



Generalitat de Catalunya
Government of Catalonia
Ministry of Economy and Knowledge

The Rise of Research in Catalonia

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Vienna, November 7th, 2011

INDEX

1. Current picture

2. From the mid-nineties to 2010: evolution of indicators

- a. Scientific excellence: ERC grants
- b. R&D expenditure [% GDP]
- c. Attraction of EU funding (Framework Programs)
- d. Scientific publications: Catalan share vs. EU and the world
- e. Intellectual property: patent applications to the EPO per million inhabitants
- f. Funding of Catalan R&D: sources

3. Research Funding

- a. Spain
- b. Catalonia
- c. EU: FEDER Structural funds

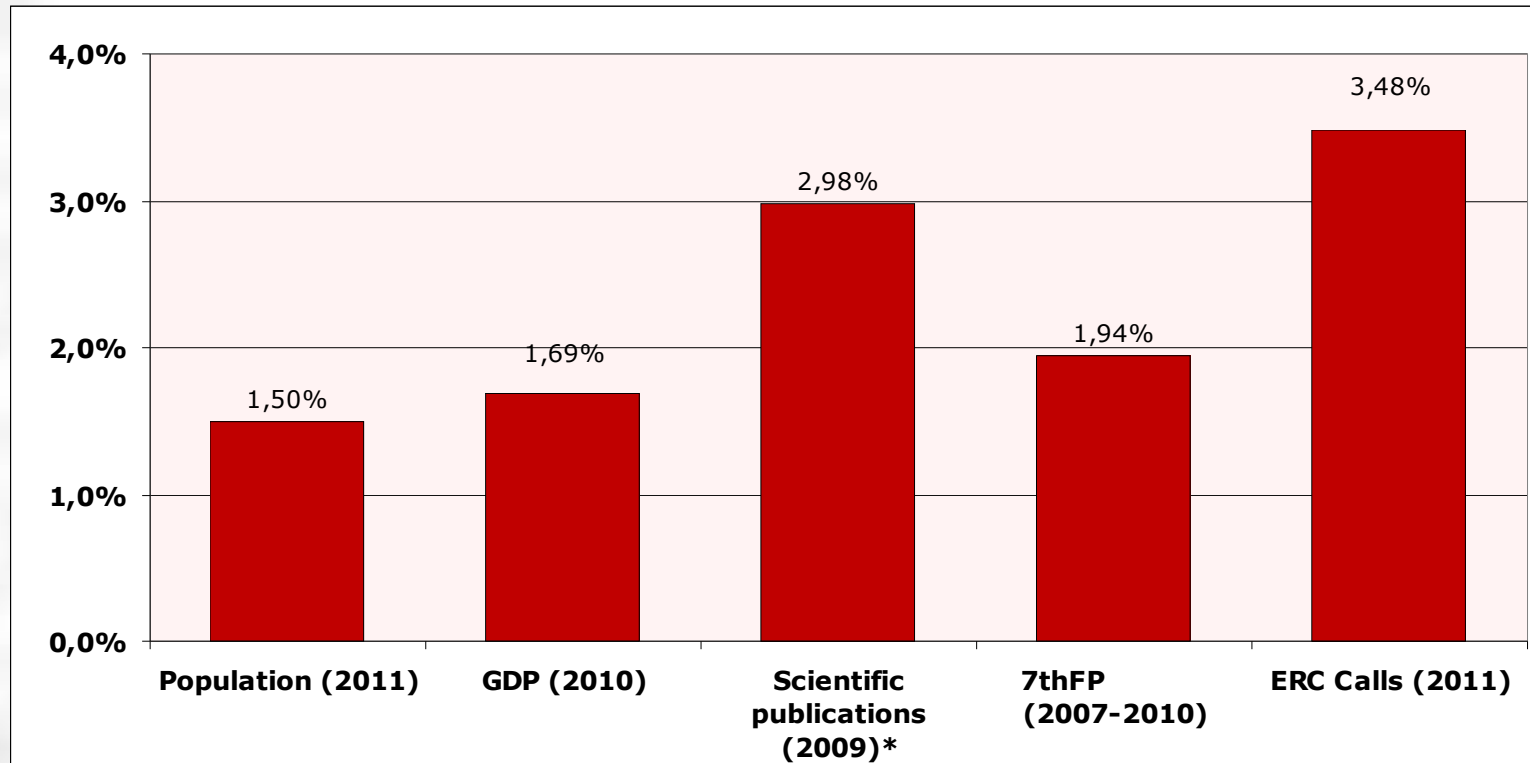
4. Research Policies

- a. Talent: ICREA
- b. Research Centers
- c. Large Facilities

5. Challenges ahead

1. Current picture

OVERVIEW



Catalan indicators: ratio as percentage of European values

Population, GDP and ERC calls: EU-27

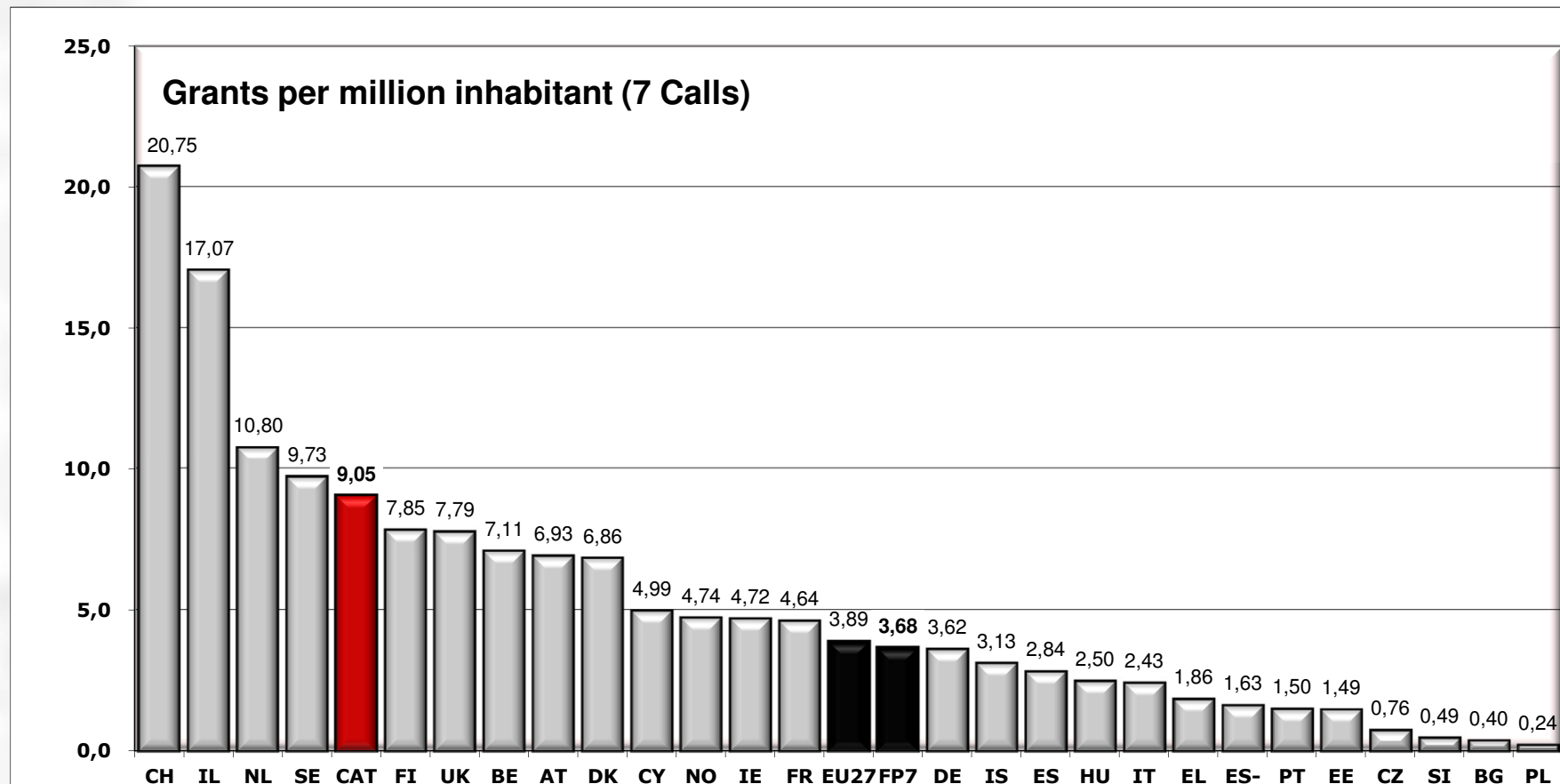
Scientific publications: EU-25

7th Framework Program: FP7 area

** Source: Mendez, R.; Suñen, E. i Rovira, L.: National Science Indicators 2009*

2. From the mid-nineties to 2010: evolution of indicators

