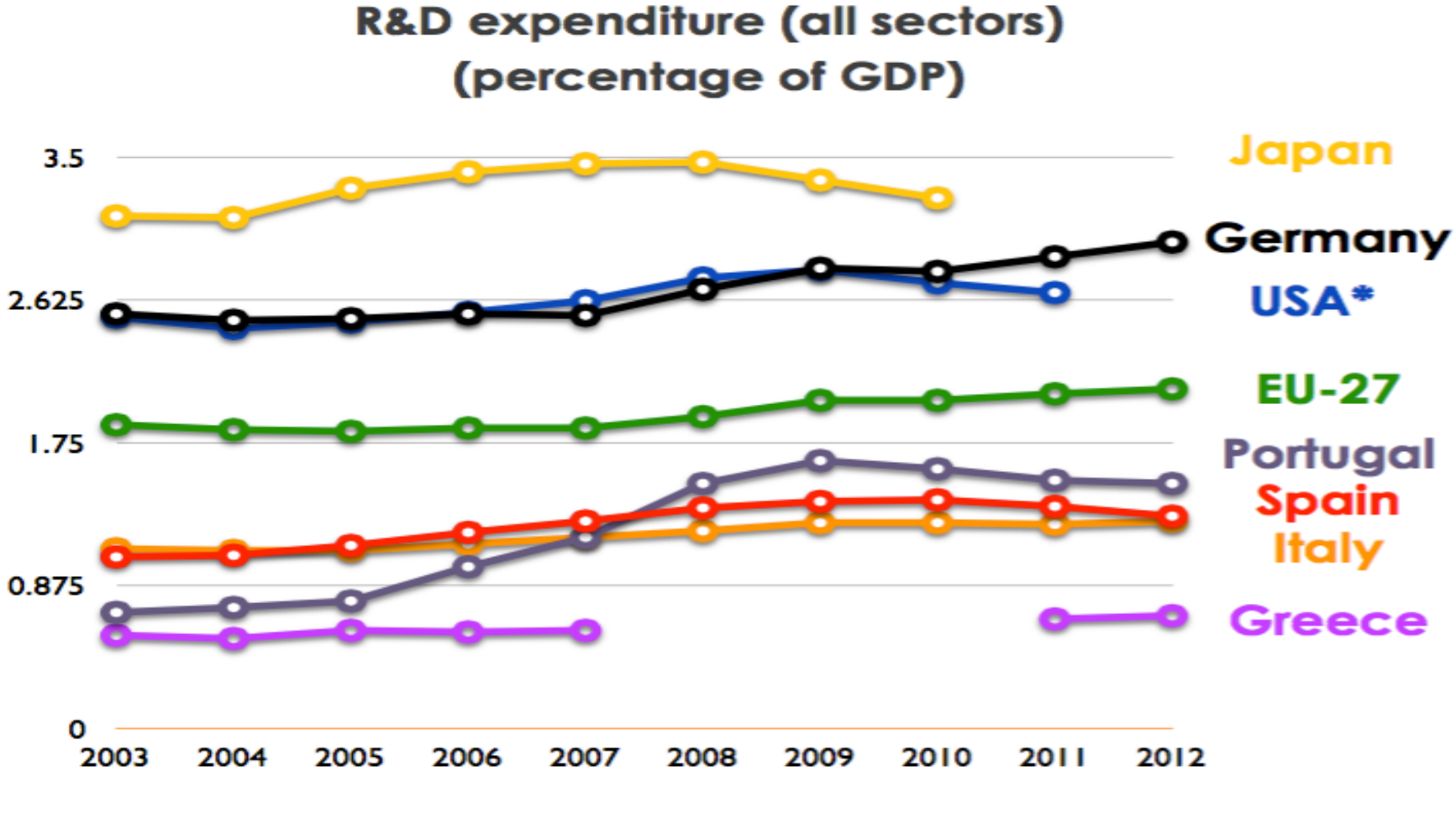


Impatto della crisi economica sulla spesa per istruzione: *Italia, Ungheria, Irlanda e Estonia hanno diminuito la spesa*

Chart B2.3. Impact of the economic crisis on public expenditure on education

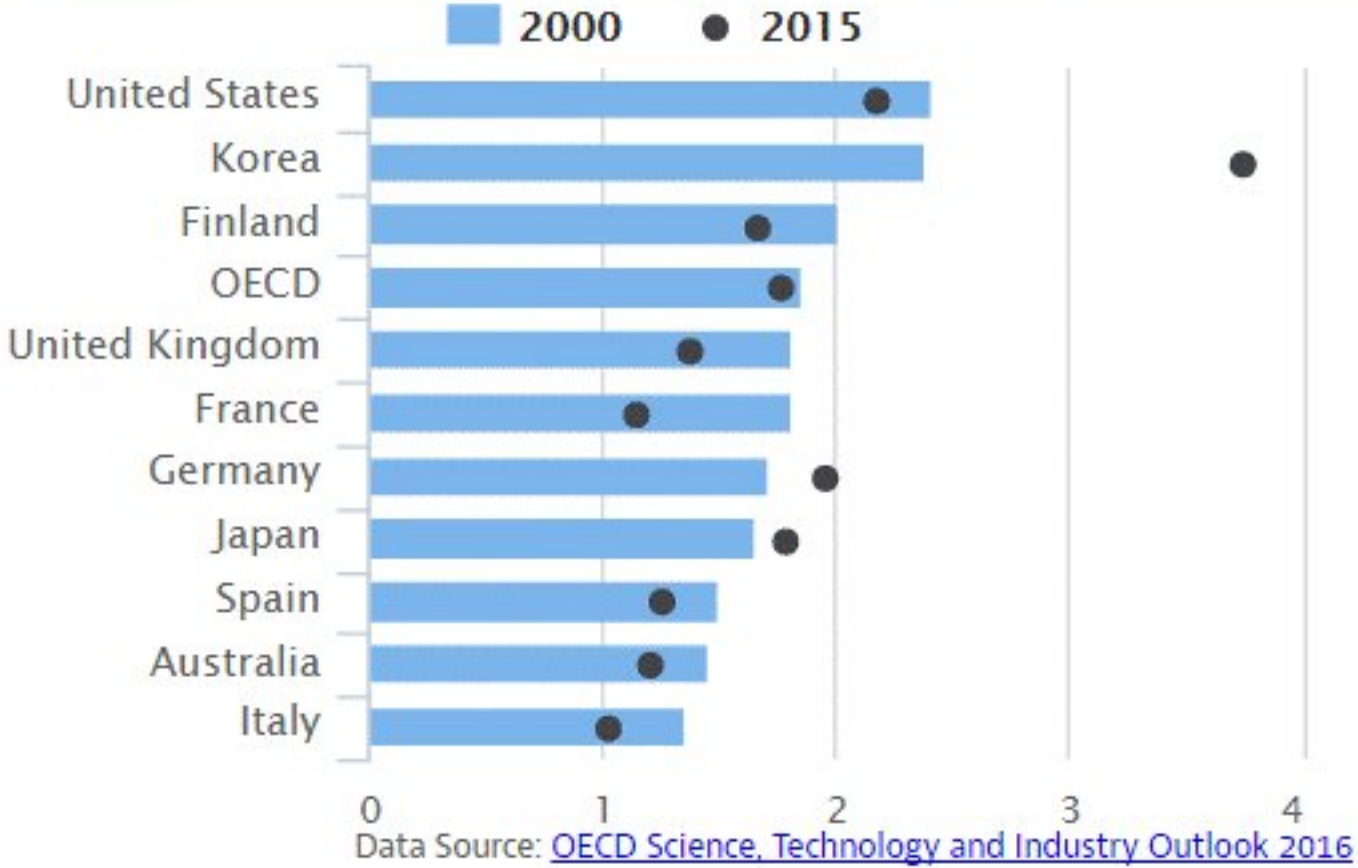
Index of change between 2008 and 2010 in expenditure on educational institutions as a percentage of GDP, for all levels of education (2008=100, 2010 constant prices)




R&D expenditure (all sectors)
(percentage of GDP)
3.5
2.625
1.75
0.875
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Japan
Germany
USA*
EU-27
Portugal
Spain
Italy
Greece
EUROSTAT

Public R&D budgets are under pressure

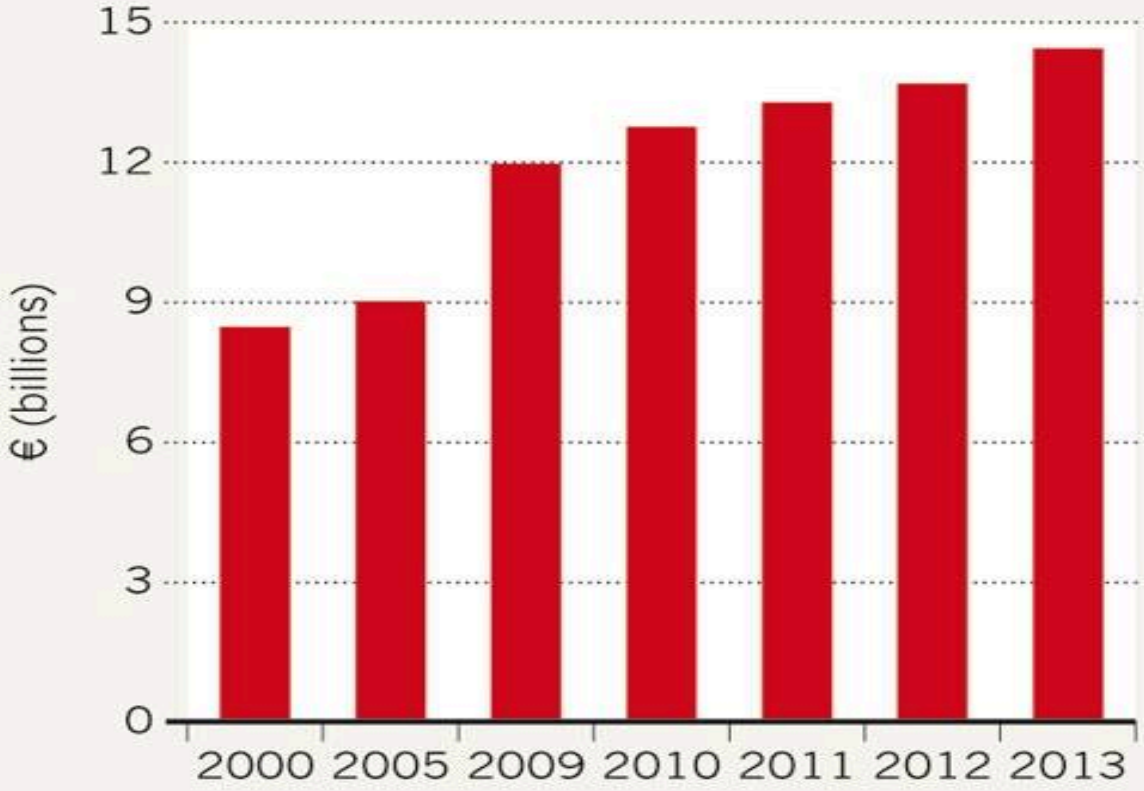
Change in spending on R&D, as a % of total govt spending, 2000 and 2015



Data Source: OECD Science, Technology and Industry Outlook 2016

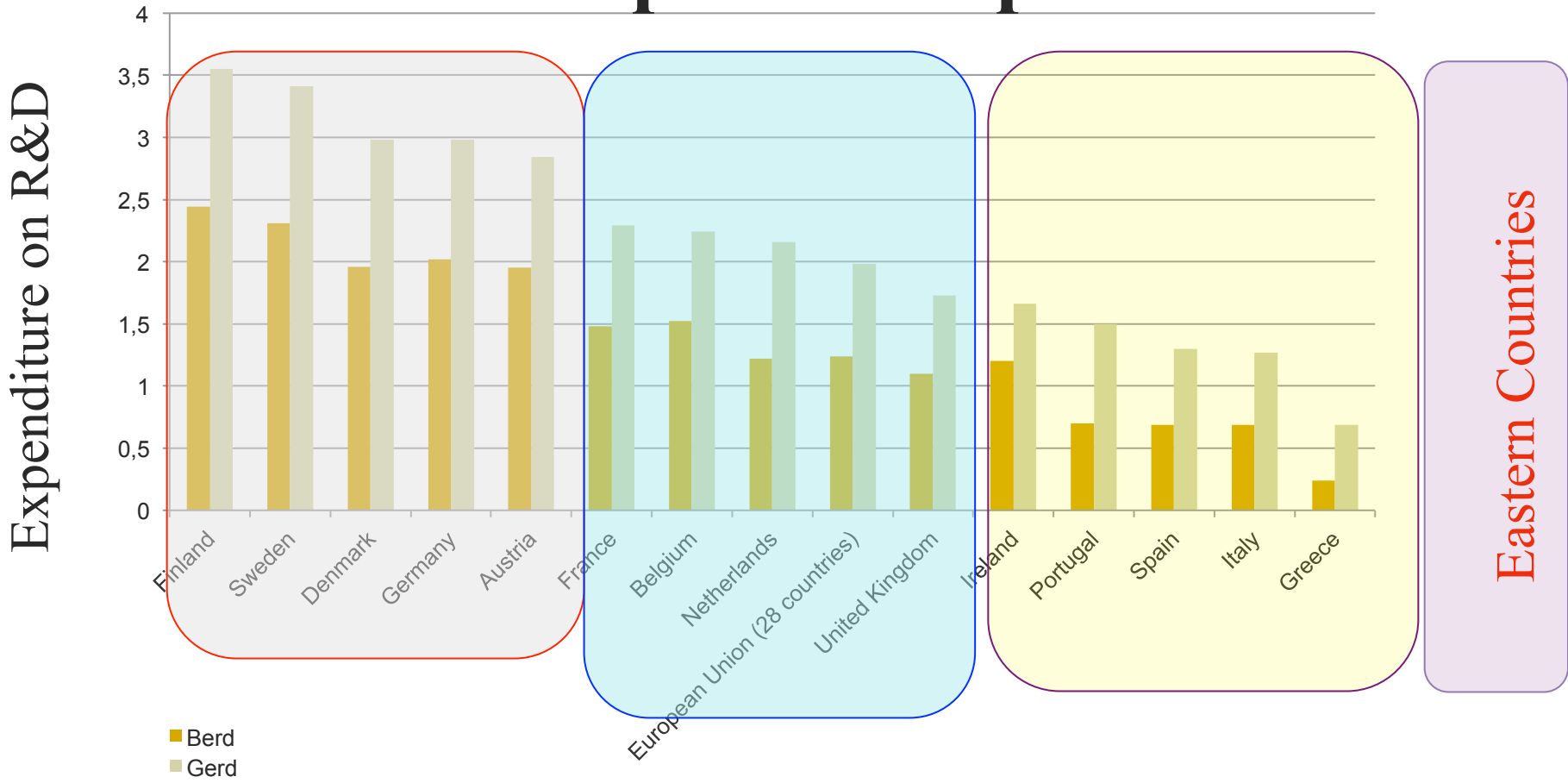
THE RISE OF GERMAN SCIENCE

Since 2000, German science spending has increased by about 70% and is now approaching 3% of GDP.



