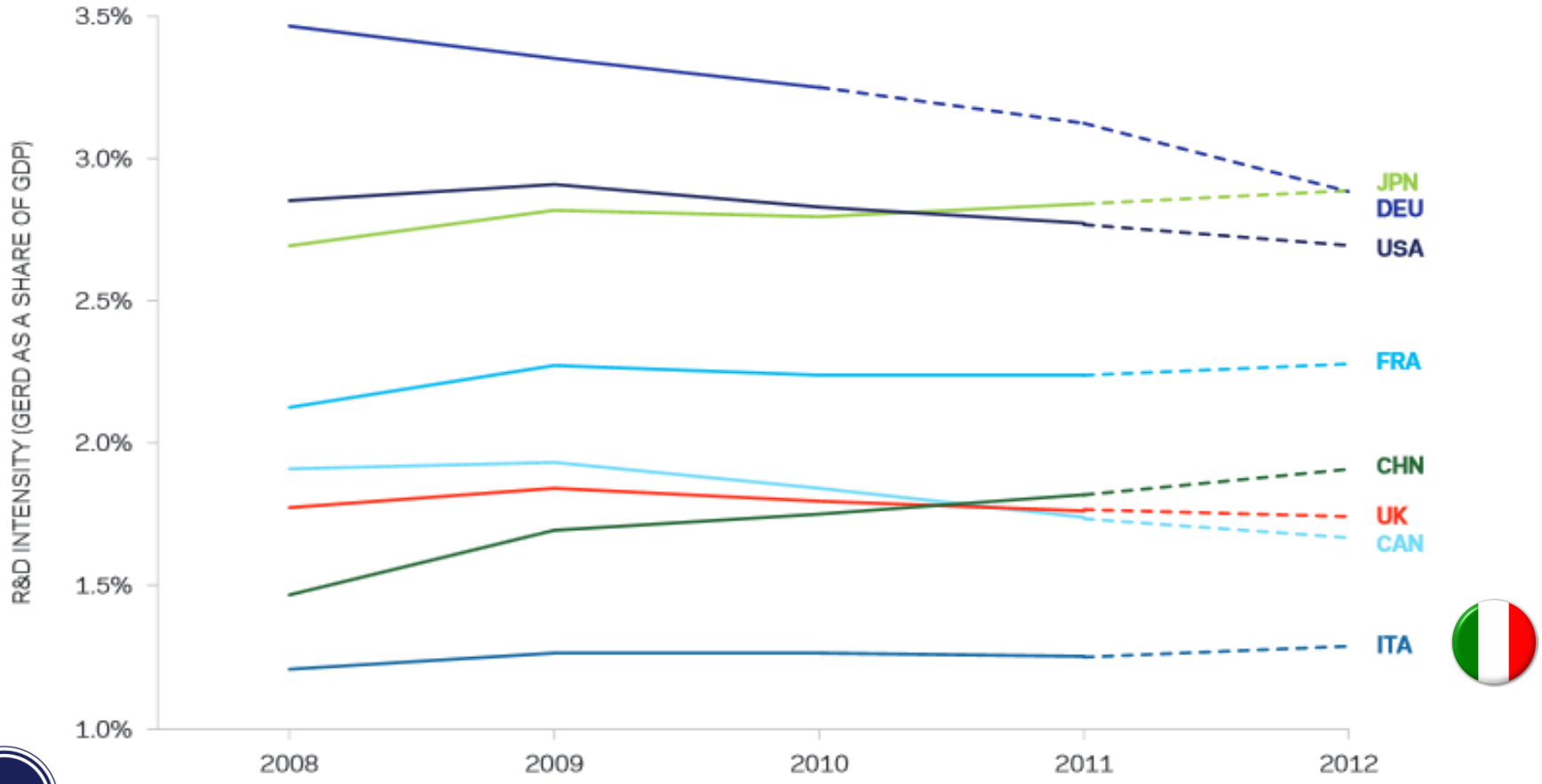
Sant'Anna
Scuola Universitaria Superiore Pisa