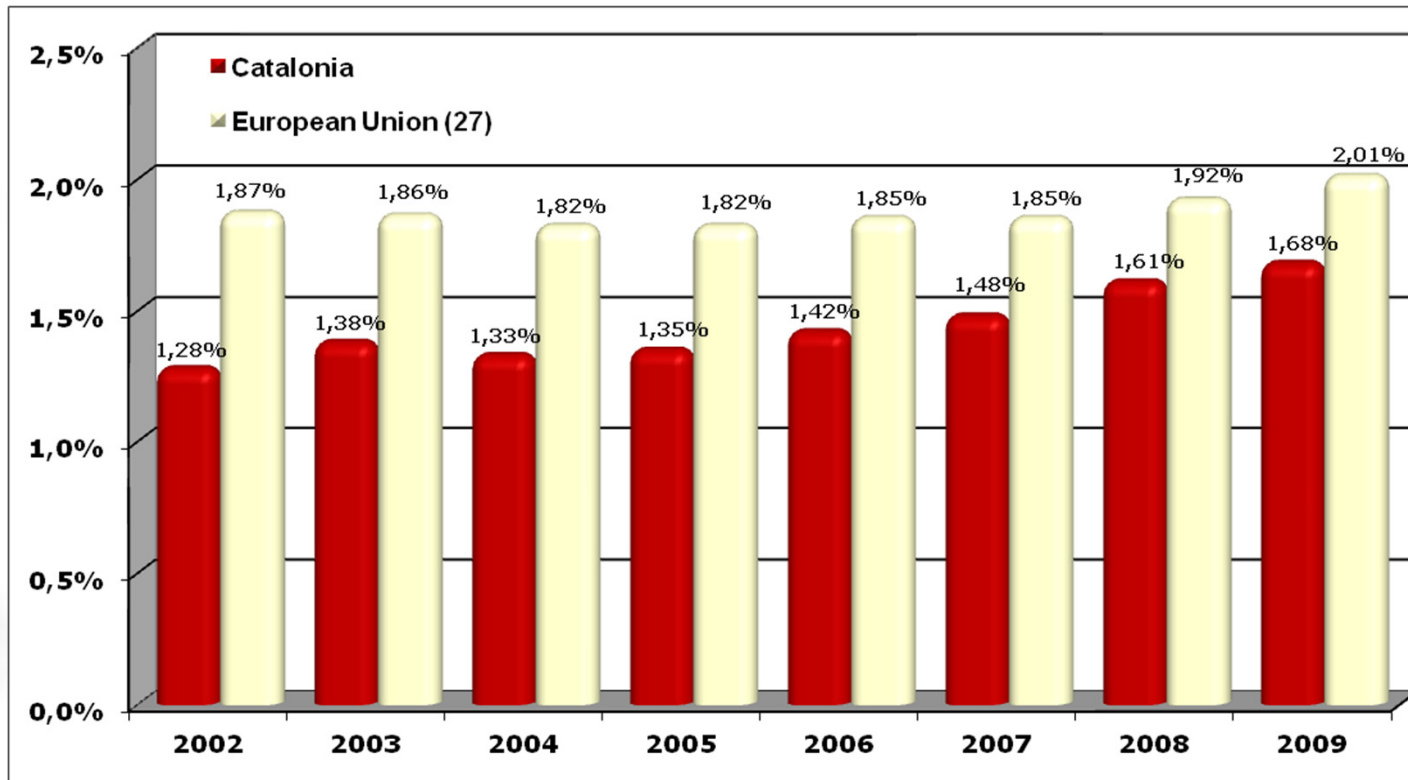
SCIENTIFIC EXCELLENCE: ERC grants



Switzerland (CH), Israel (IL), The Netherlands (NL), Sweden (SE), Catalonia (CAT), Finland (FI), United Kingdom (UK), Belgium (BE), Austria (AT), Denmark (DK), Cyprus (CY), Norway (NO), Ireland (IE), France (FR), European Union (EU27), Framework Programme Area (FP7), Germany (DE), Iceland (IS), Spain (ES), Hungary (HU), Italy (IT), Greece (EL), Spain excluding Catalonia (ES-), Portugal (PT), Estonia (EE), Czech Republic (CZ), Slovenia (SI), Bulgaria (BG), Poland (PL).