Four speed Europe

2012



La contrazione dell'universita' italiana

(variazioni rispetto ai valori massimi del 2004-2008)

Immatricolati	**-20%**
Docenti	**-17%**
Personale tecnico amministrativo	**-18%**
Corsi di studio	**-18%**
FFO (valori reali)	**-22%**

Fonte: rapporto RES

Finanziamento pubblico al sistema universitario

	Finanziamento (milioni di euro) 2014	Quota PIL 2014	Variaz. del finanziamento al netto dell'inflazione (2008-2014)
Francia	**20.120****	**0.99****	**+ 3.9****
Germania	**26.800***	**0.98***	**+ 23.0***
Olanda	**3.295**	**0.54***	**- 0.6**
Regno Unito	**8.690**	**0.51***	**- 35.0**
Spagna	**7.405**	**0.73***	**- 15.0**
Italia	**6.576**	**0.42***	**- 21.0**

* Dato al 2013 (2014 non disponibile)
** Dato al 2012 (2013 non disponibile)

Fonte: Porta et al, Scuola democratica 172015

Fondo di Finanziamento Ordinario per circoscrizione territoriale, 2008 e 2015

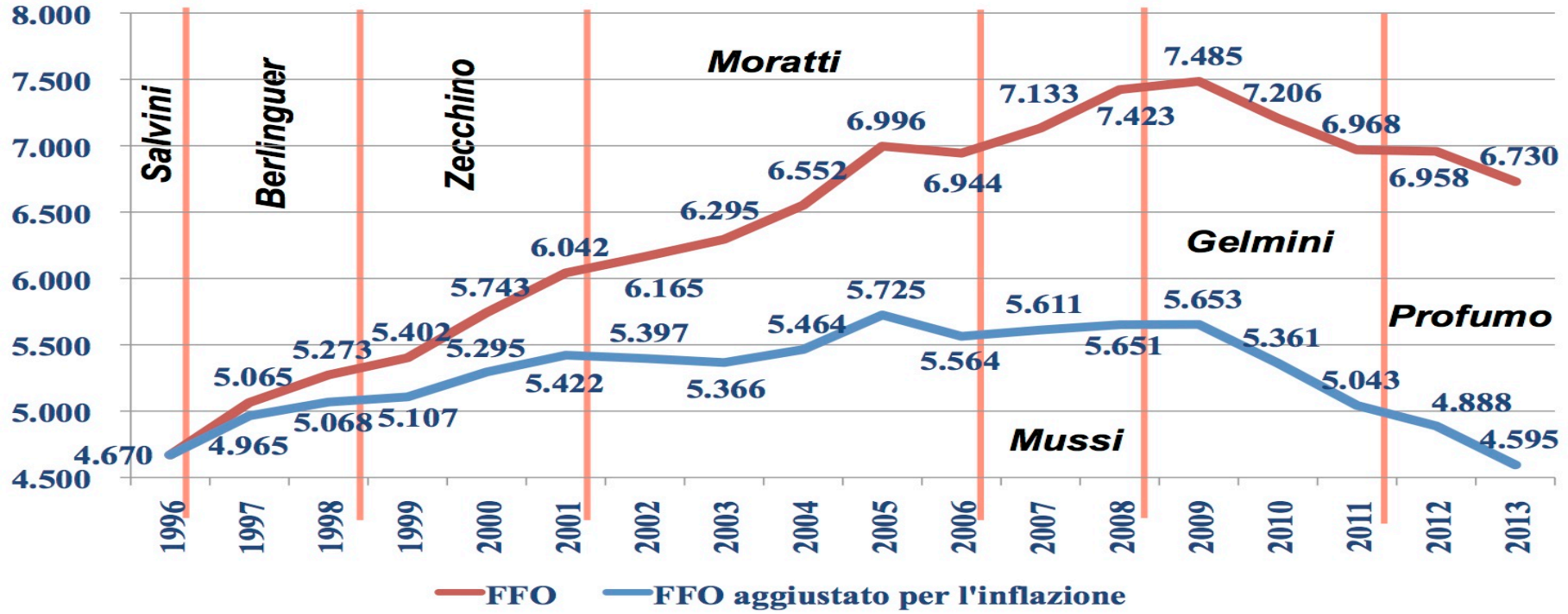
(milioni di euro)

	FFO 2008	%	FFO 2015	%	Variazione	var. %
Nord	2.895	39.7	2.770	42.1	- 125	- 4.3
Centro	1.978	27.1	1.746	26.6	- 232	- 11.7
Sud	1.556	21.4	1.376	20.9	- 181	- 11.6
Isole	860	11.8	681	10.4	- 178	- 20.8
Italia	7.289	100.0	6.572	100.0	- 717	- 9.8