The Italian Paradox: miths and facts about science and innovation in Italy

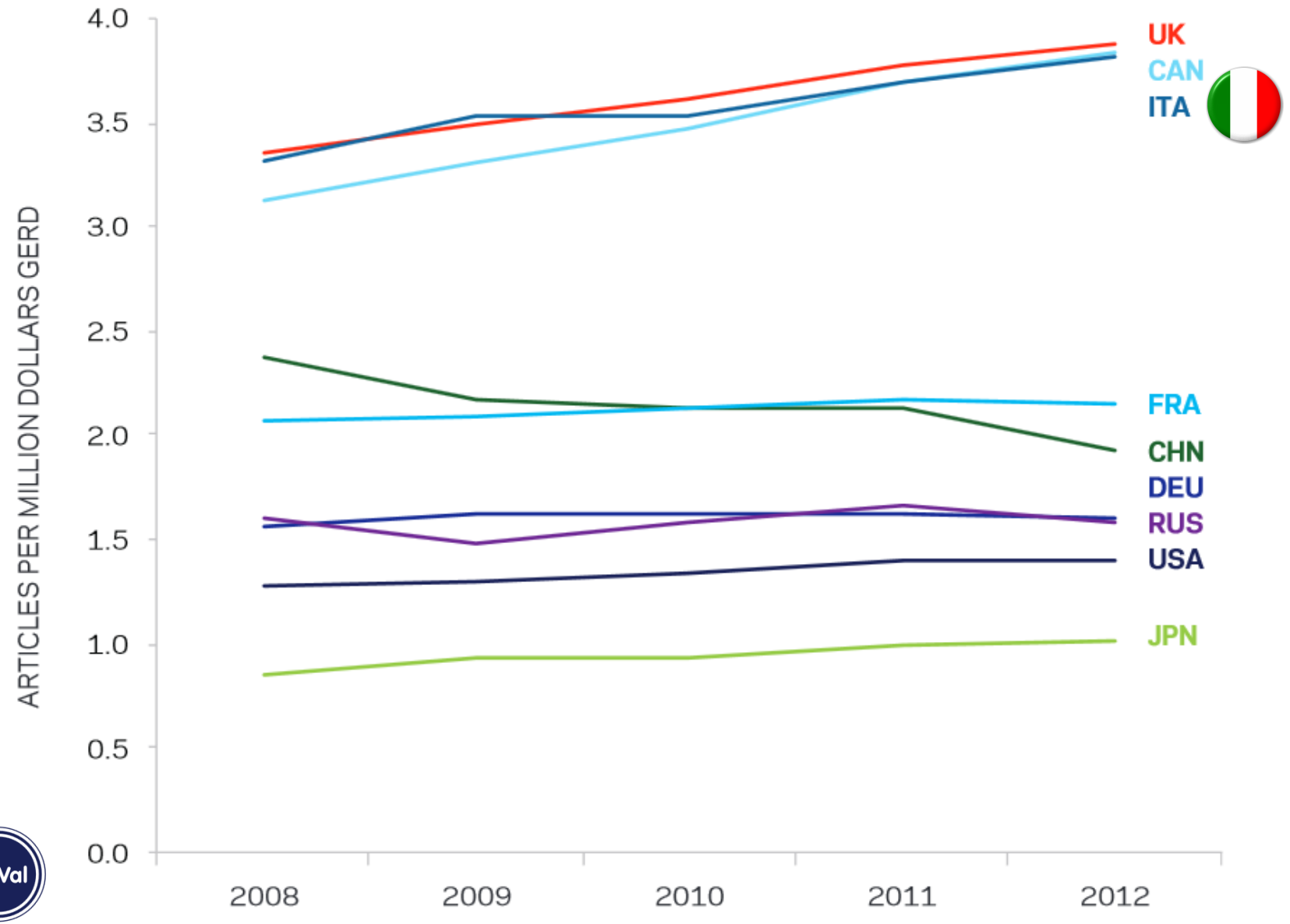
Pierdomenico Perata

Netval

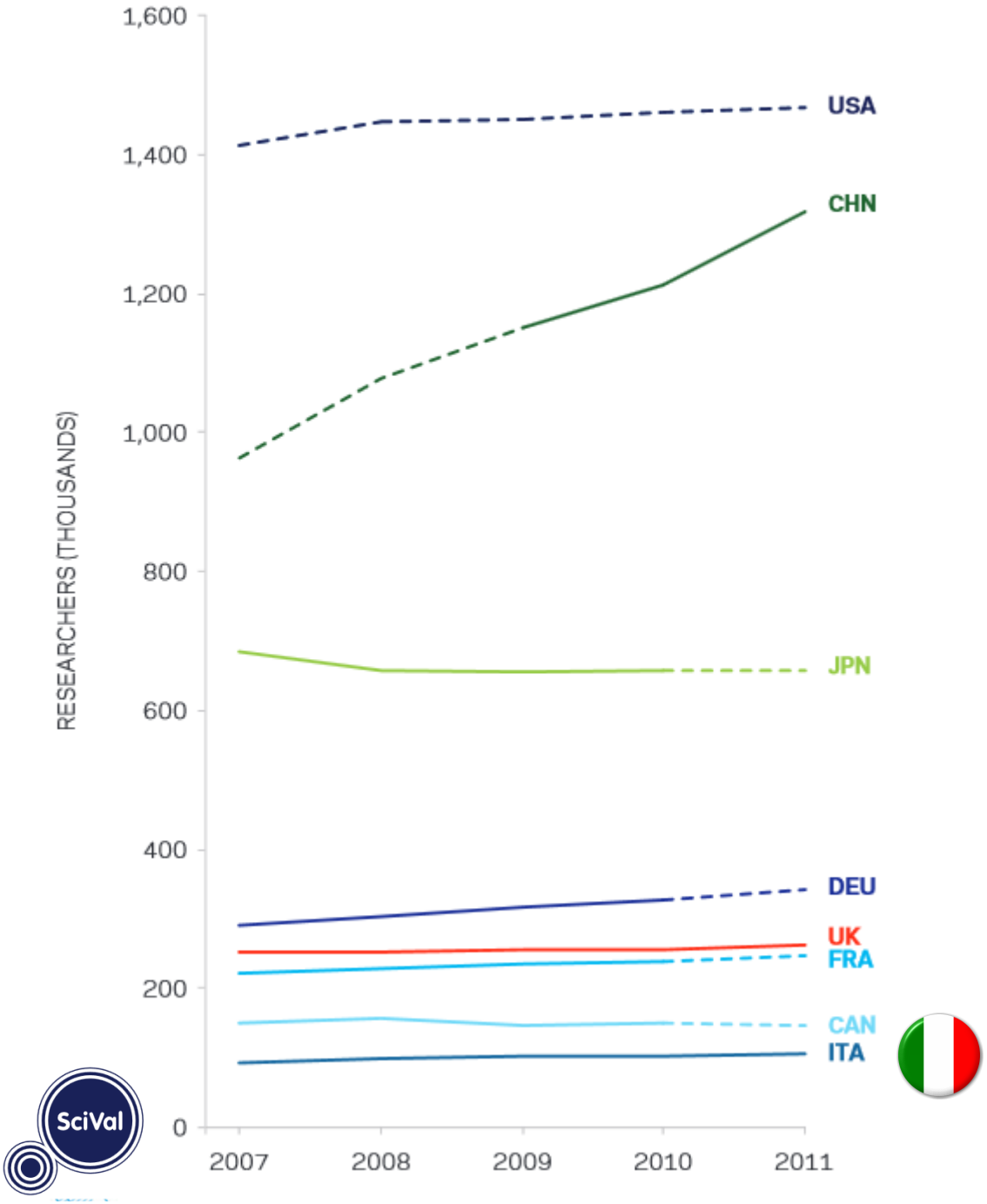
Gross domestic expenditure on R&D (GERD) as % of GDP