2. From the mid-nineties to 2010: evolution of indicators

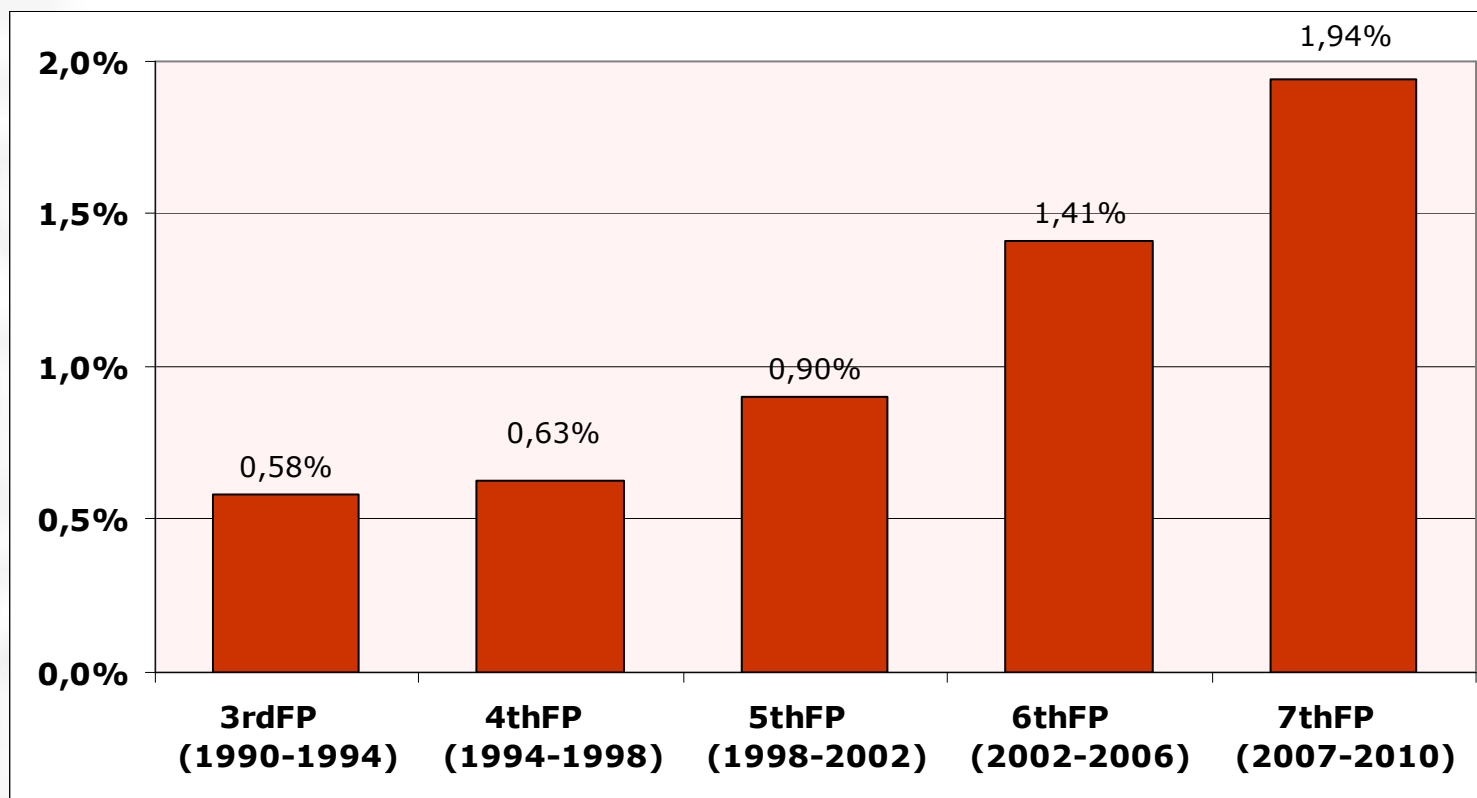
R&D EXPENDITURE [% GDP]