Fonte: Rapporto Res

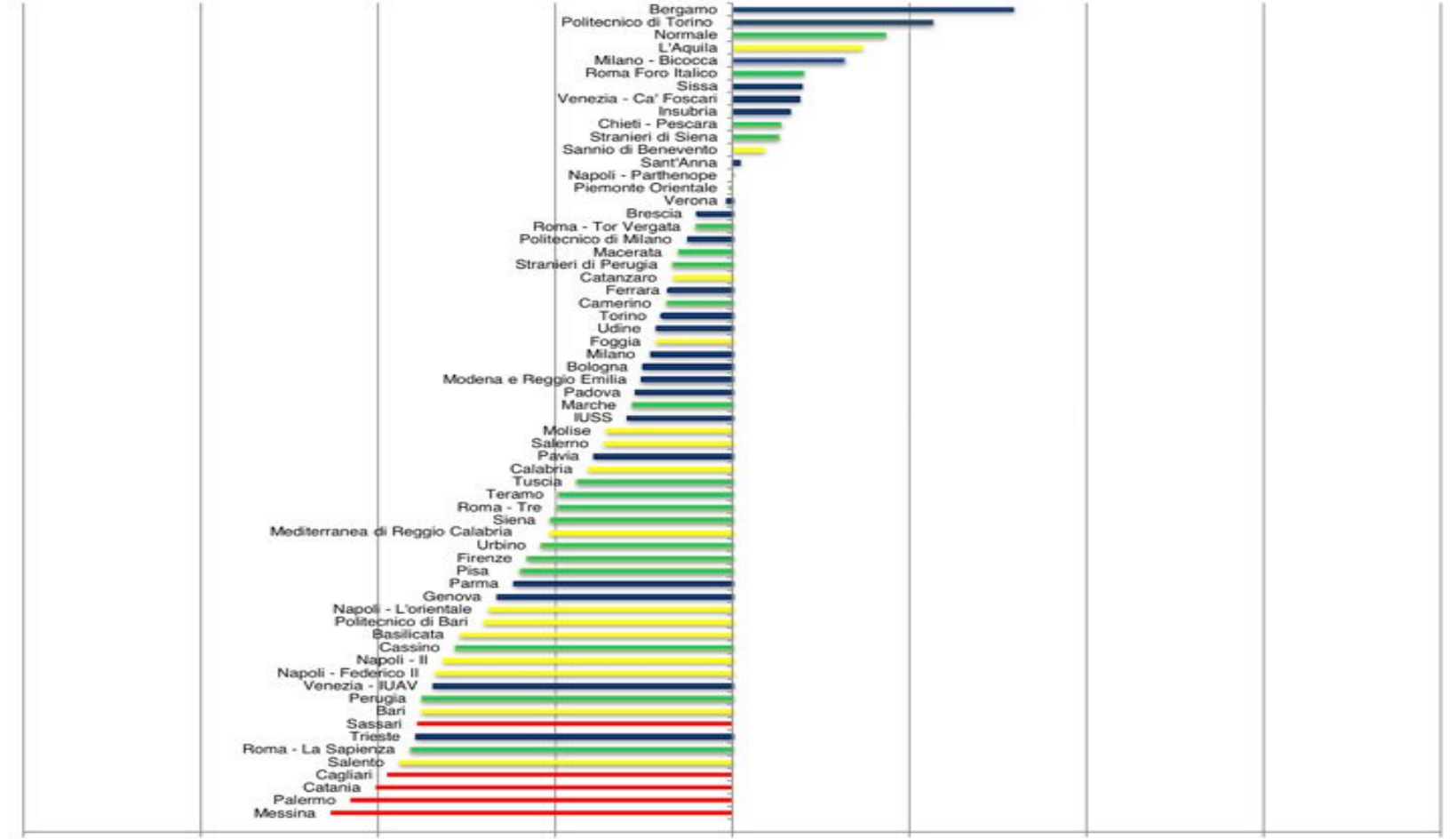
UNIVERSITÀ DEGLI STUDI DI PADOVA

National University Budget: -20%



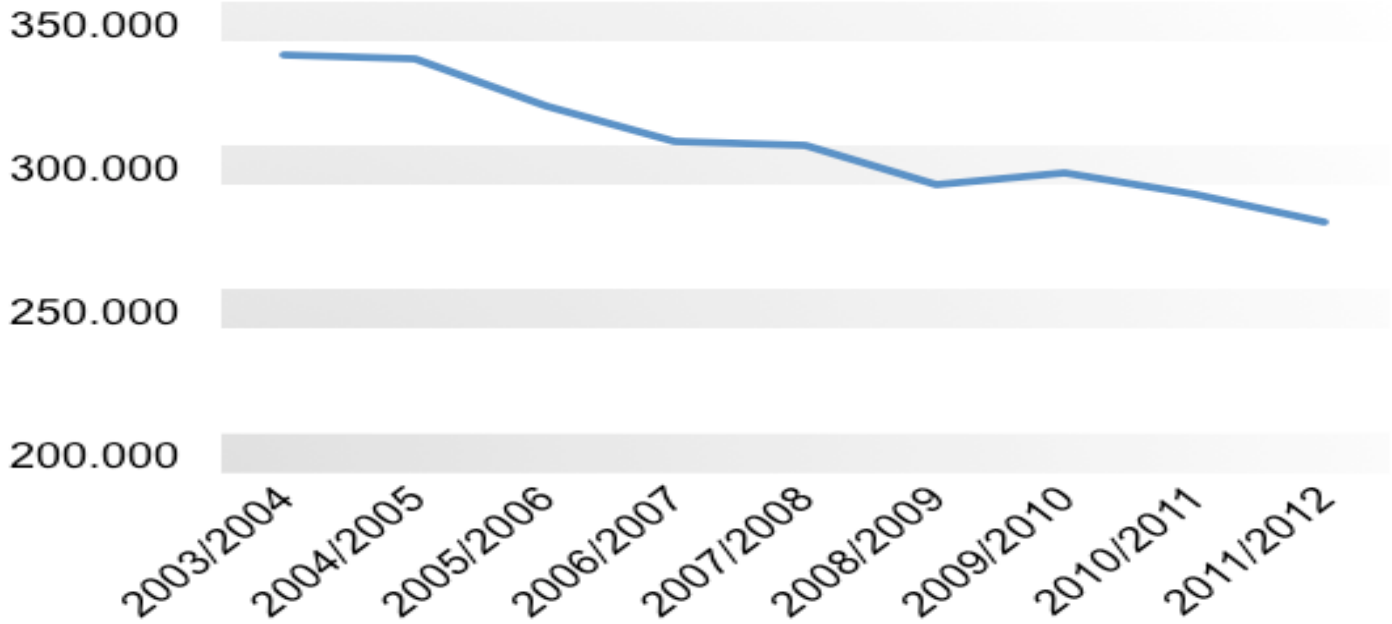
VALORI IN MLN €

Variazione del FFO fra 2008 e 2015

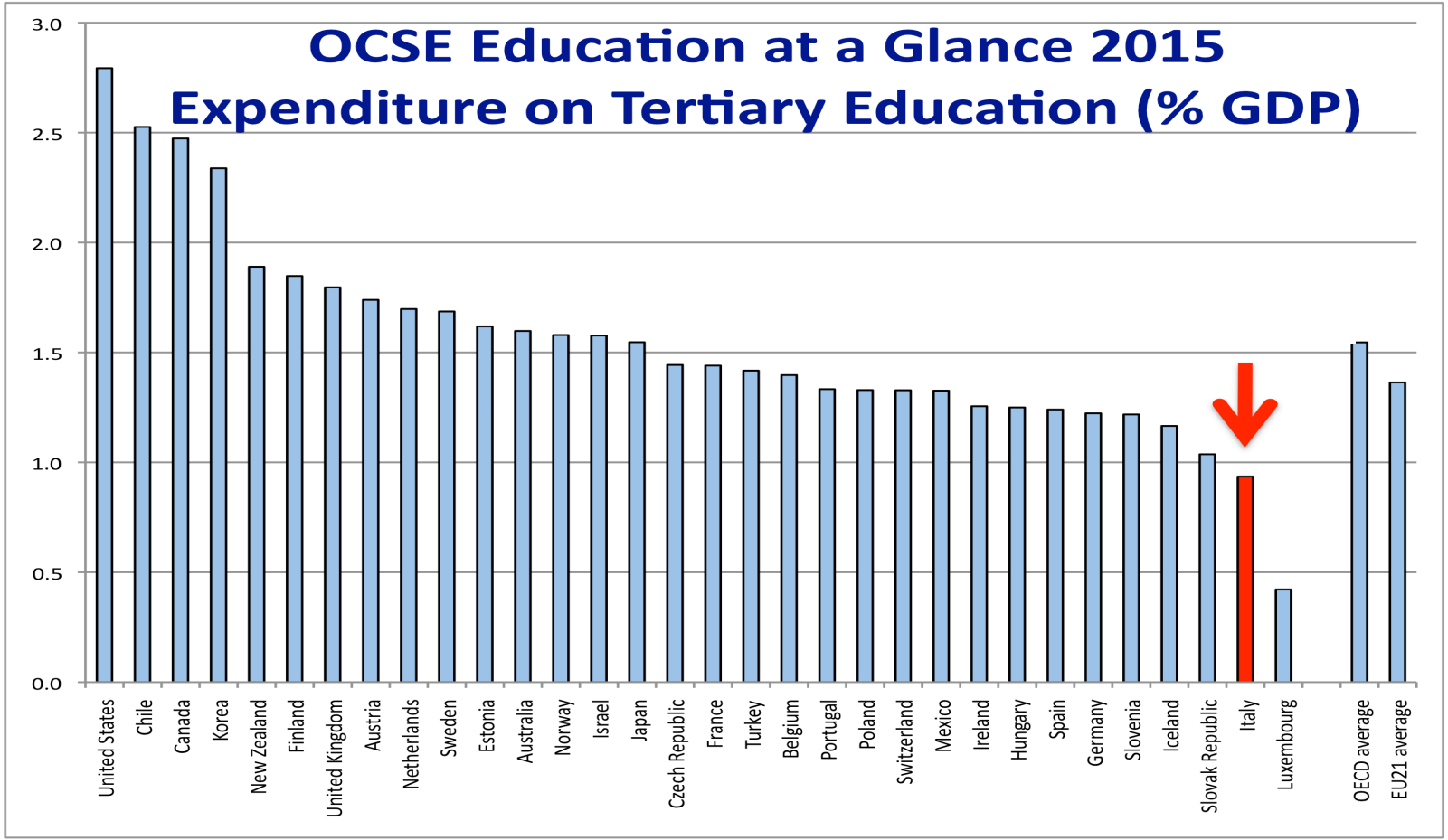


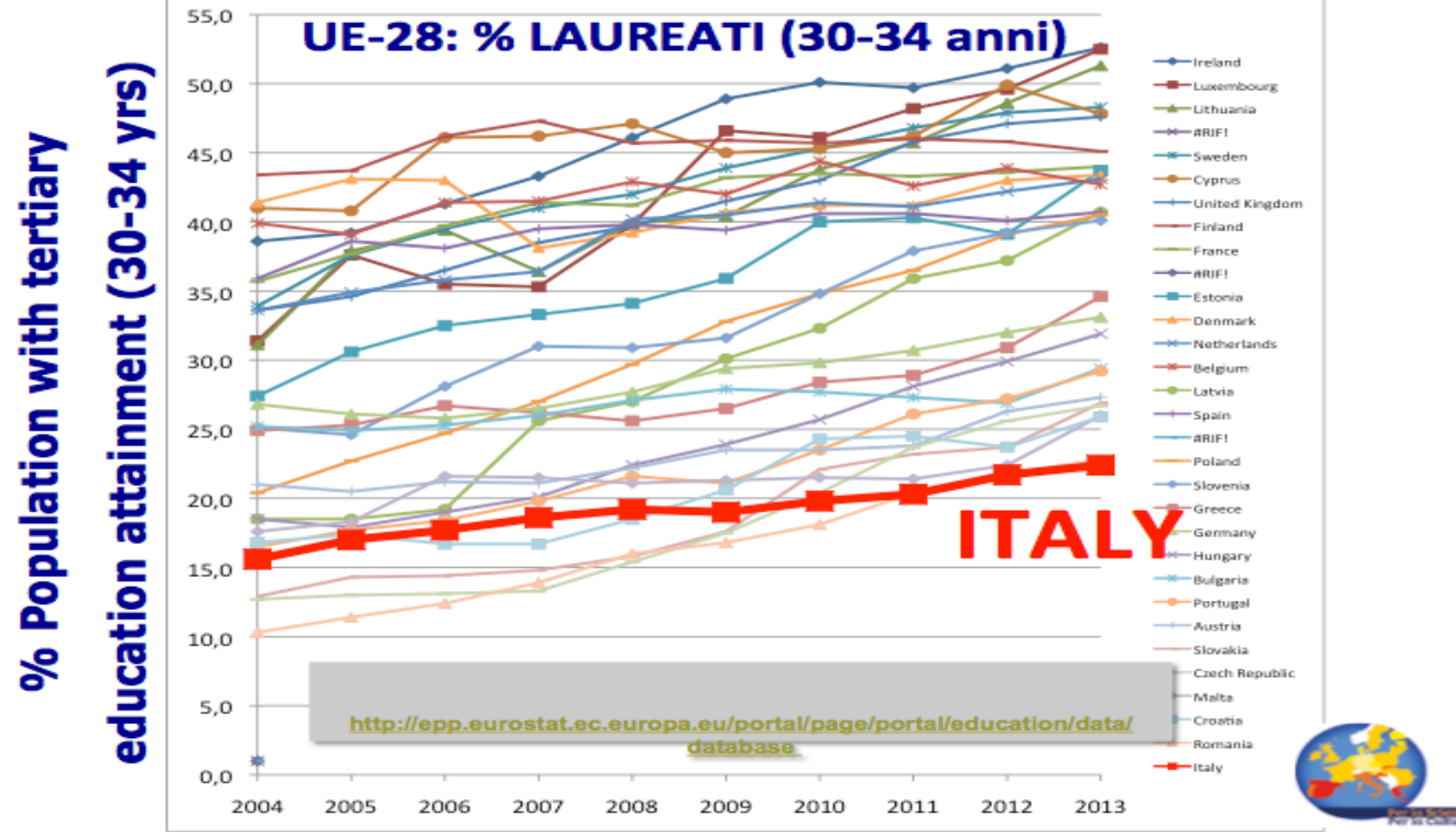
Fonte: Elaborazioni su dati MIUR

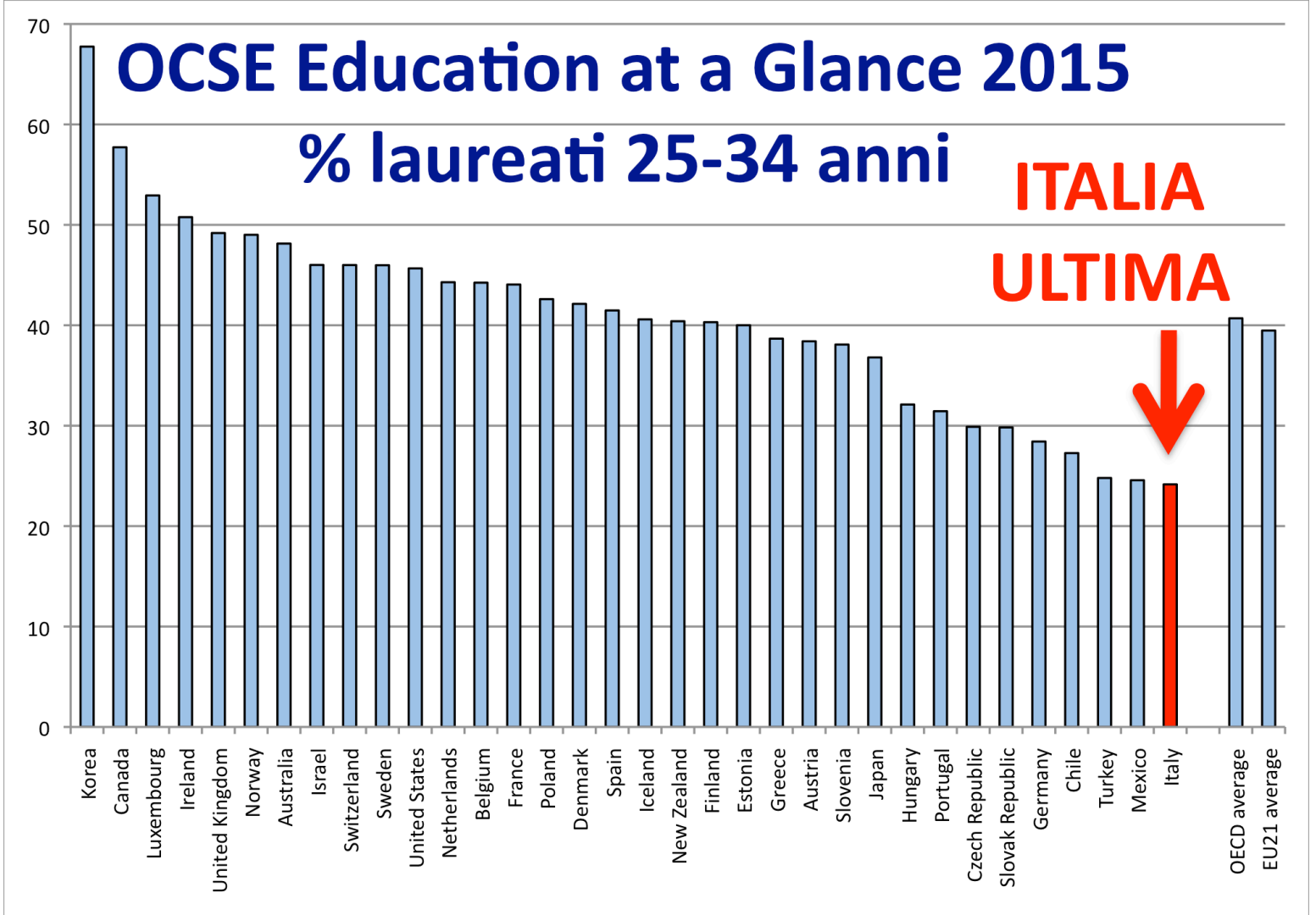
Number of enrolled students (-20% in 10 years)



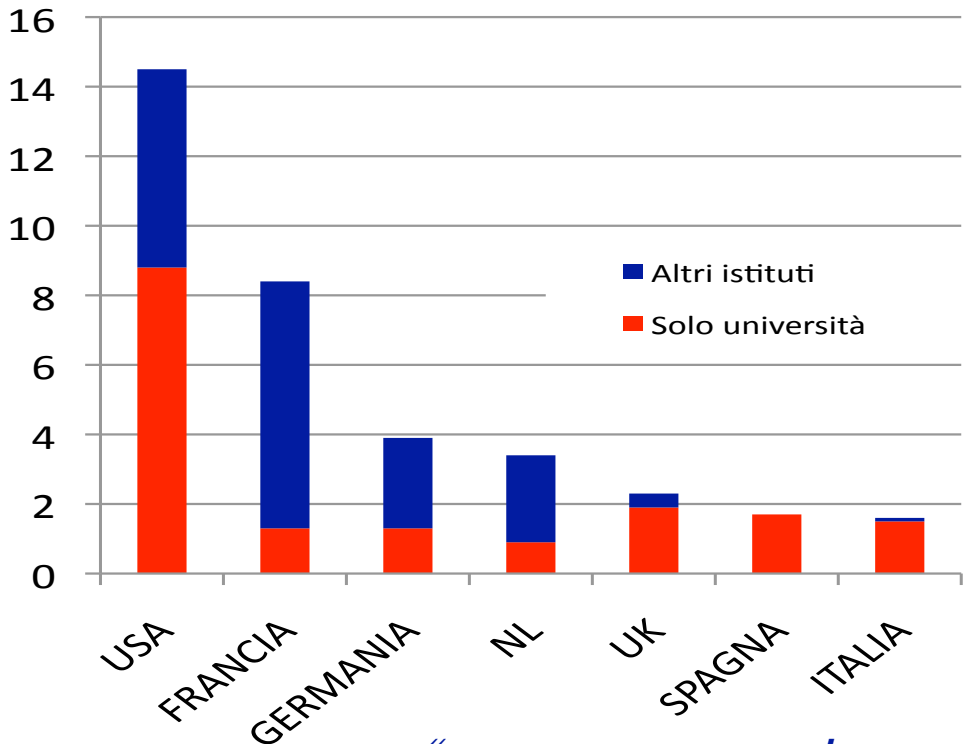
MIUR DATA


OCSE Education at a Glance 2015
Expenditure on Tertiary Education (% GDP)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
United States
Chile
Canada
Korea
New Zealand
Finland
United Kingdom
Austria
Netherlands
Sweden
Estonia
Australia
Norway
Israel
Japan
Czech Republic
France
Turkey
Belgium
Portugal
Poland
Switzerland
Mexico
Ireland
Hungary
Spain
Germany
Slovenia
Iceland
Slovak Republic
Italy
Luxembourg
OECD average
EU21 average


% Population with tertiary education attainment (30-34 yrs)
UE-28: % LAUREATI (30-34 anni)
55,0
50,0
45,0
40,0
35,0
30,0
25,0
20,0
15,0
10,0
5,0
0,0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
ITALY
http://epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database
Ireland
Luxembourg
Lithuania
#RIF!
Sweden
Cyprus
United Kingdom
Finland
France
#RIF!
Estonia
Denmark
Netherlands
Belgium
Latvia
Spain
#RIF!
Poland
Slovenia
Greece
Germany
Hungary
Bulgaria
Portugal
Austria
Slovakia
Czech Republic
Malta
Croatia
Romania
Italy


OCSE Education at a Glance 2015
% laureati 25-34 anni
ITALIA
ULTIMA
70
60
50
40
30
20
10
0
Korea
Canada
Luxembourg
Ireland
United Kingdom
Norway
Australia
Israel
Switzerland
Sweden
United States
Netherlands
Belgium
France
Poland
Denmark
Spain
Iceland
New Zealand
Finland
Estonia
Greece
Austria
Slovenia
Japan
Hungary
Portugal
Czech Republic
Slovak Republic
Germany
Chile
Turkey
Mexico
Italy
OECD average
EU21 average

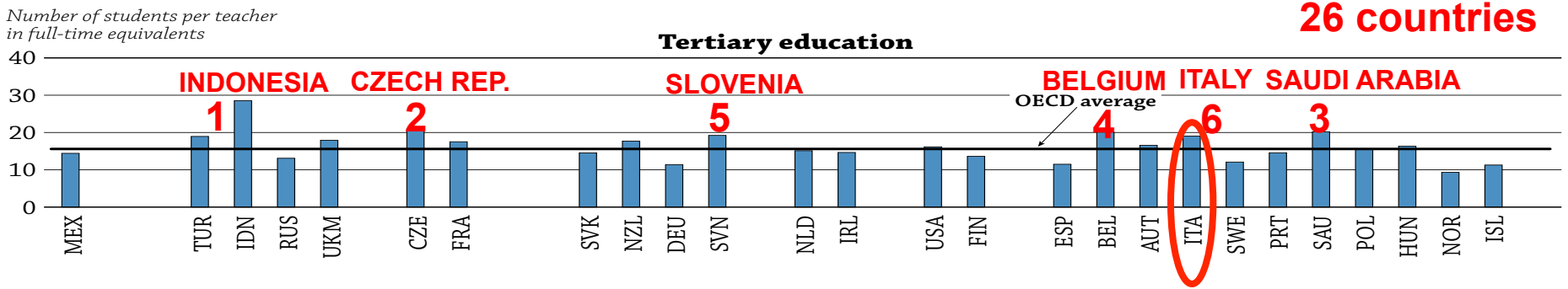
UNIVERSITÀ ED ALTRI ISTITUTI DI FORMAZIONE TERZIARIA PER MILIONE DI ABITANTI



Fonte dei dati: "Malata e denigrata : l'universita italiana a confronto con l'Europa" (a cura di M. Regini, Donzelli 2009)

Rapporto studenti/docenti: su 26 nazioni solo 5 stanno peggio di noi

Chart D2.3. Ratio of students to teaching staff in educational institutions, by level of education (2011)



Countries are ranked in descending order of students to teaching staff ratios in primary education.

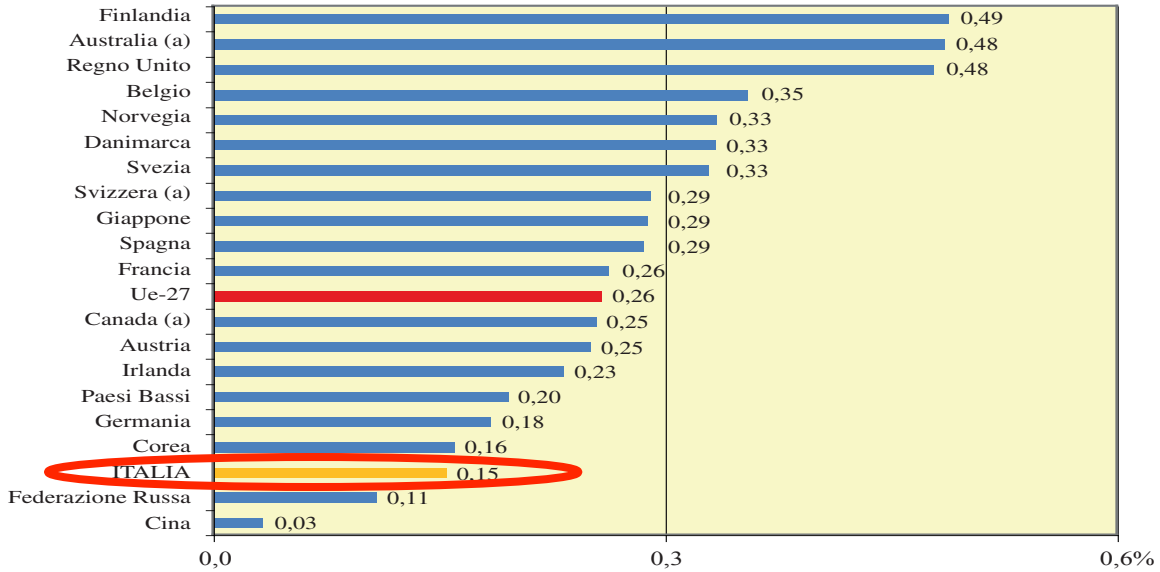
Source: OECD. China, Indonesia and Saudi Arabia: UNESCO Institute for Statistics (World Education Indicators Programme). Table D2.2. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).

Please refer to the Reader's Guide for list of country codes for country names used in this chart.

StatLink http://dx.doi.org/10.1787/888932851706

Ricercatori accademici (% occupati): l'Italia è 18° su 20

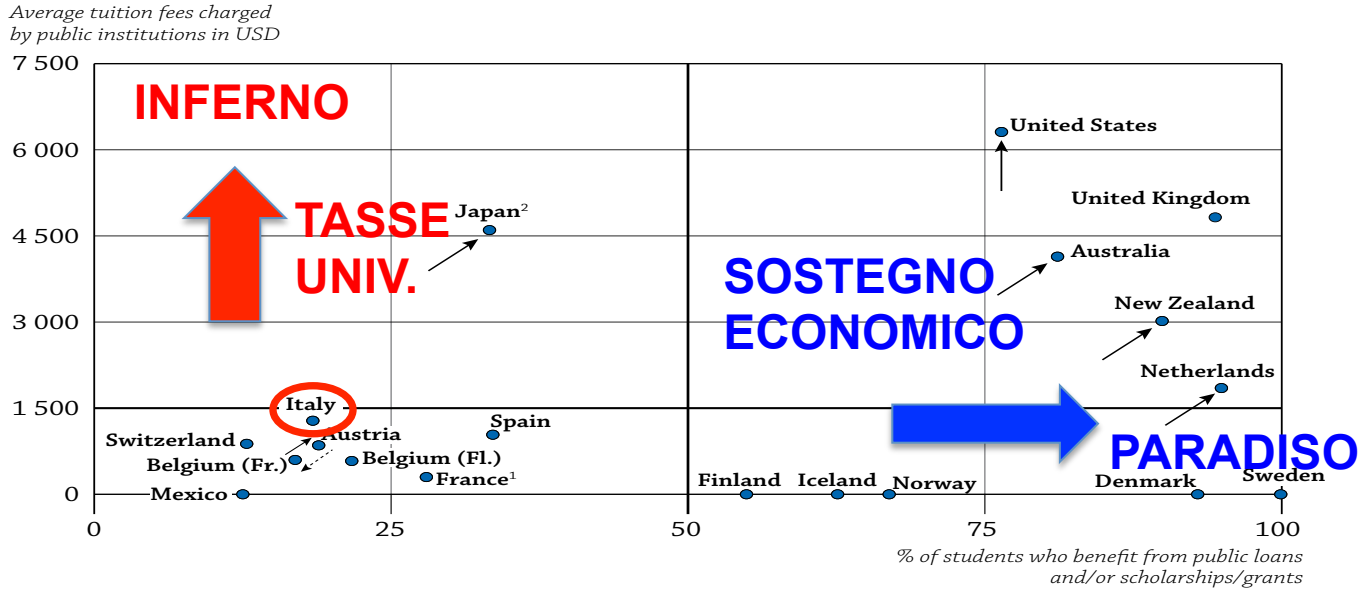
Fig. 3.14 - Il personale ricercatore delle università in rapporto agli occupati in alcuni paesi dell'Ocse e del resto del mondo, 2007



Note: (a) 2006.
Fonte: Elaborazione del Ceris-Cnr su dati Ocse.