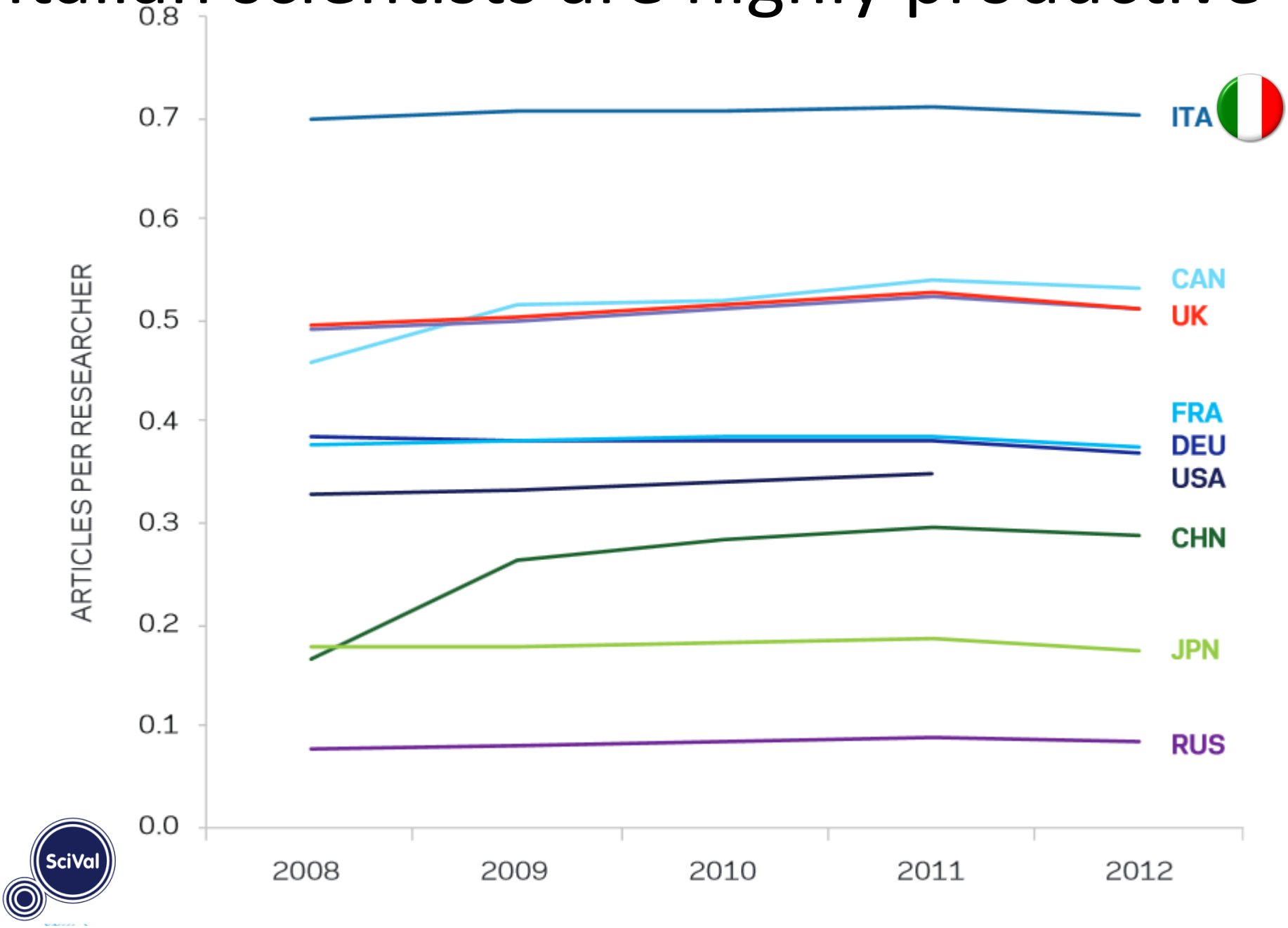
Articles/million $ GERD



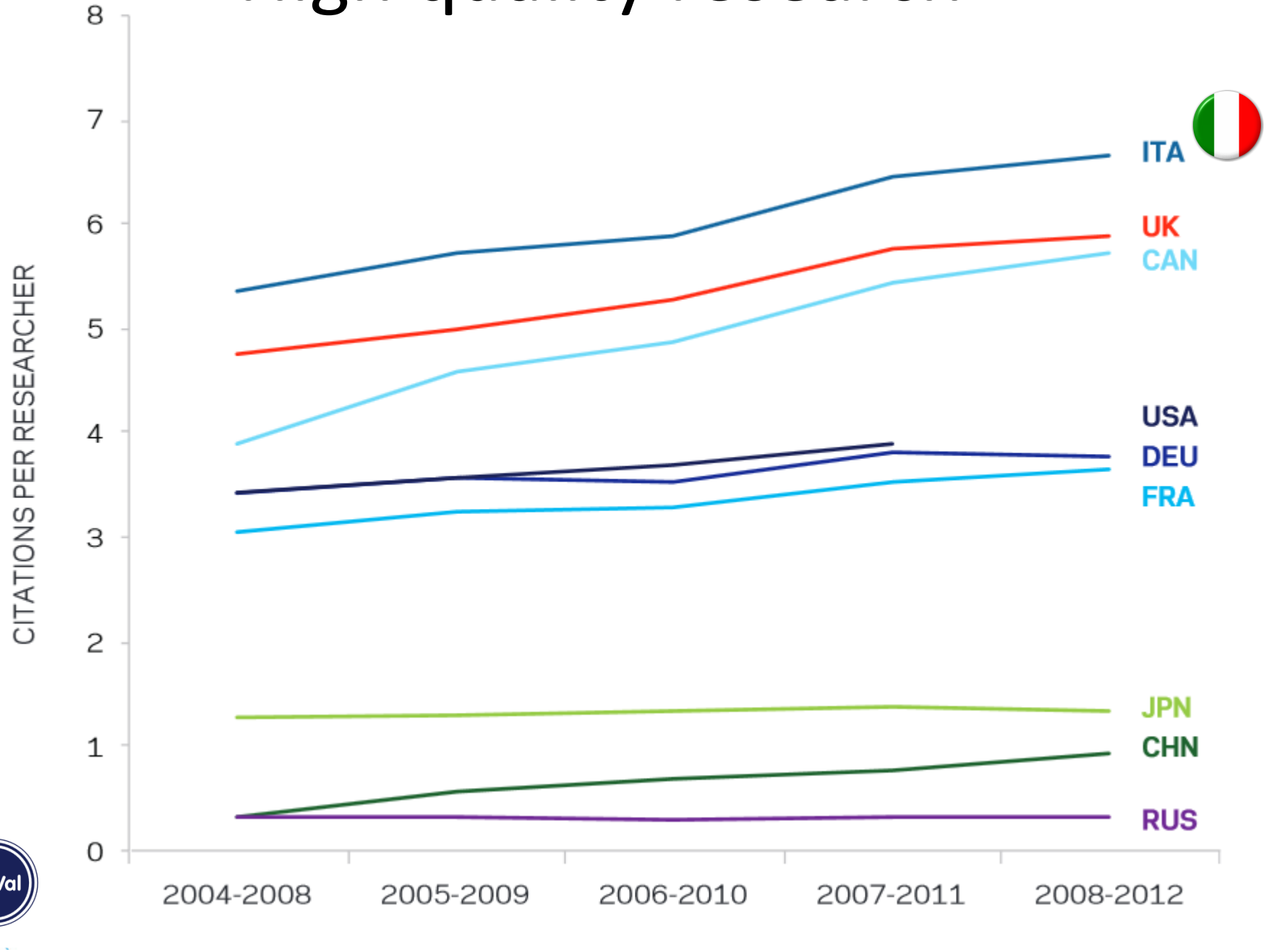
Researchers



Italian scientists are highly productive



High quality research



Italy’s Science is alive!

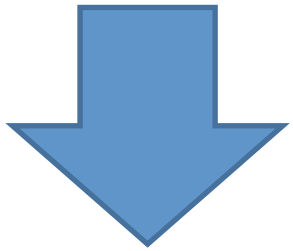
Brain drain

Brain drain?

Comparator	Sedentary	Total Transitory	Total Outflow	Total Inflow	Net Total Outflow (Total Outflow less Total Inflow)
UK	28.4%	49.5%	12.7%	9.4%	3.3%
France	36.7%	46.8%	8.6%	7.9%	0.7%
Italy	51.9%	36.7%	5.9%	5.5%	0.4%
Germany	36.3%	44.8%	10.7%	8.2%	2.6%
Japan	60.0%	29.4%	5.5%	5.1%	0.4%
US	46.8%	35.6%	9.7%	7.9%	1.8%
Canada	27.0%	50.0%	12.5%	10.5%	2.0%
China	71.1%	17.8%	4.1%	7.0%	-2.9%