Chart B5.1. Relationship between average tuition fees charged by public institutions and proportion of students who benefit from public loans and/or scholarships/grants in tertiary-type A education (academic year 2008-09)

For full-time national students, in USD converted using PPPs



1. Average tuition fees from USD 190 to 1 309 for university programmes dependent on the Ministry of Education.
2. Tuition fees refer to public institutions but more than two-thirds of students are enrolled in private institutions.

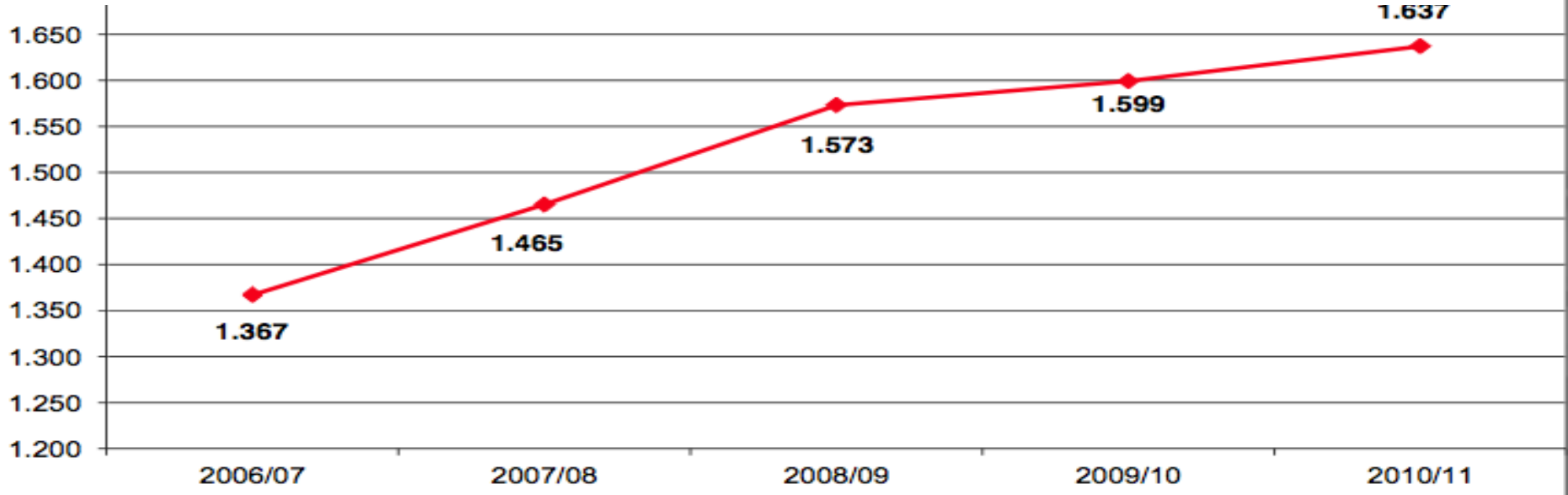
Source: OECD. Tables B5.1 and B5.2. See Annex 3 for notes (*www.oecd.org/edu/eag2012*).

StatLink http://dx.doi.org/10.1787/888932662770

How to read this chart

This graph shows the relationship, at the tertiary-type A level of education, between annual tuition fees charged by educational institutions and public support to households for students' living costs. Arrows show how the average tuition fees and the proportion of students who benefit from public support have changed since 1995 following reforms (solid arrow) and how they may change due to policy changes that have been planned since 2008-09 (dashed arrow).

Tasse universitarie

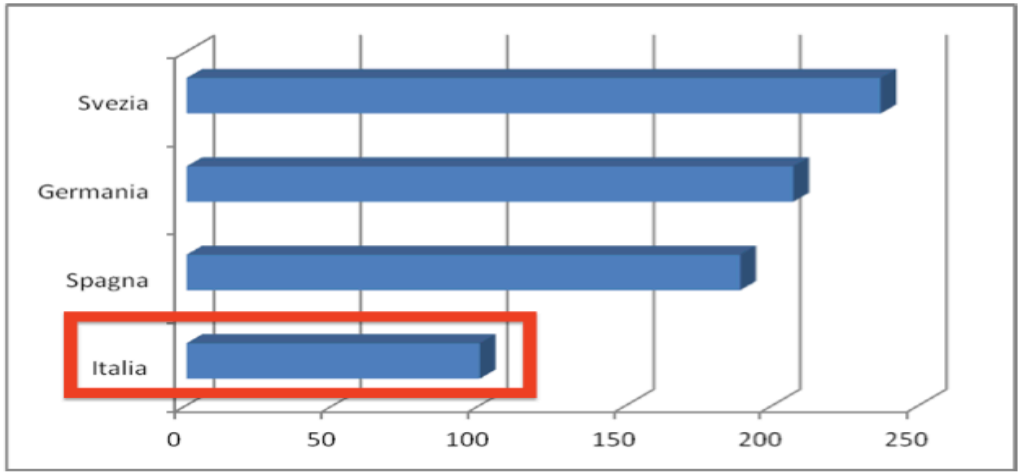


Fonte: Ufficio statistica Miur e Nucleo di valutazione Università di Catania

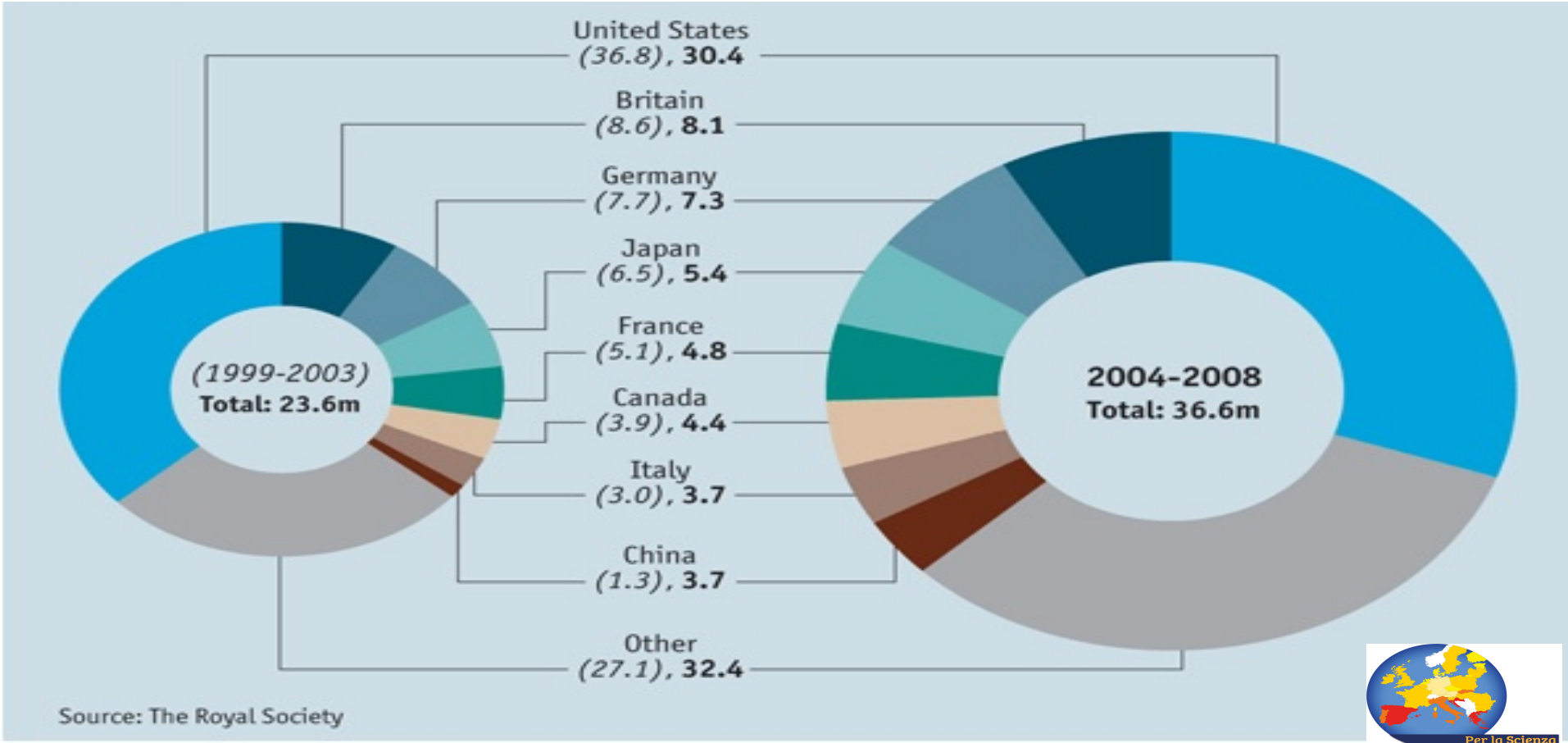
Spesa per laureato: meno della metà che in Svezia e Germania

Fatto 100 il costo di un laureato italiano nel 2009 (43.218 dollari), prima quindi che si verificassero i tagli degli ultimi governi, a parità di potere d'acquisto, un laureato spagnolo costava 182, uno tedesco 207 e uno svedese 239 (OECD, 2012b).

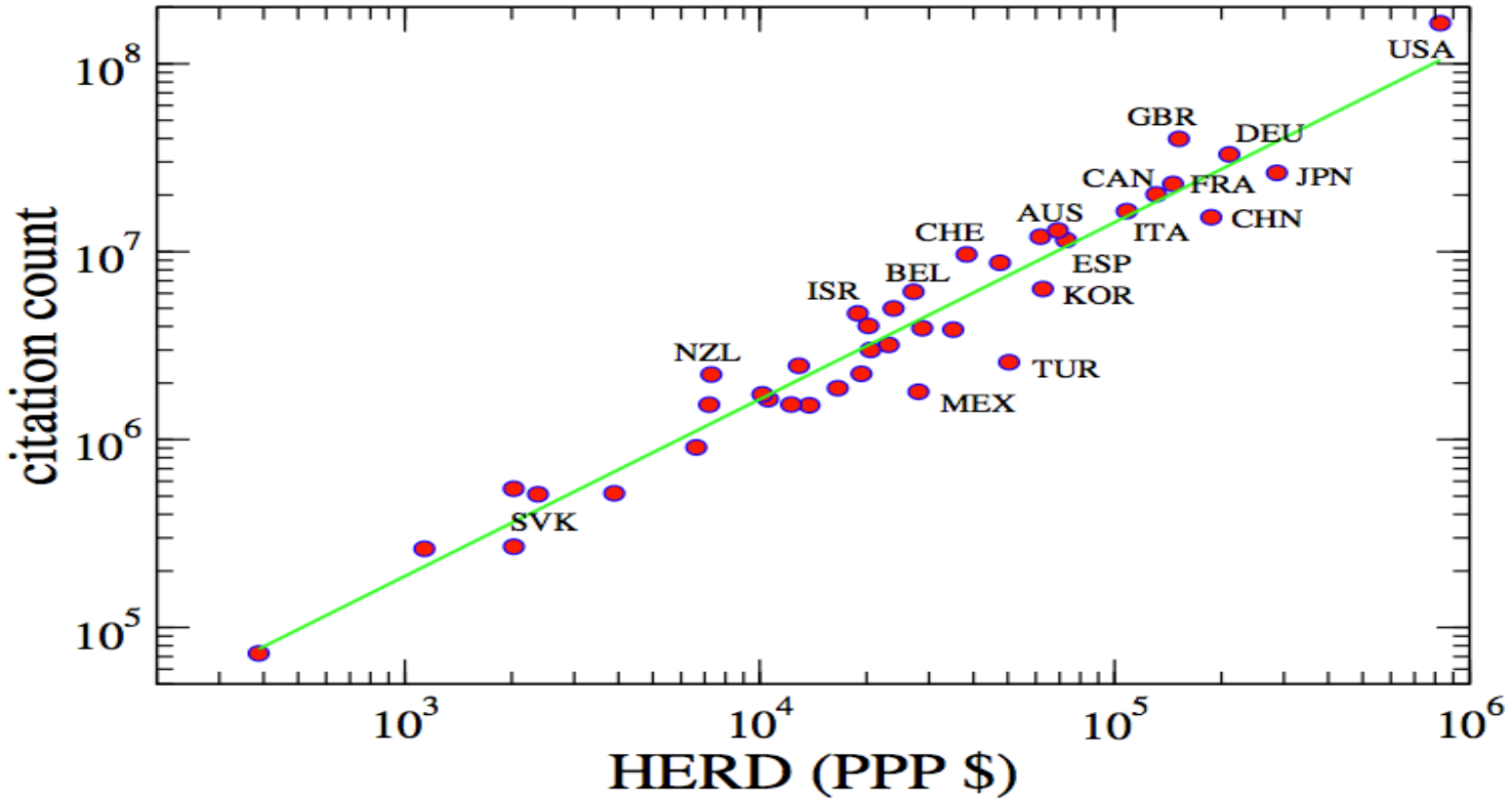
CONFRONTO SUL COSTO DEI LAUREATI (NUMERI INDICE)



Italia: 7° per citazioni di articoli scientifici



Ottiene più citazioni chi più spende per R&D accademica (= HERD)



Source of bibliometric data: Scopus
HERD = Higher education Expenditure on R&D (source: OECD)

Figure 6.2 Articles (university sector) per unit spend on HERD for UK and comparators, 2006-2010.