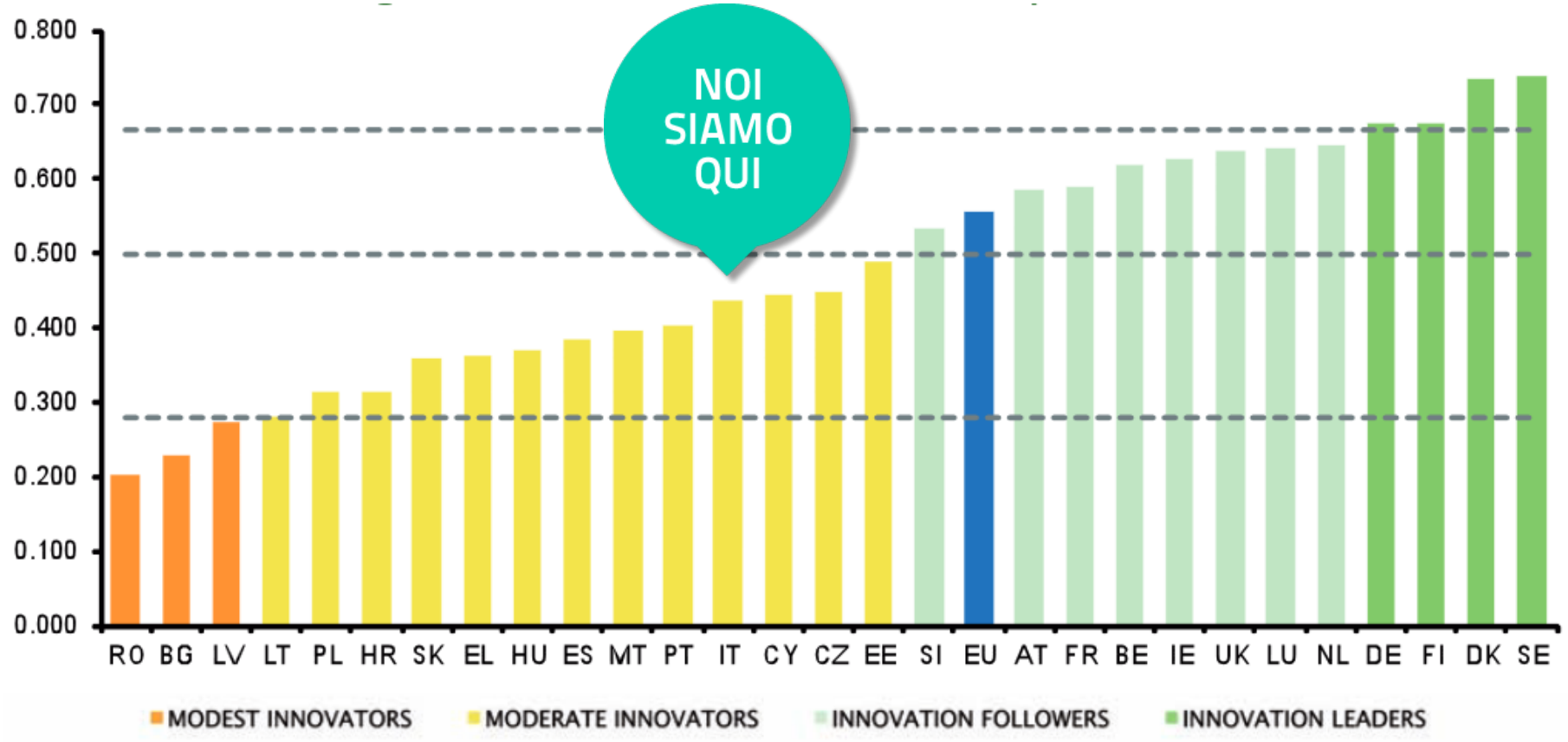
Italy’s brain drain is much lower than Germany’s one