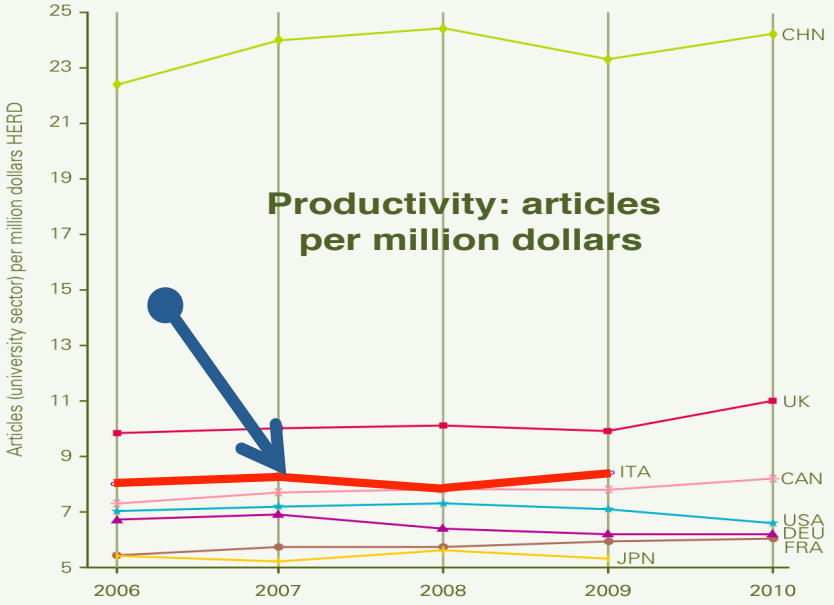
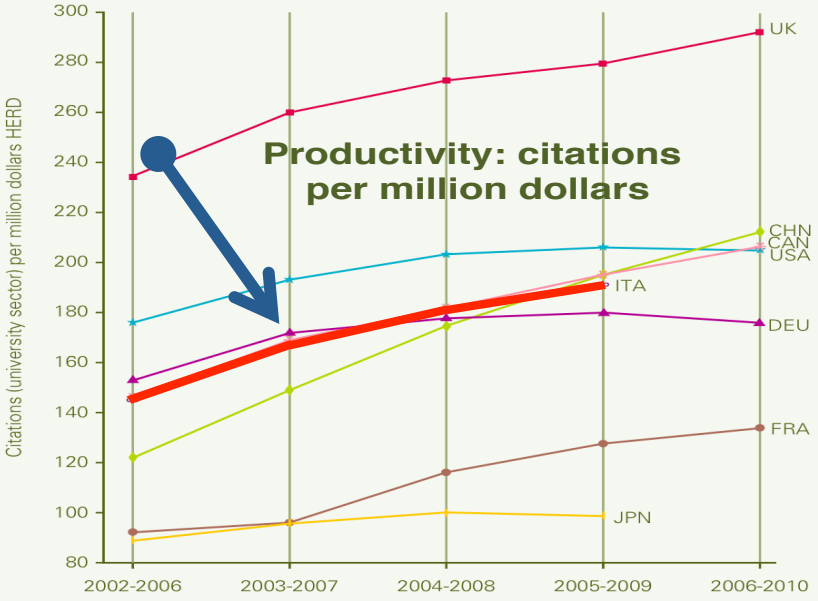
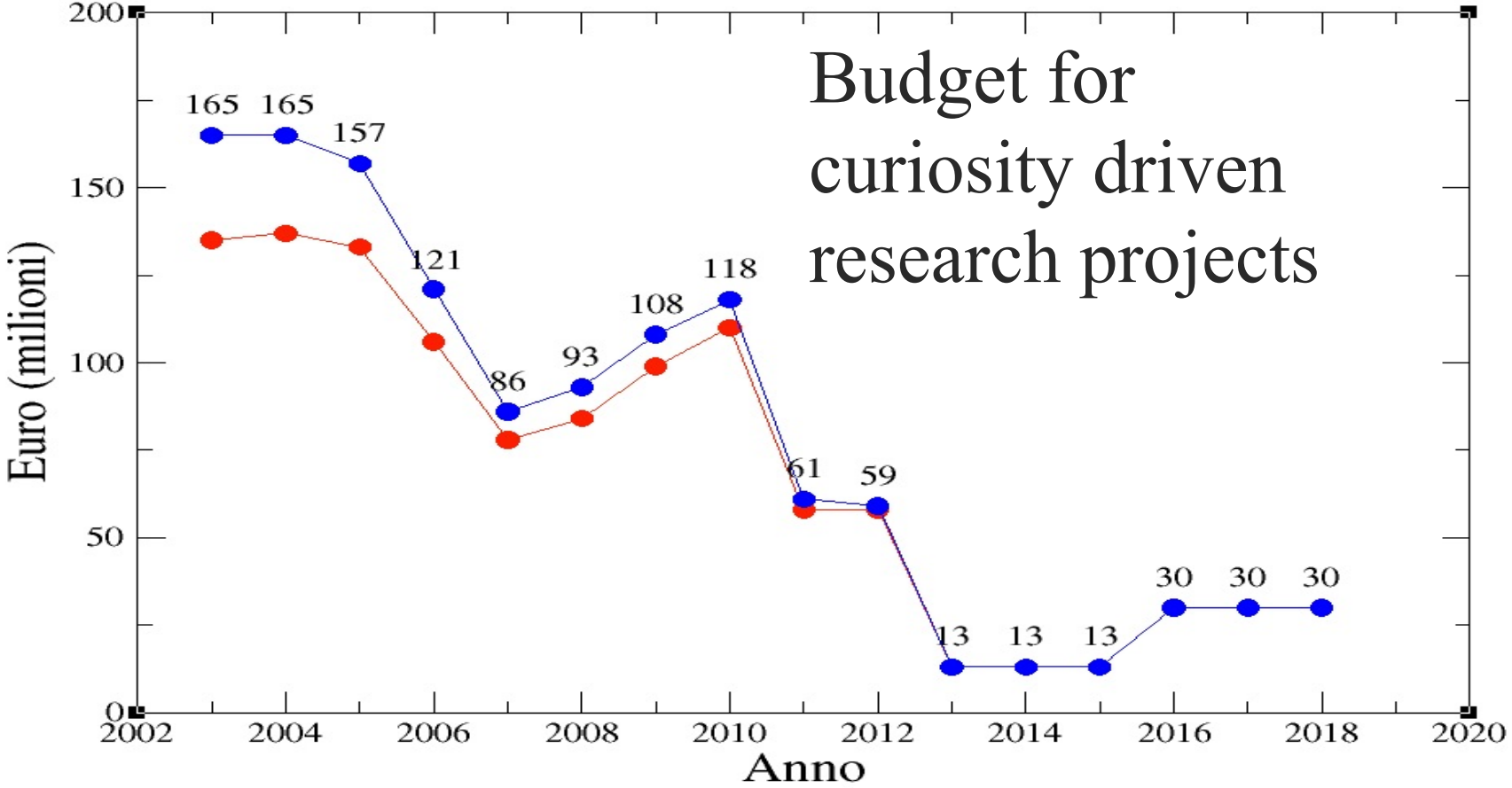


Figure 6.4 Citations (university sector) per unit spend on HERD for UK and comparators, 2006-2010.

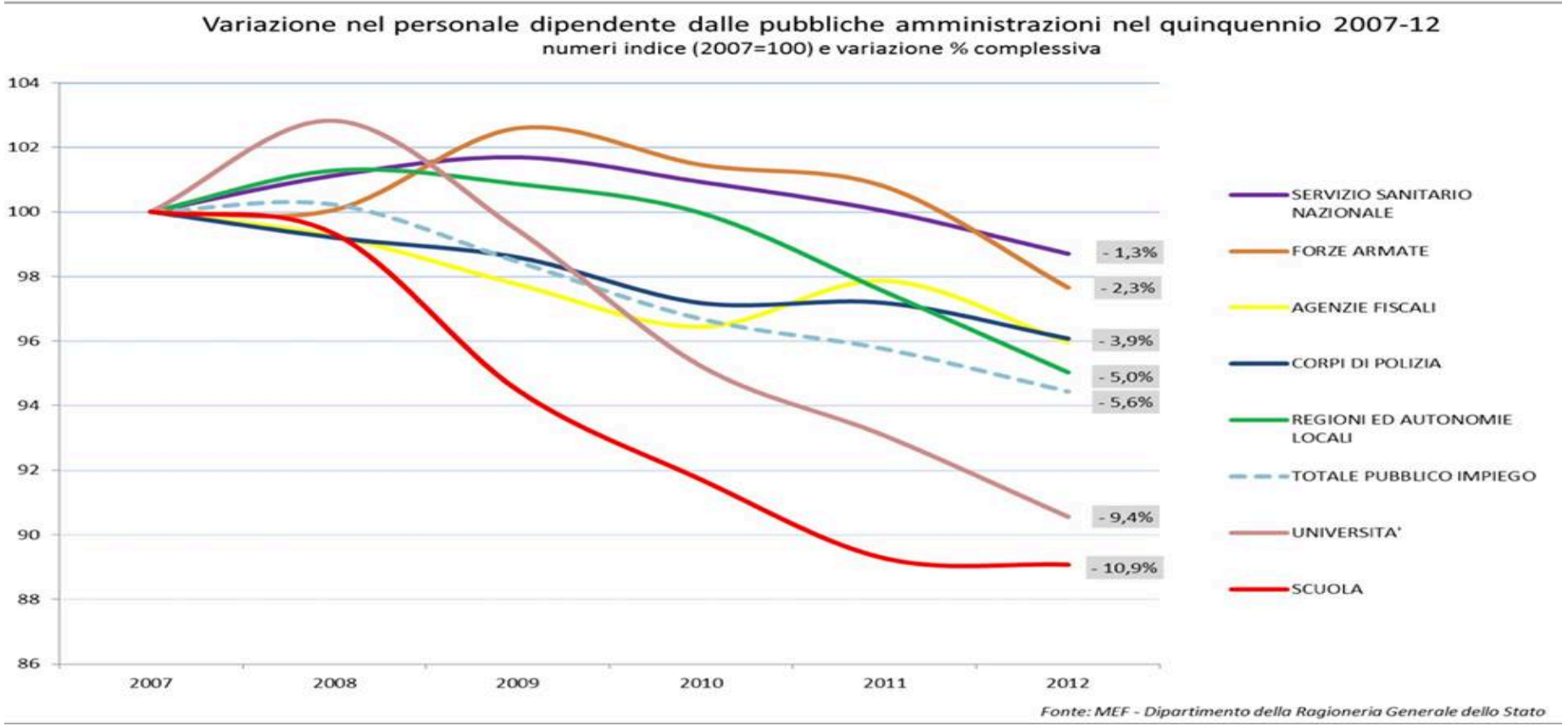


from "Internat. Comparative Perform. of the UK Research Base" by the Department of Business, Innovation and Skills

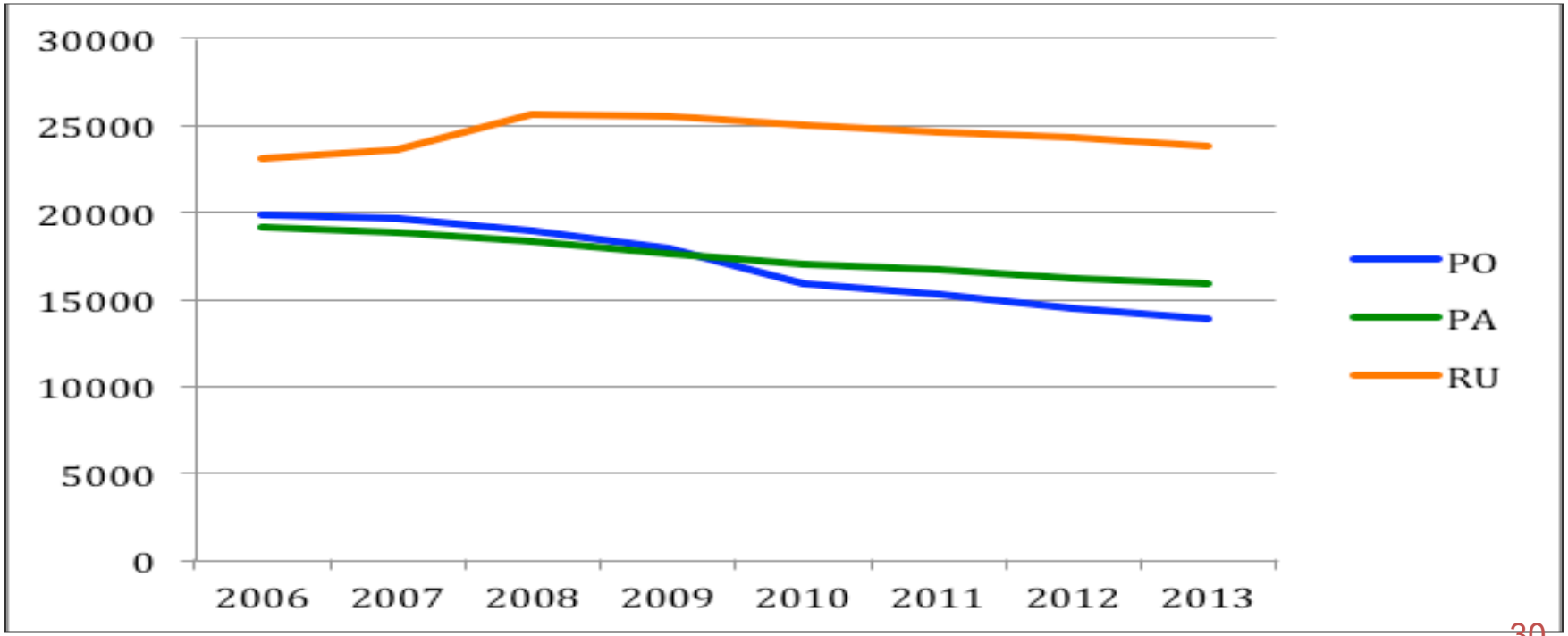
Budget for curiosity driven research projects



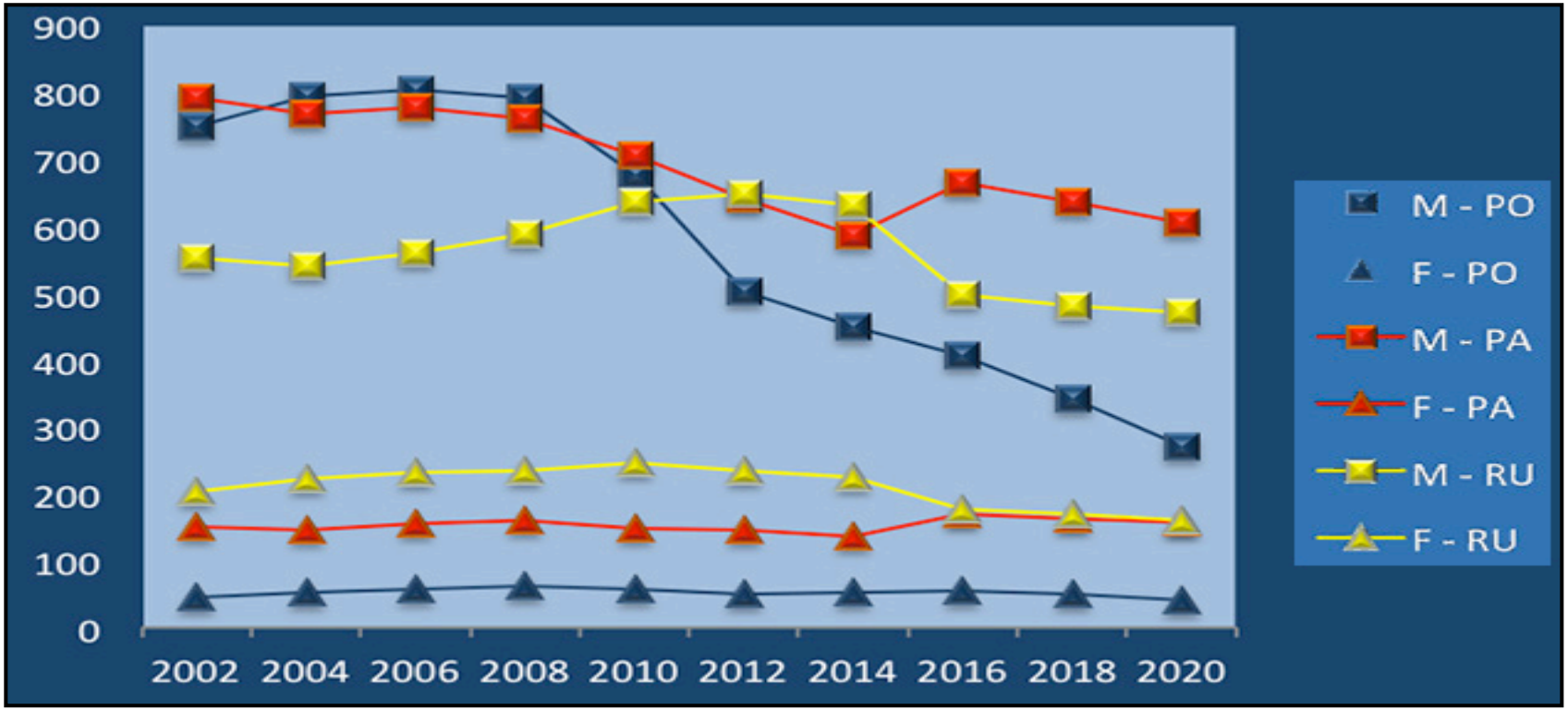
Variazione personale dipendente



Number of professors+researchers: **-20%**

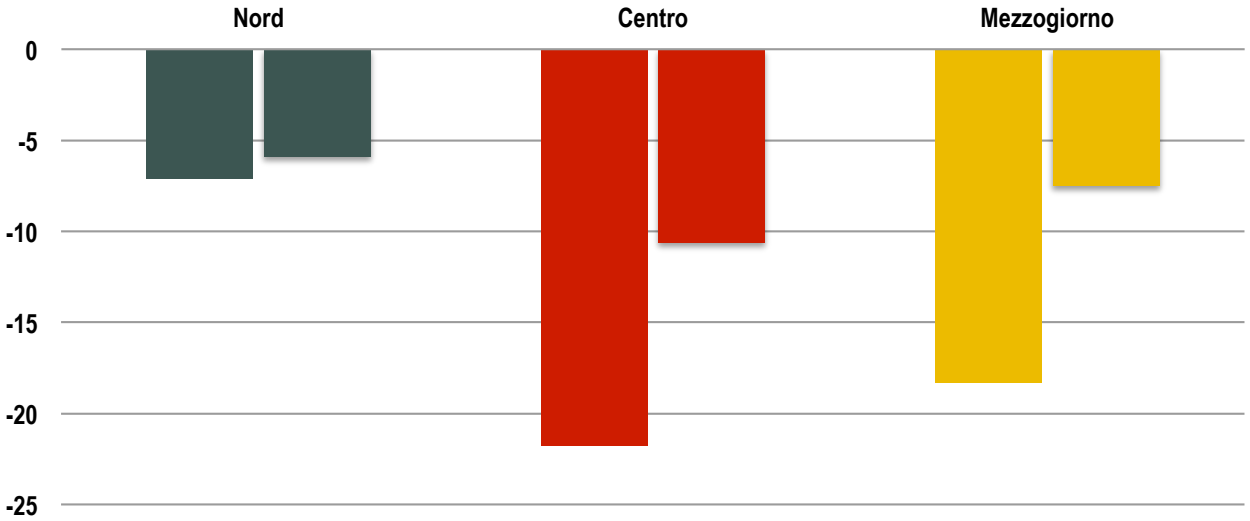


Number of professors+researchers (physics): **-40%**



Variazione del numero dei docenti:

2008-15 e previsioni 2015-20



Fonte: Rapporto Res

Scuola24 — Il quotidiano della Formazione, dell'Università e della Ricerca — Il Sole 24 ORE

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07 Ott 2016

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STUDENTI E RICERCATORI

L'Italia non è un paese per dottori di ricerca: -44% in dieci anni

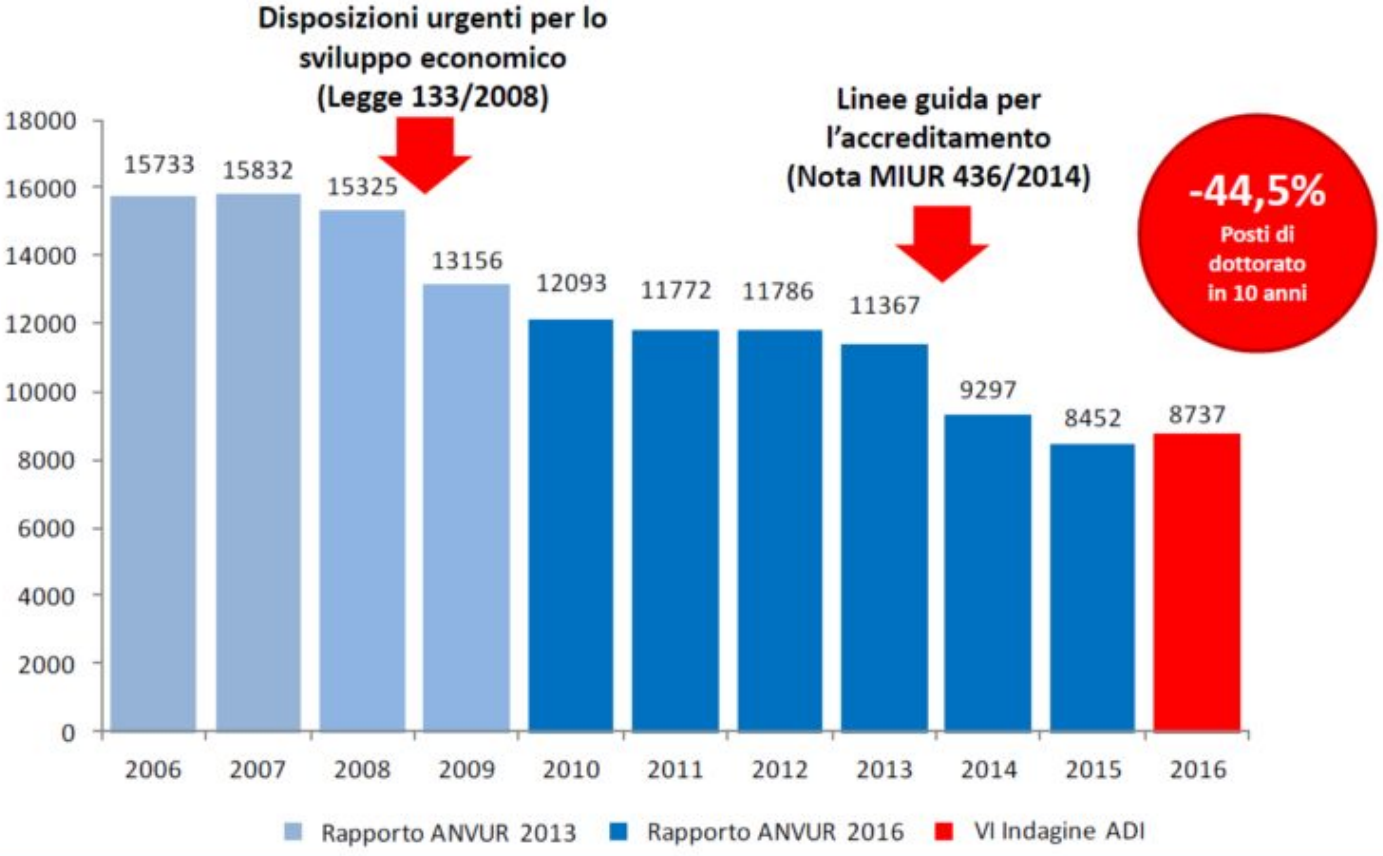
di Marzio Bartoloni

La VI indagine dell'Adi

adi — Associazione dottorandi e dottori di ricerca italiani

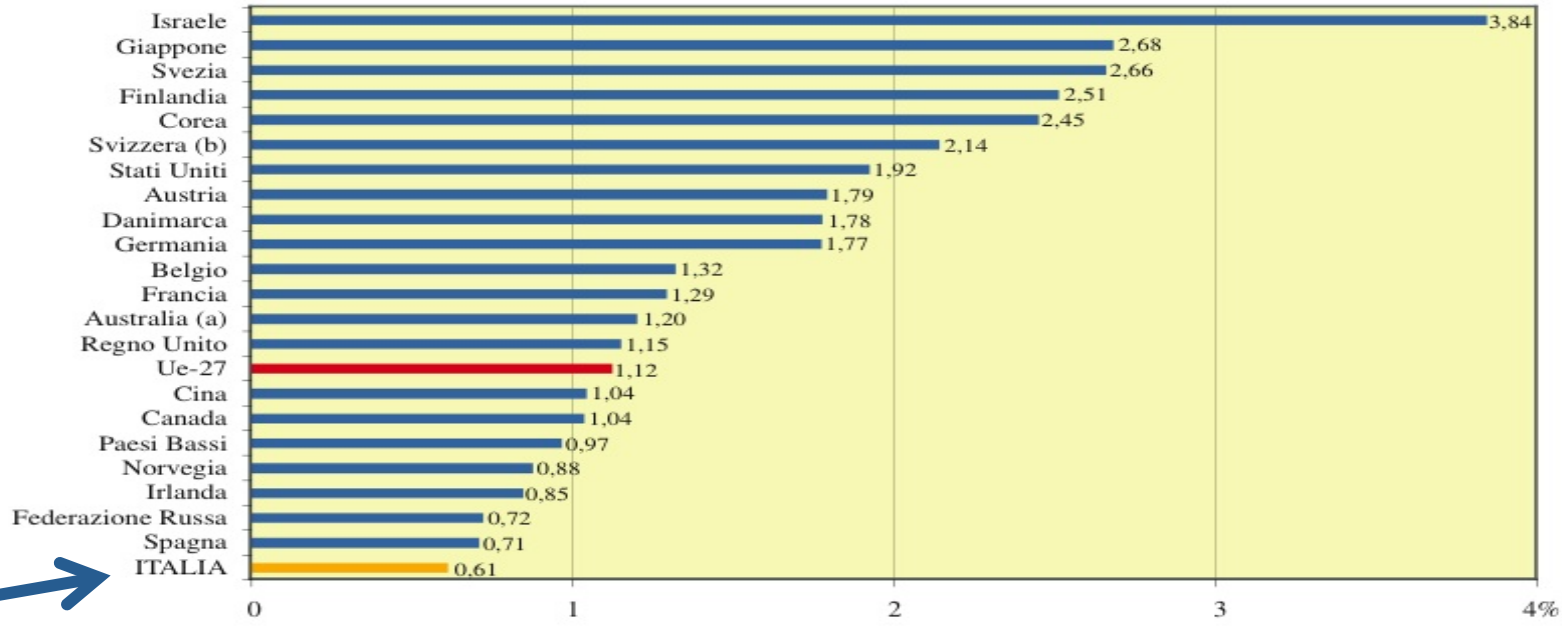
VI Indagine ADI su Dottorato e Post-Doc

Del declino



Fonte: Rapporto ANVUR 2013, Rapporto ANVUR 2016, VI Indagine ADI

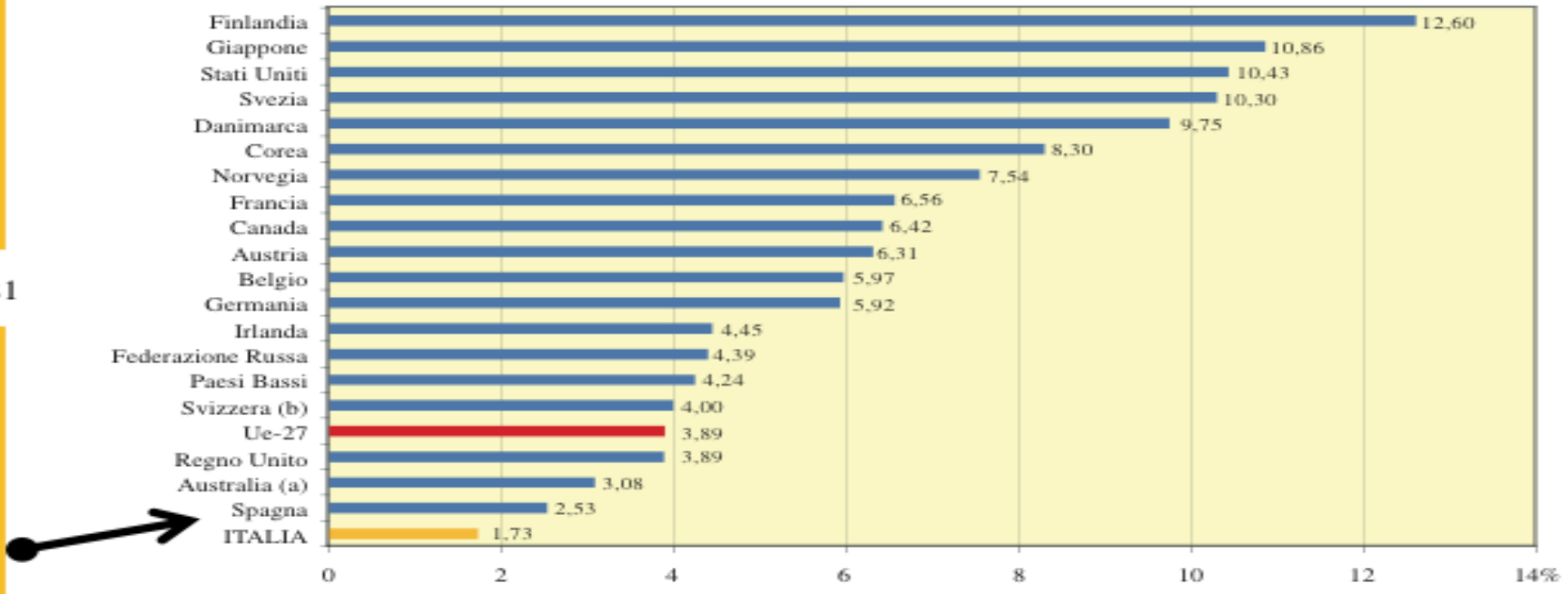
Spesa in R&S delle imprese/ %PIL



Note: (a) 2006; (b) 2004.
Fonte: Ocse, *Main Science and Technology Indicators*, 2009-2.

Ricercatori delle imprese in rapporto agli occupati

Fig. 4.9 - Il personale ricercatore delle imprese in rapporto agli occupati nelle imprese in alcuni paesi dell'Ocse e nella Federazione Russa, 2007



Note: (a) 2006; (b) 2004.

Fonte: Ocse, *Main Science and Technology Indicators*, 2009-2.

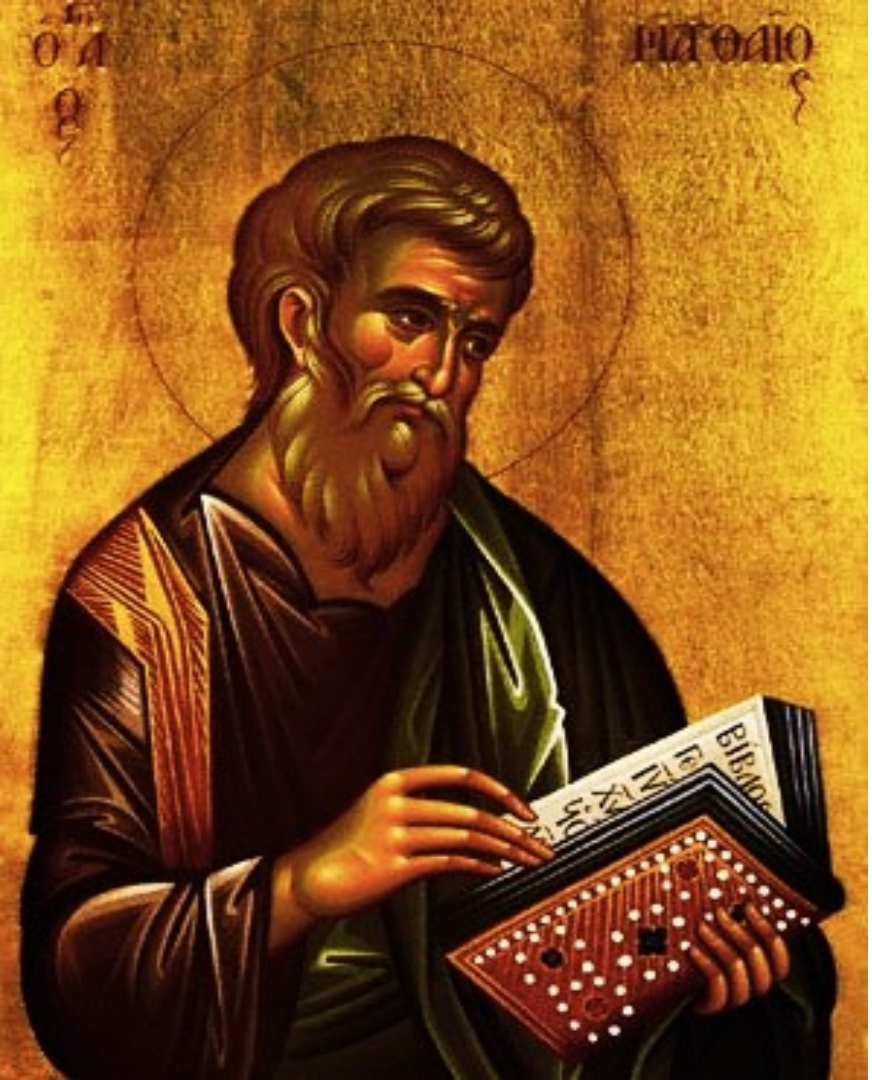
Quota di occupati con qualifica di manager per titolo di studio

Paese/area	Scuola dell'obbligo o titolo inferiore	Diploma superiore	Laurea o titolo superiore
UE27	10	35	54
UE15	12	35	53
Francia	7	24	68
Spagna	19	21	60
Regno Unito	12	36	51
Germania	5	44	51
Italia	28	48	25

fonte: elaborazioni su dati Eurostat, 2013

Percentuali di riga

A parità di condizioni, un imprenditore laureato assume il triplo di laureati rispetto a quello non laureato (Schivardi e Torrini, 2011)



Present day higher education and research policy

"The rich gets richer and the poor gets poorer" (competition, evaluation, meritocracy)

‘Harvard Here’ Model

- “World-class university as the **panacea** for ensuring success in the global economy.