Knowledge



Innovation

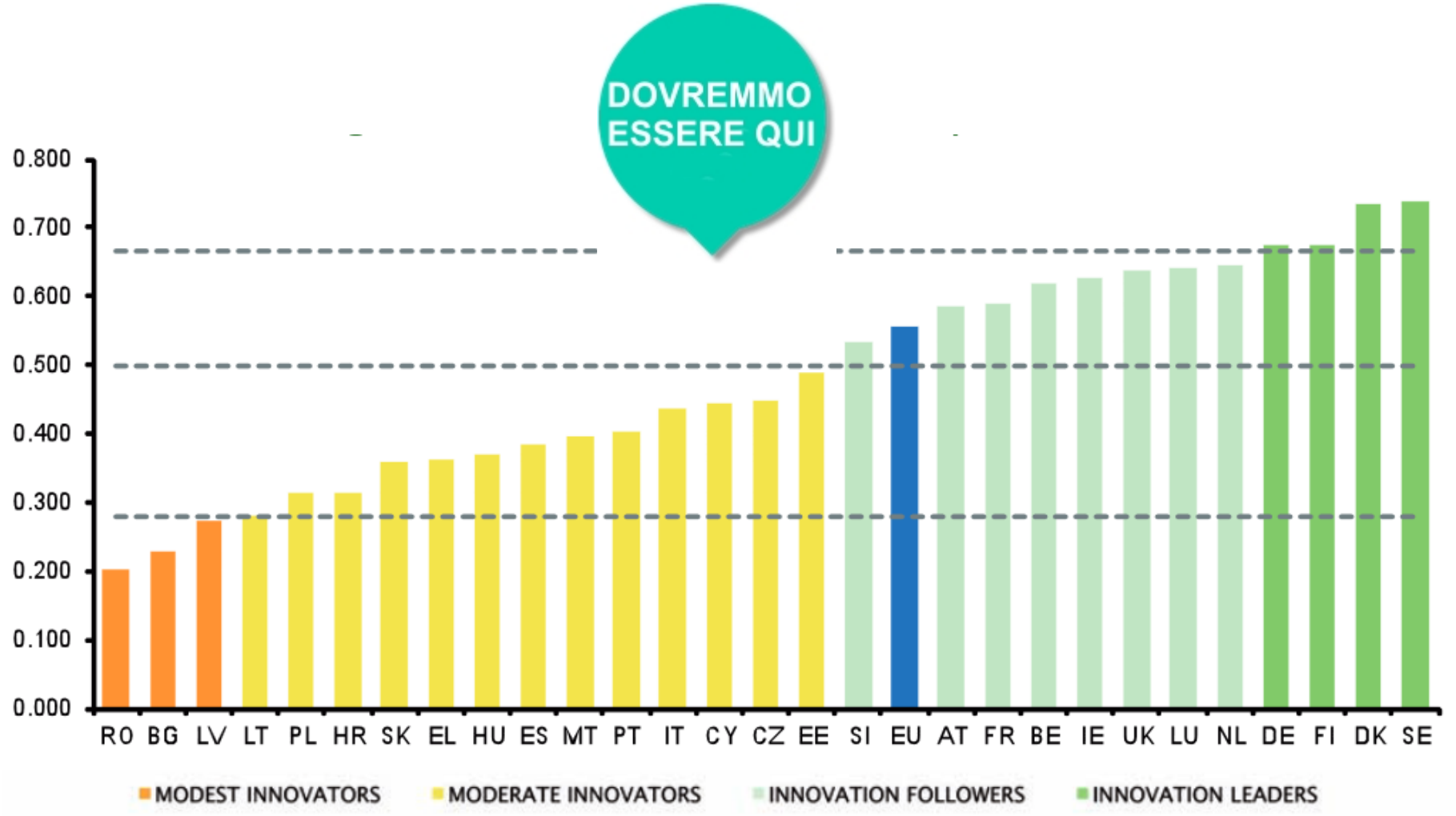
Where we are



Innovation **Union**
Scoreboard 2015

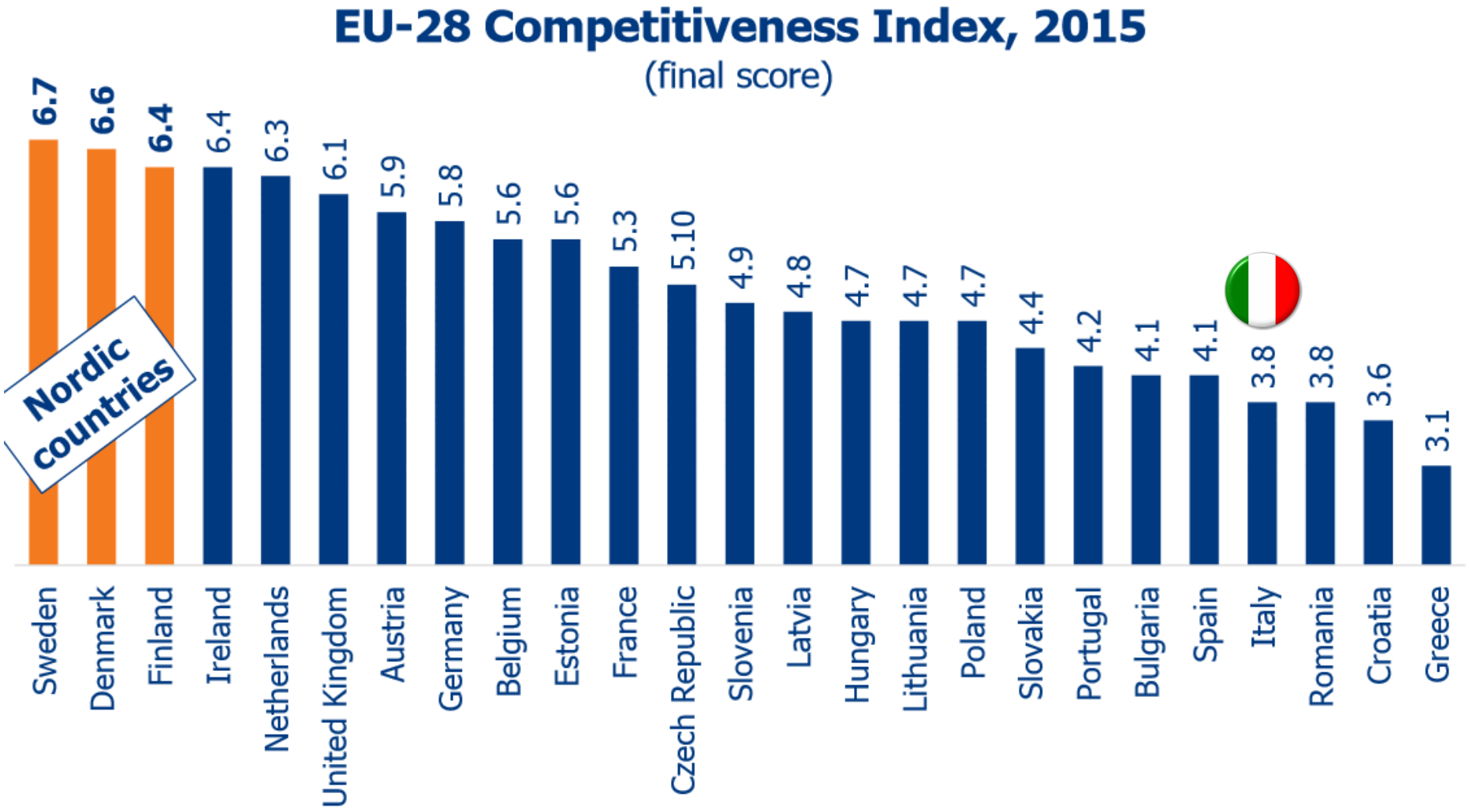
Italy is a moderate innovator country

Where we should be



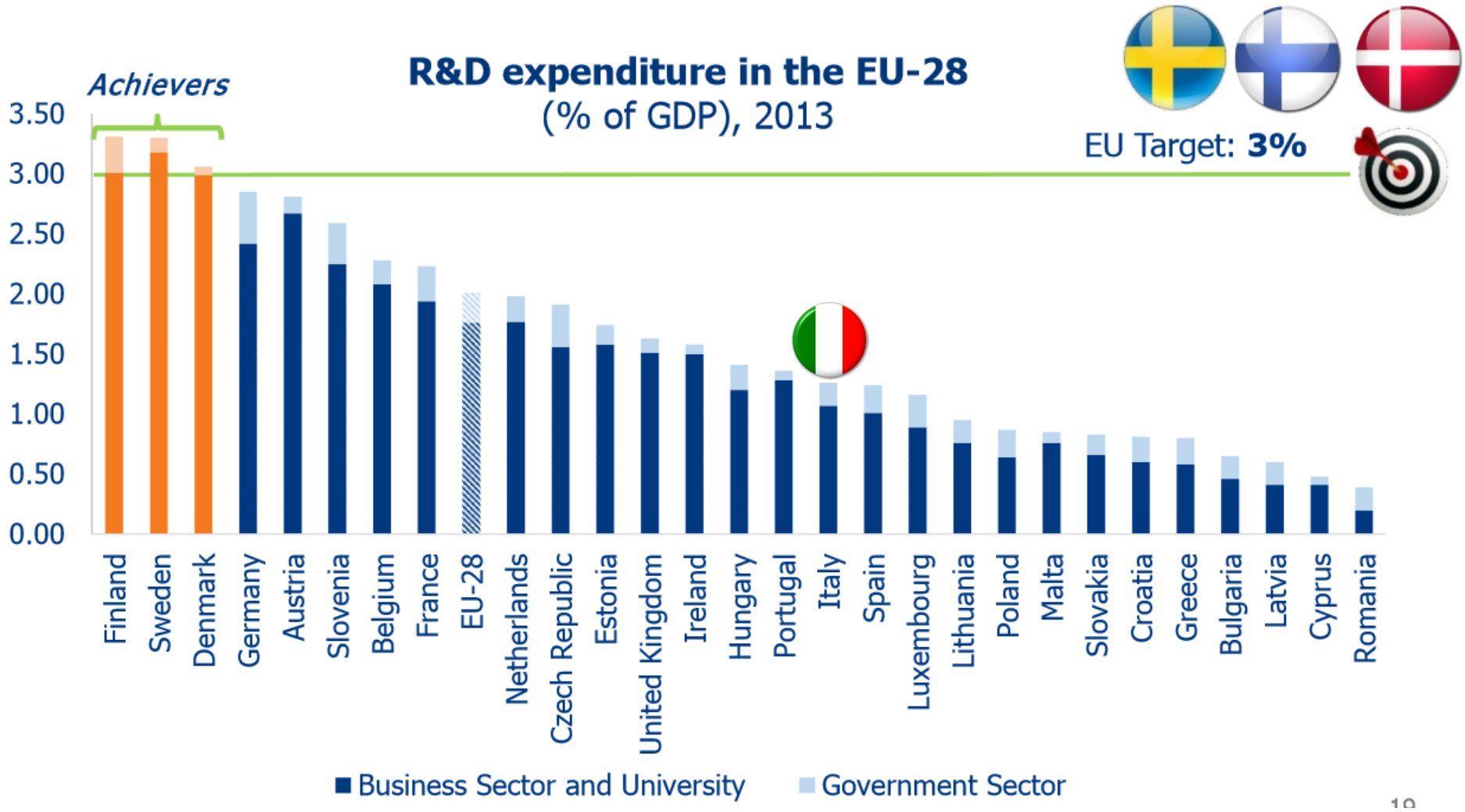