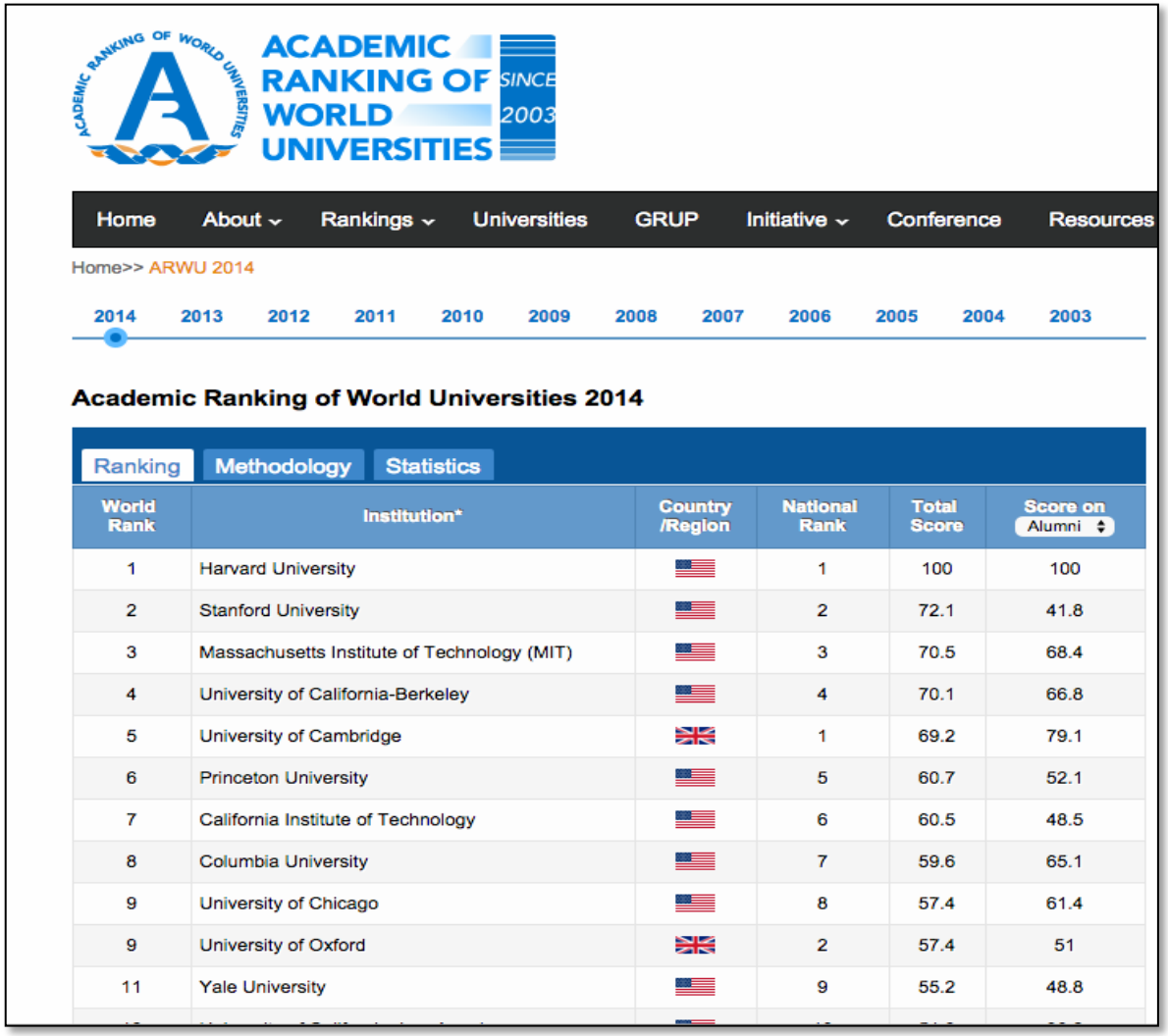
- Continuous **evaluation** of global capacity and potential

- **To conform to indicators set by global rankings:**

    - governments and institutions make profound changes to their higher education systems,
    - pursue more elite agendas,
    - alter their education programmes,
    - privilege some disciplines and fields.

‘Harvard Here’ Model

Does it work?



GOVERNING BY NUMBERS

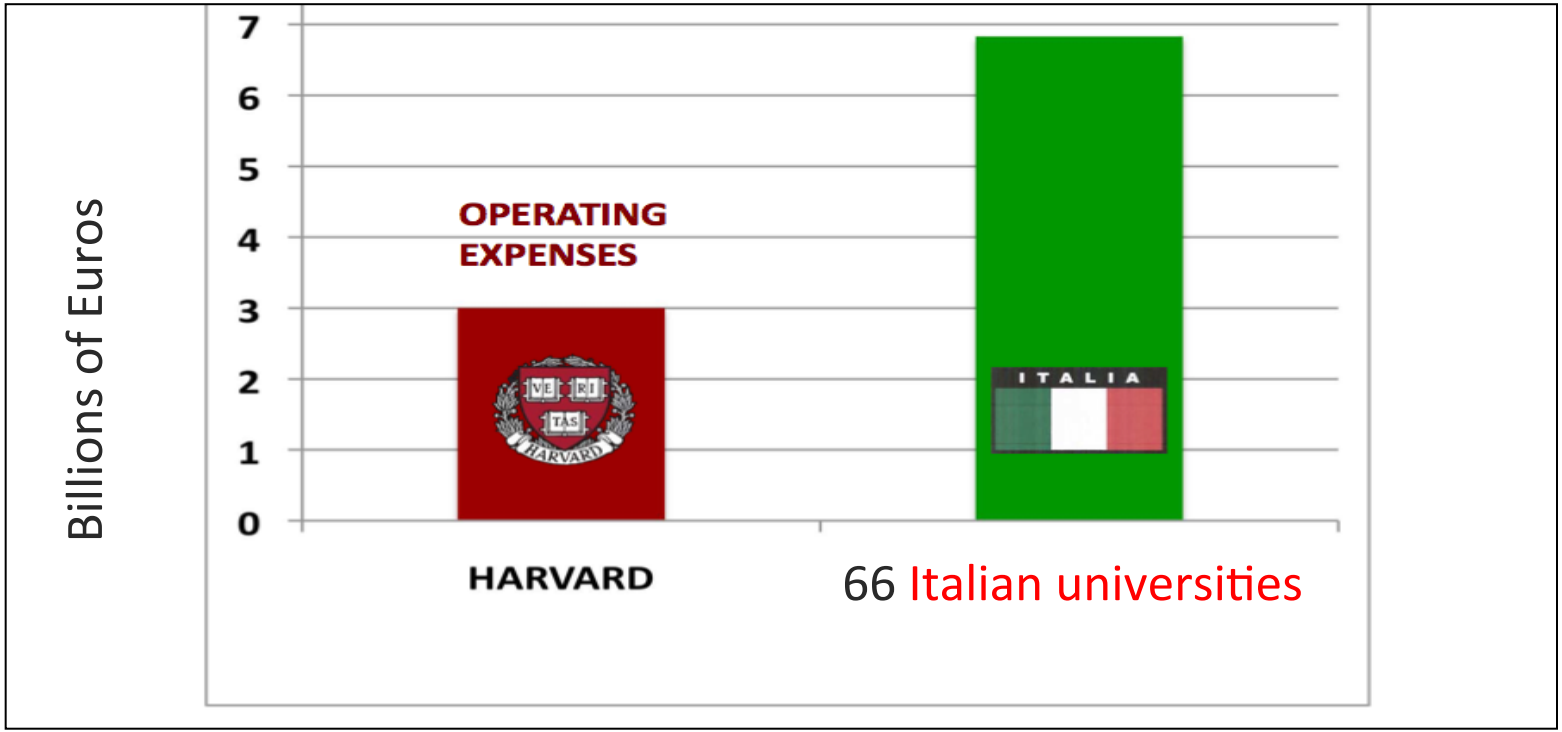
Scientometrics (2010) 84:237–263
DOI 10.1007/s11192-009-0115-x

Should you believe in the Shanghai ranking?
An MCDM view

Jean-Charles Billaut · Denis Bouyssou · Philippe Vincke

- All criteria used are only loosely connected with what they intended to capture.
- Several **arbitrary** parameters and many micro-decisions that are **not documented**.
- **Flawed and nonsensical** aggregation method
- ***«any of our MCDM (Multiple Criteria Decision Making) student that would have proposed such a methodology in her Master's Thesis would have surely failed according to our own standards»***

- Harvard operating expenses = 44% founds of all Italian universities
- Harvard has 21,000 students → 130,000 euro/student
- Typically EU: 10,000 euro/student



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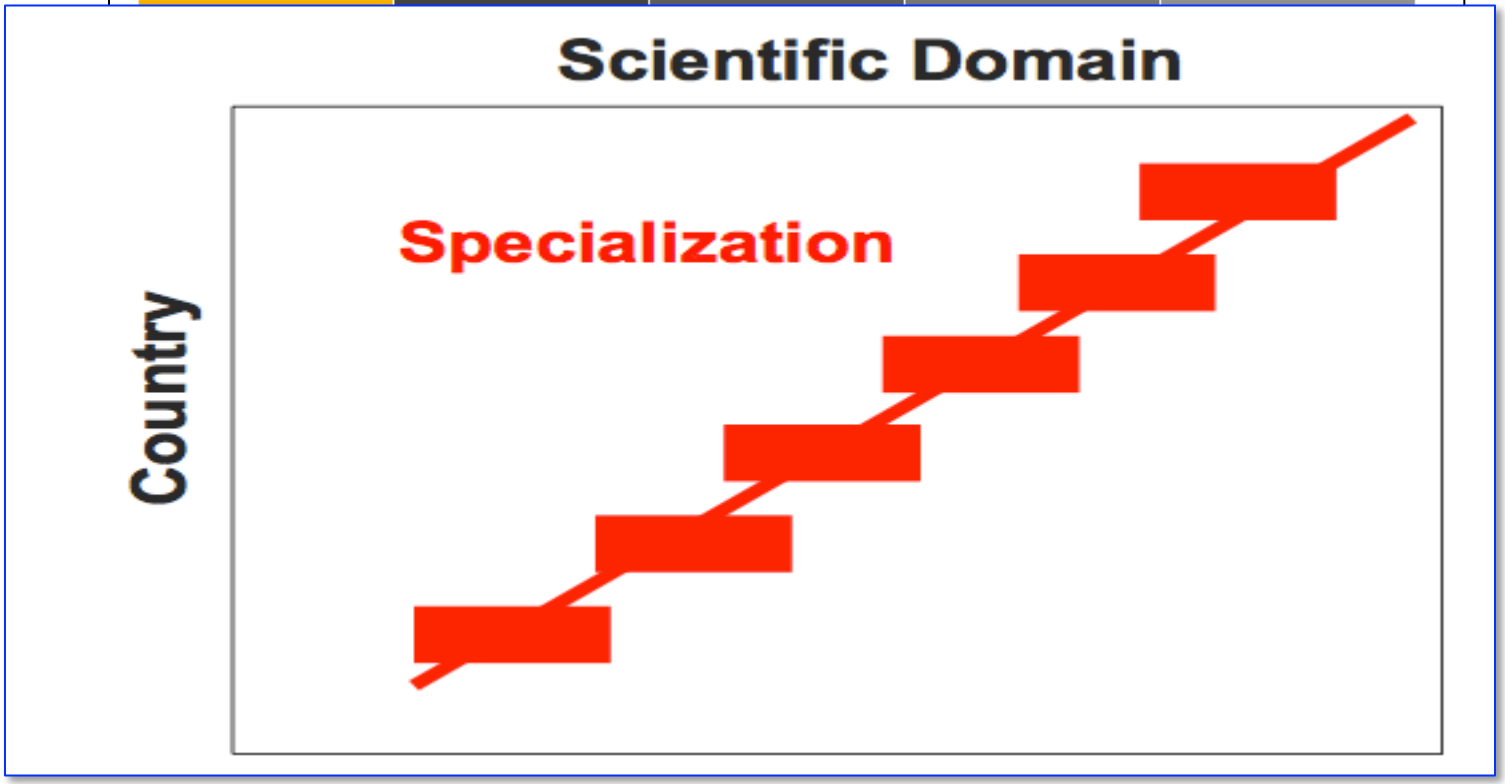
Giulio Cimini, Andrea Gabrielli, Francesco Sylos Labini

Published: December 10, 2014 • DOI: 10.1371/journal.pone.0113470



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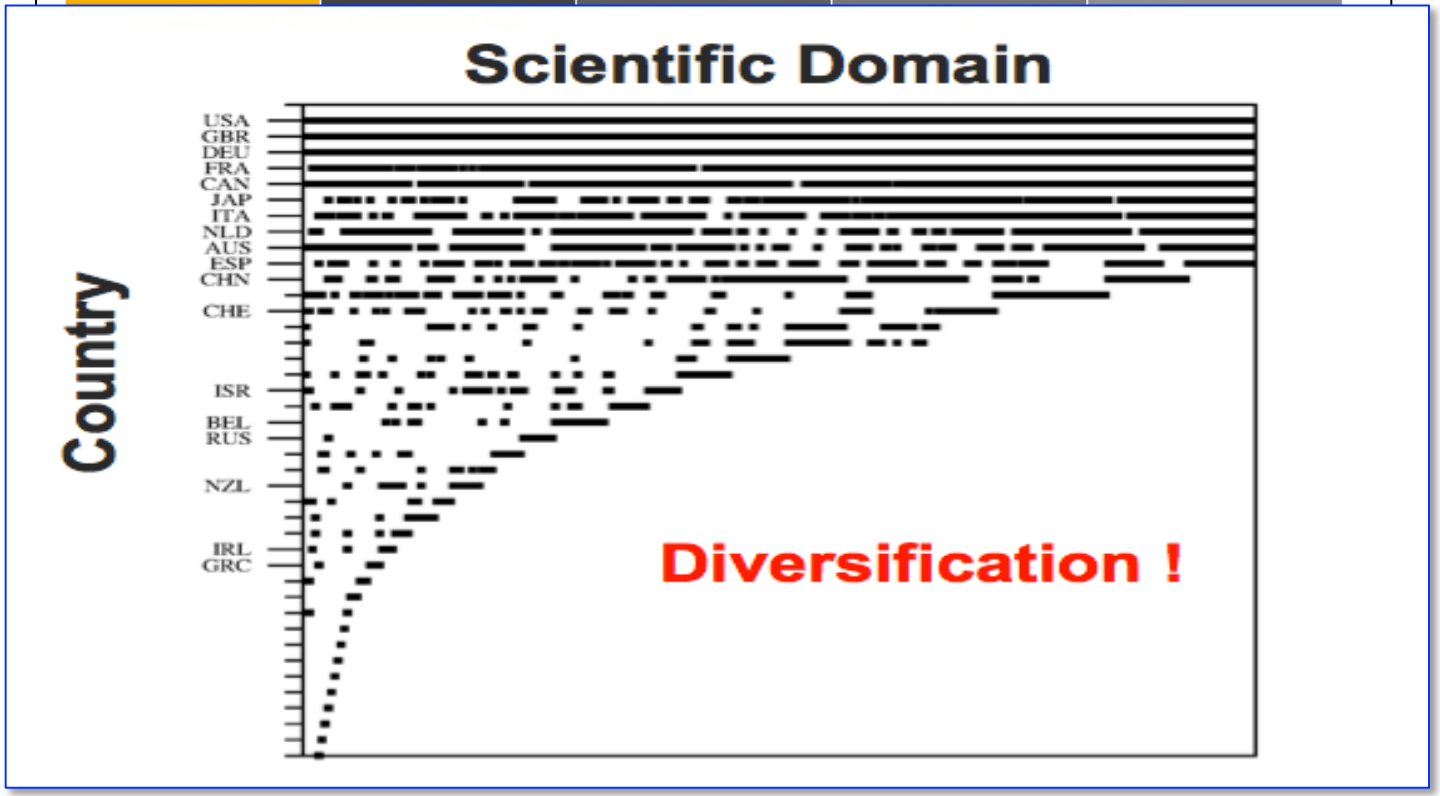

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Technological leading countries

beyond having the largest production of scientific papers and the largest number of citations, do not specialize in few scientific domains. Rather, they **diversify** as much as possible their research system

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Diversification

thus represents the **key element** that correlates with scientific and technological competitiveness

Science The Endless Frontier
A Report to the President by Vannevar Bush, Director of the Office of Scientific Research and Development, July 1945

*Science can be effective in the national welfare only as a **member of a team**, whether the conditions be peace or war. But without scientific progress no amount of achievement in other direction can insure our health, prosperity and security as a nation in the modern world*

DIFFERENT VOICES

CATHERINE ASHTON
"Critics of the EU are sometimes right: it is sometimes too slow in action, inept and bureaucratic."
The EU's foreign policy chief, on the challenges the EU's external action service will help to address.