Innovation **Union**
Scoreboard 2015

The success of Nordic Countries



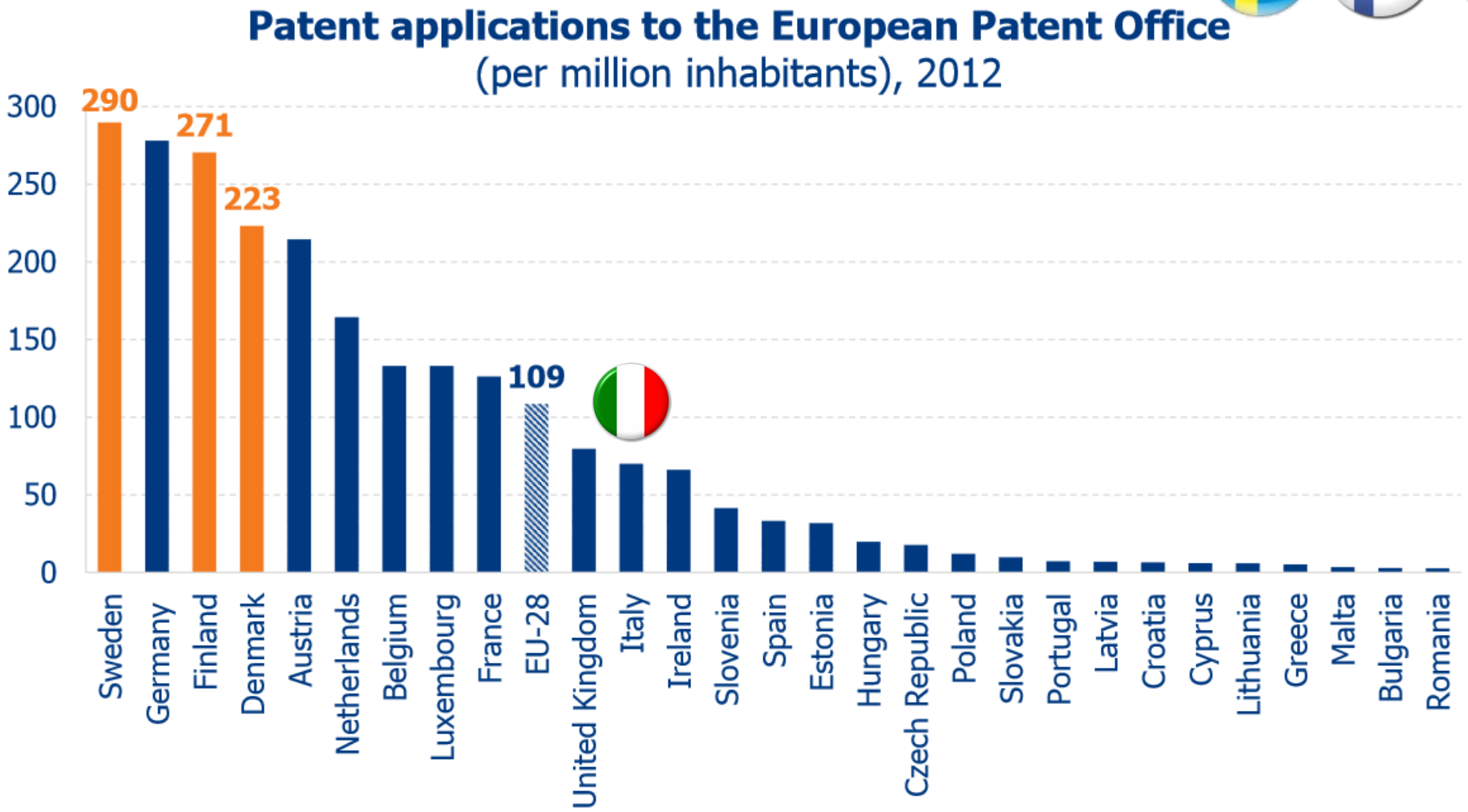
The European House
Ambrosetti

High vs. low R&D expediture



The European House
Ambrosetti

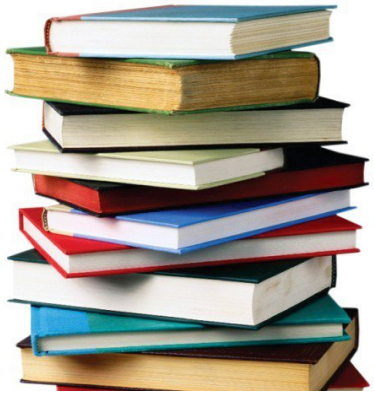
Patents!