STEVEN VANACKERE
"It is a work in progress, but there is progress."

Belgium's foreign minister, on the EU's common foreign policy.

DAVID CAMERON
"I believe it's just wrong to say Turkey can guard the camp but not be allowed to sit inside the tent."
The UK prime minister, linking EU and NATO membership in his call for Turkey's eventual admission to the EU.

SILVIO BERLUSCONI
"Why should we pay scientists when we make the most beautiful shoes in the world?"

Italy's prime minister explains why it is OK to cut spending on research and development.

IT | EuropeanVoice | 11
29 July 2010

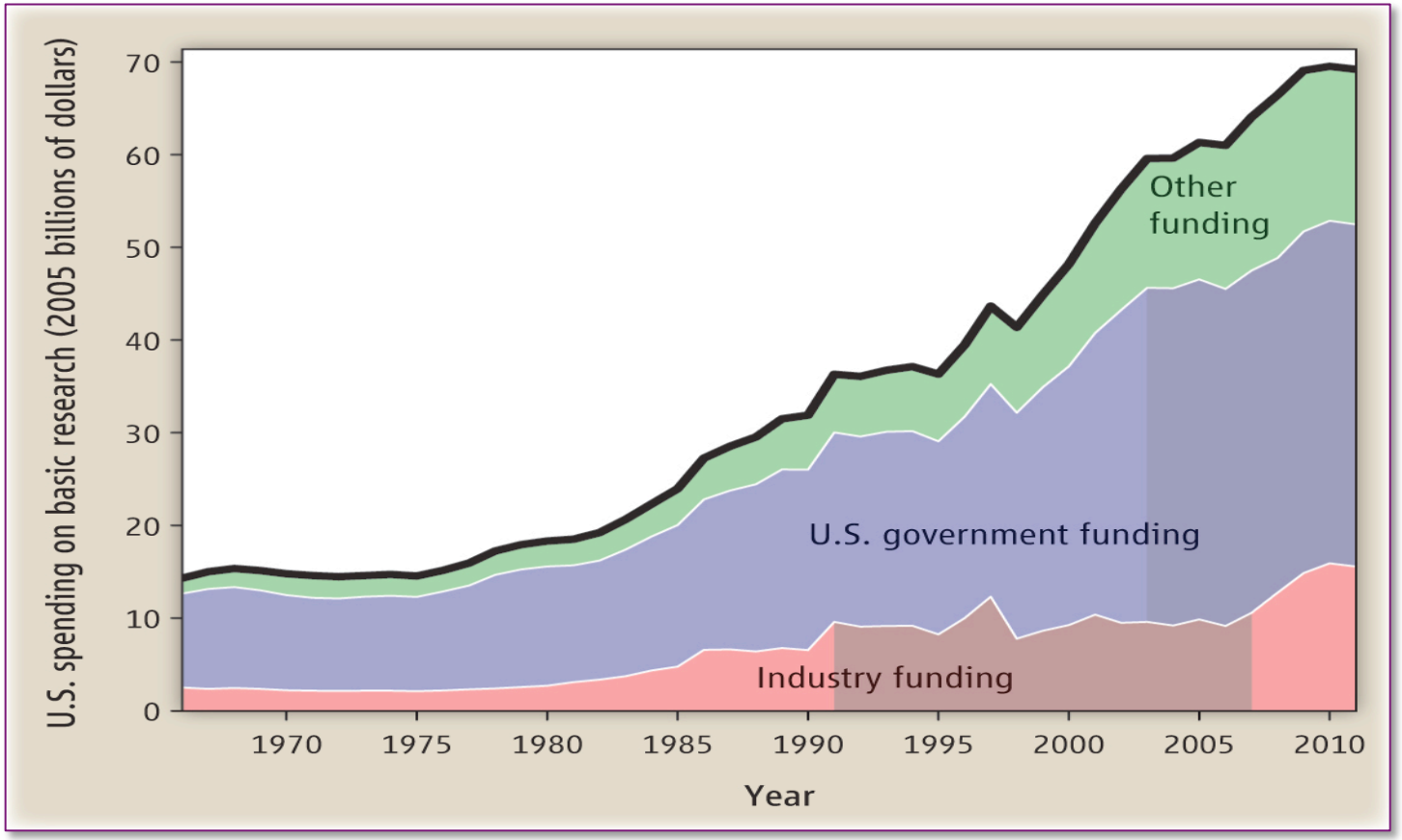
SILVIO BERLUSCONI

"Why should we pay scientists when we make the most beautiful shoes in the world?"

Italy's prime minister explains why it is OK to cut spending on research and development.

The ***invisible hand*** is visible and working hard !

William H. Press
(*Science 15 November 2013*)

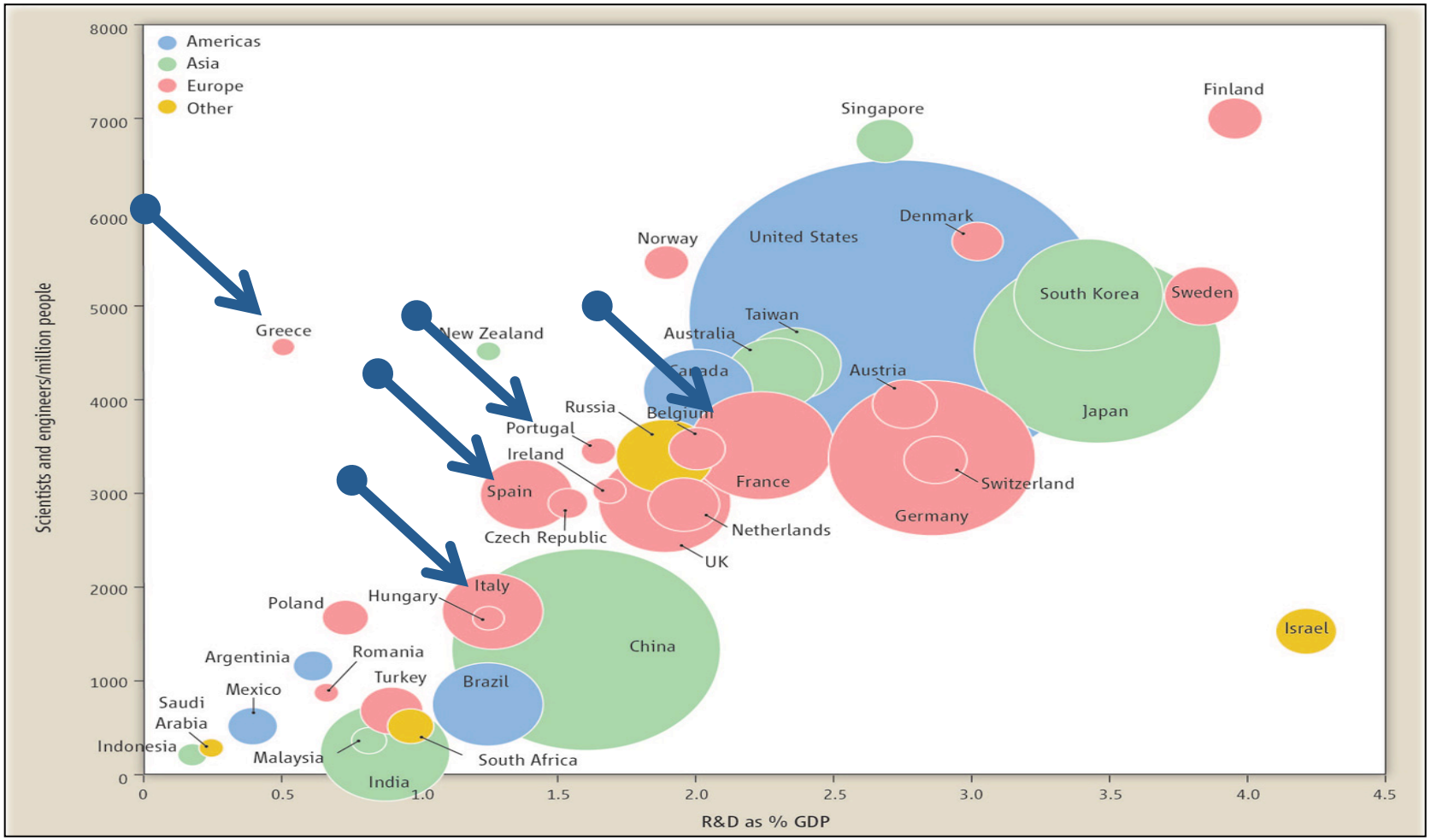


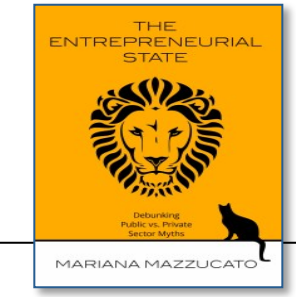

HUMAN CAPITAL
& TALENT
INVEST
IN ITALY
THE RIGHT PLACE, THE RIGHT TIME
FOR AN EXTRAORDINARY OPPORTUNITY
2016
Italy offers a competitive wage level
(that grows less than in the rest of EU)
and a highly skilled workforce.
Early preparation and skills training

Why invest in Albania?

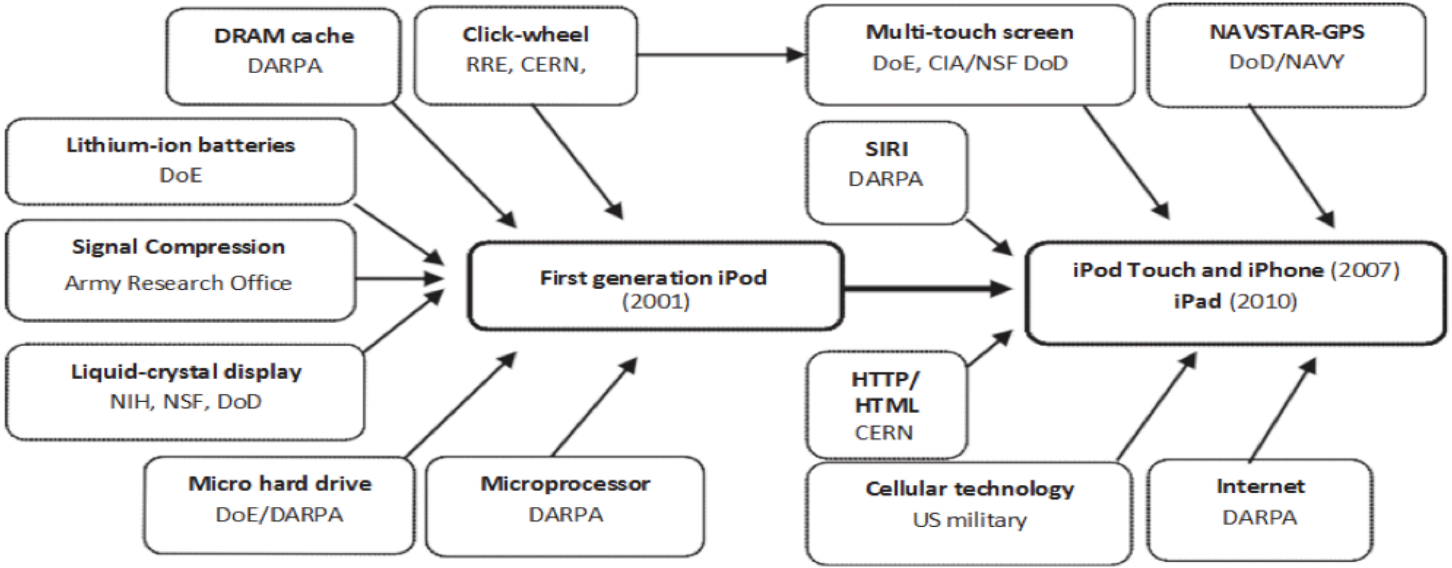
- Domestic economy and exports are expanding
- It's the gateway to the Balkans
- Free Trade Area
- Total labor costs are lower than comparable countries
- Social security 'on costs' amount – 31% of gross wages
- Adaptable and flexible skilled labor force
- Extensive language skills, the most of the younger generation are college graduates.

William H. Press
(*Science 15 November 2013*)





What Makes the iPhone so Smart?

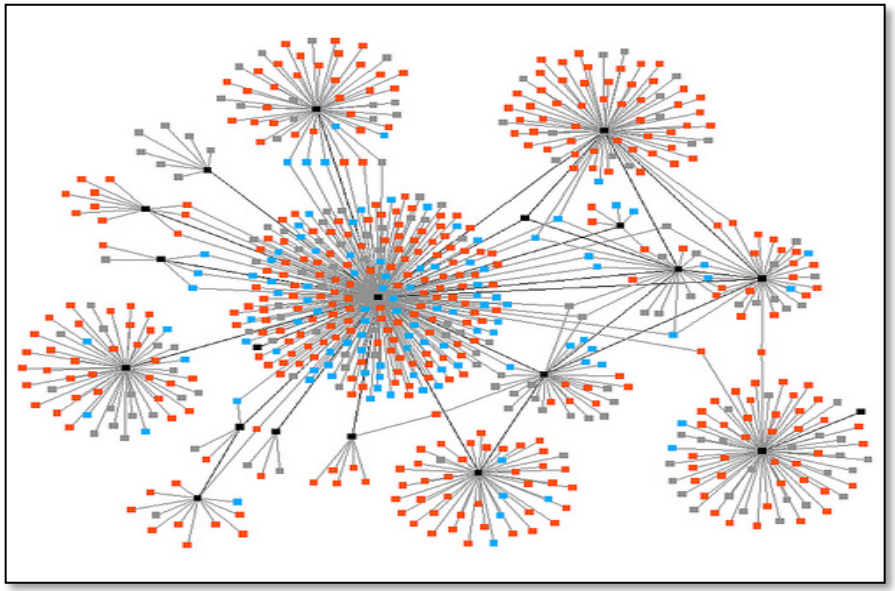


Source: The Entrepreneurial State: debunking public vs. private sector myths (Mazzucato, 2013), p109. Fig 13

Innovation requires risk

The key role of the visible hand is to build the infrastructures that are necessary but not sufficient for the economic development

Risk in research and innovation requires



- Diversification
- Adaptability
- Cooperation
- Long times

How can I reach the long term if I do not survive in the short one?

The modern Ifigenia

The sacrifice of new generations on the altar of austerity is the loss of a common heritage

Long term problem !

- There **is no effort** to cure the R&D lag neither at the national level *nor at the European level*

- There is a **net transfer** of human and financial resources from South to North

- **Austerity** measures make things worst both *on the short and long term*
  - *Human resources*
  - *Infrastructures*

"If you think education is expensive, try ignorance"