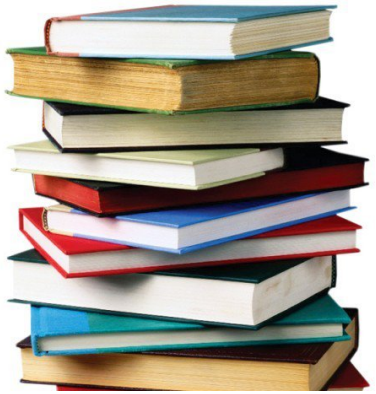


The European House
Ambrosetti

Italy is unable to translate Science into Innovation

The Italian Paradox

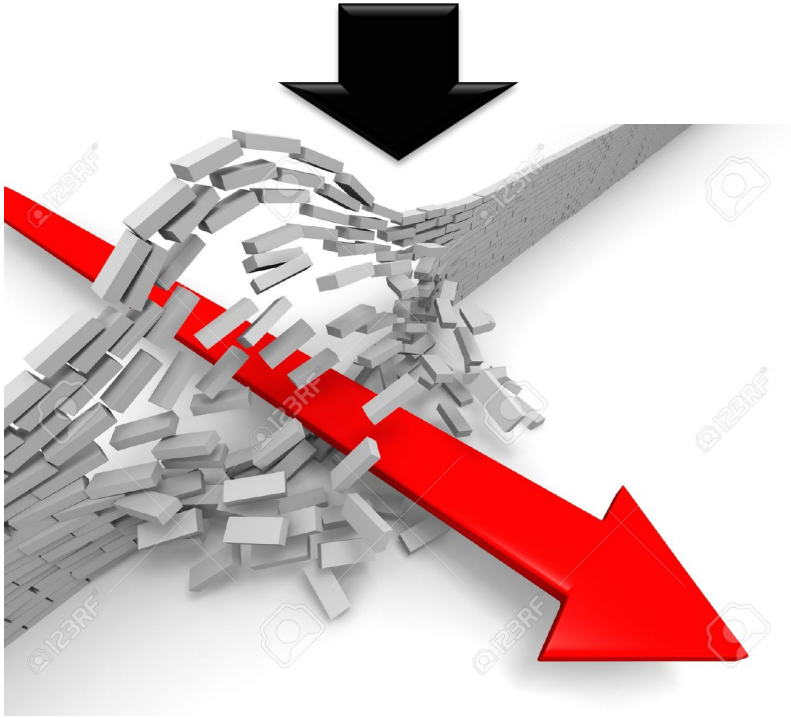




High R&D Expediture

High Risk Science

Breakthrough Discovery



Low R&D Expediture

Low Risk Science

Confirmatory Science

High risk, High gain

NEWS

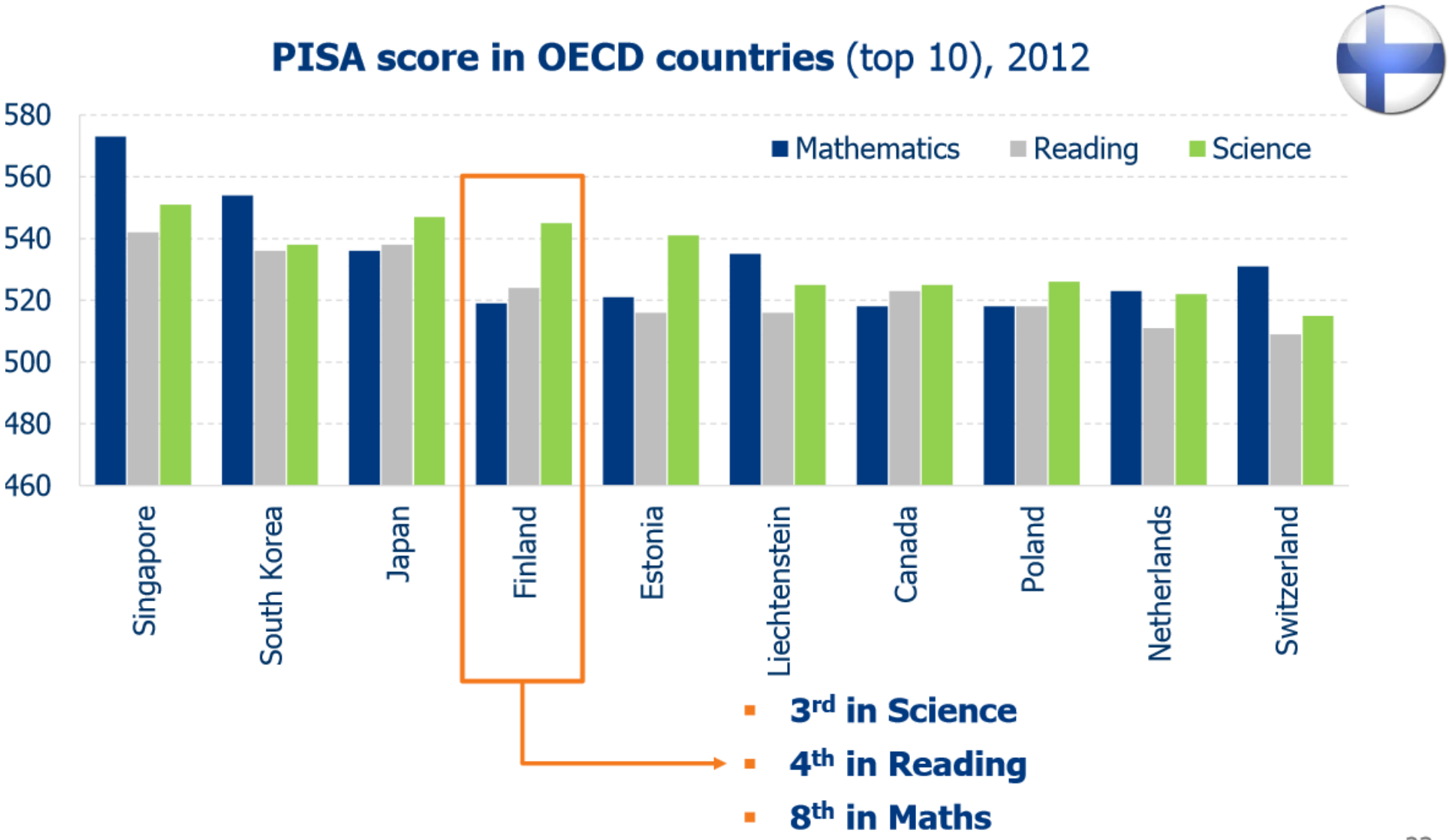
Gates Foundation backs high-risk science for big wins

Natasha Gilbert

Agricultural research is experiencing a resurgence. The Gates Foundation is leading the charge in the hopes of solving food security in the developing world.

Italy low investment in R&D results in low risk science

Education



Source: The European House - Ambrosetti on OECD data, 2015

Mathematics performance among PISA 2012 participants

Finland is among the world leaders in education

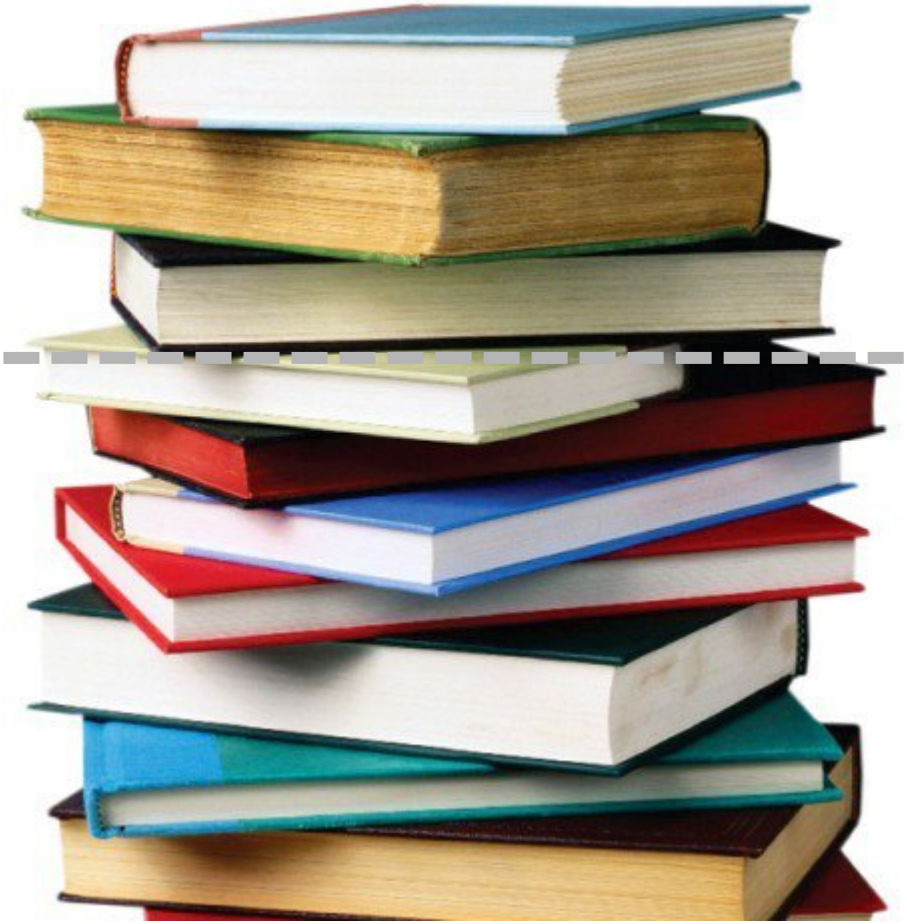
- Finland built its **outstanding, efficient, and equitable educational system** in a few decades from scratch.
- Only 11% of **applicants to the teaching profession** are accepted, which means that the only **most motivated are selected**.

I nuovi docenti: "Ho detto sì, ma mi sento deportata". "Troppe incertezze, io ho rinunciato"

R.it

Italy’s School system is unable to meet the innovation challenge

The university- industry connection



International Scientific co-pubblications

158

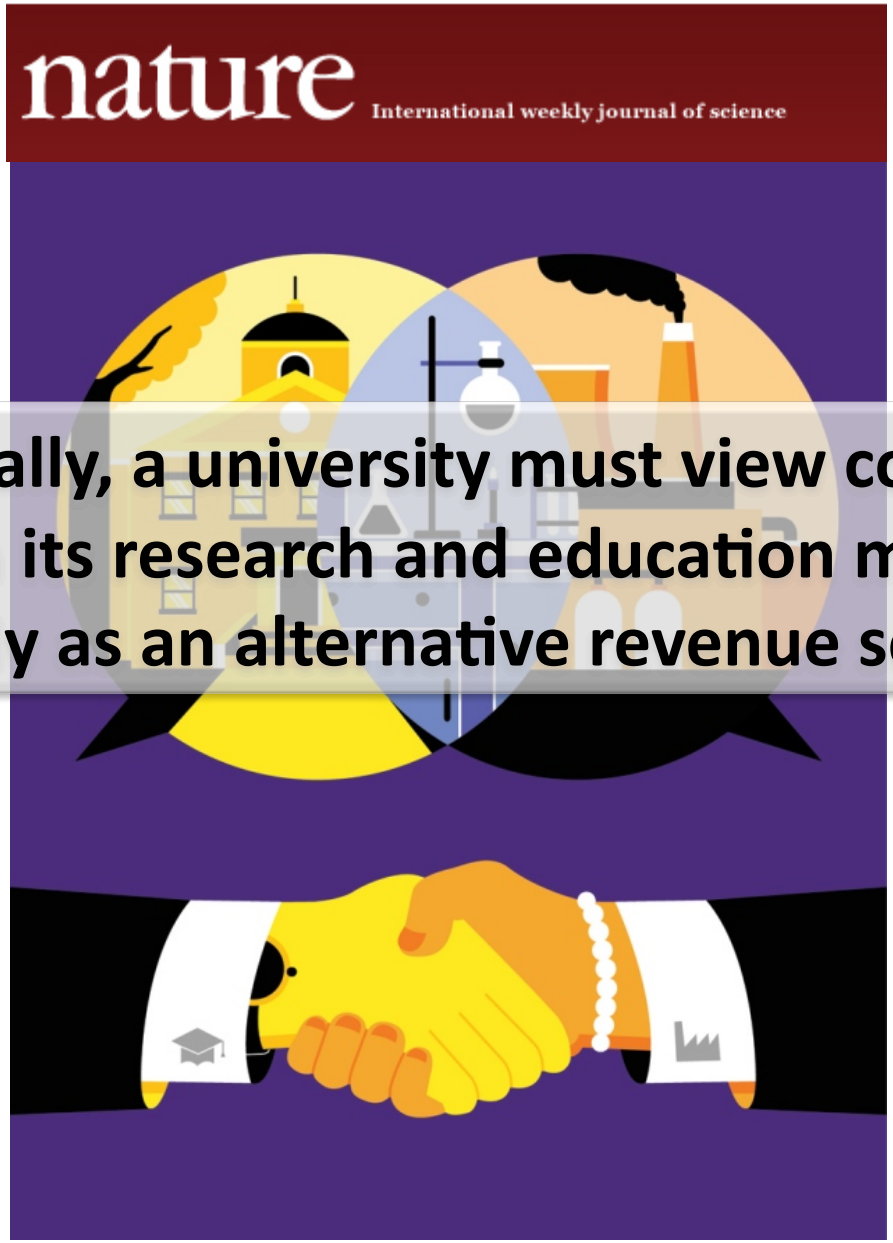
100

Publis-Private co-pubblications

59

Academia and industry: Companies on campus

Academia and industry: Companies on campus



Fundamentally, a university must view companies as partners in its research and education mission, not simply as an alternative revenue source

Academia and industry: Companies on campus

Successful academia–industry partnerships require:

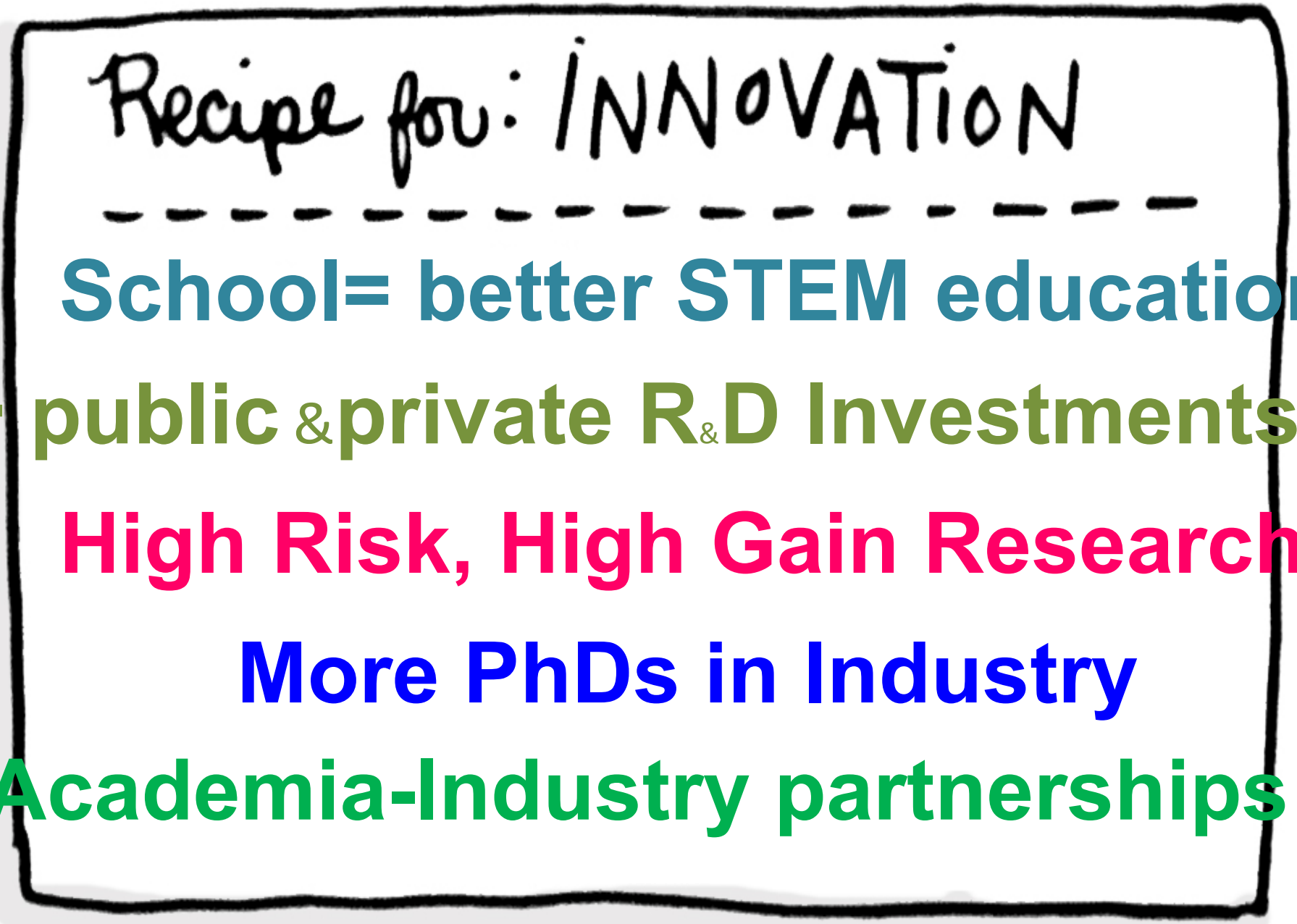
Common interests

Trust

Good communication

For each of these, <u>proximity helps</u>

University-Industry in Italy needs more reciprocal trust


Recipe for: INNOVATION
School= better STEM education
+ public & private R&D Investments
High Risk, High Gain Research!
More PhDs in Industry
Academia-Industry partnerships

@theplantlab