The R&D expenditure in Catalonia has undergone a sustained growth in the last decade

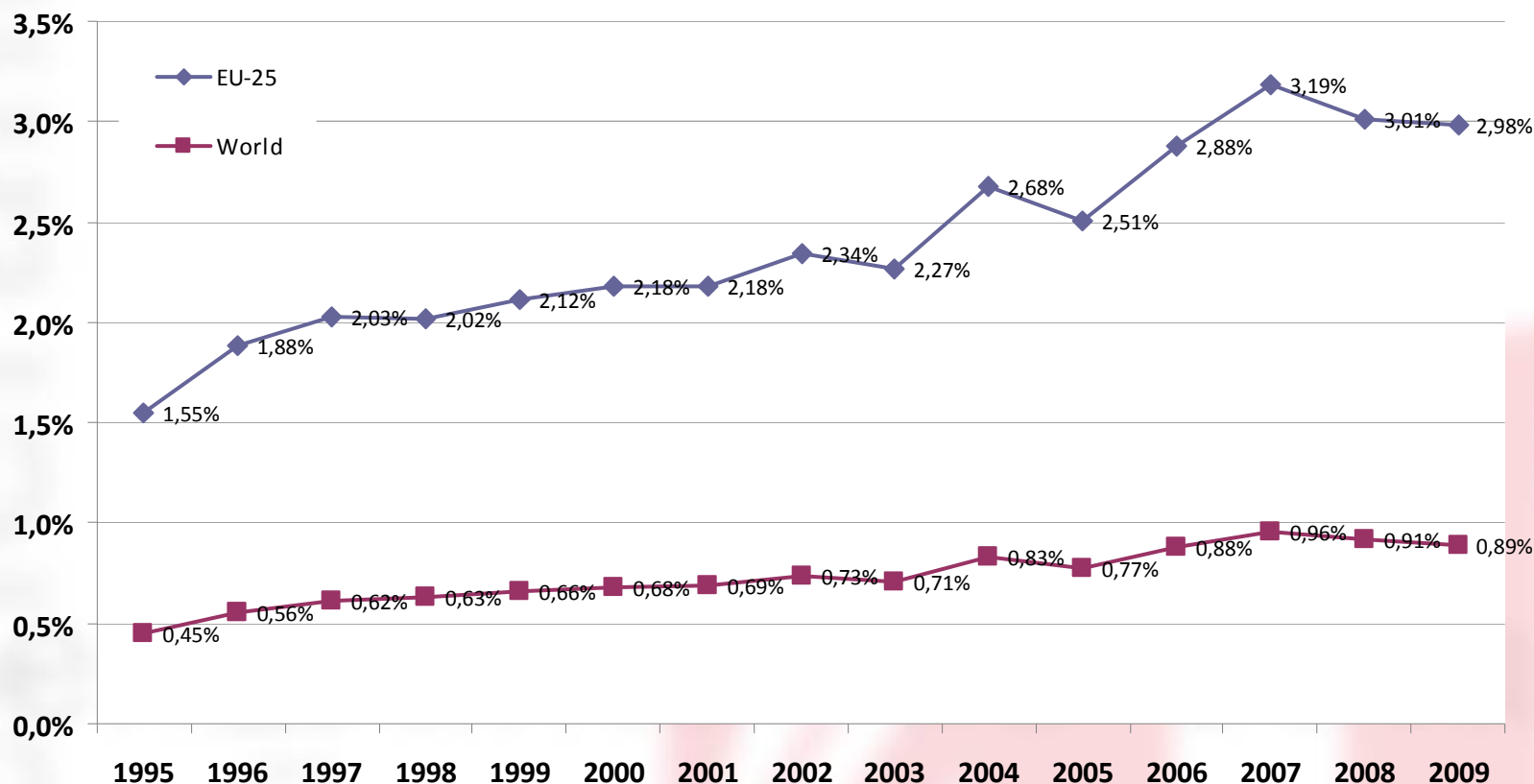
2. From the mid-nineties to 2010: evolution of indicators

ATTRACTION OF EU FUNDING (FRAMEWORK PROGRAMS)



2. From the mid-nineties to 2010: evolution of indicators

SCIENTIFIC PUBLICATIONS: Catalan share vs EU and the world

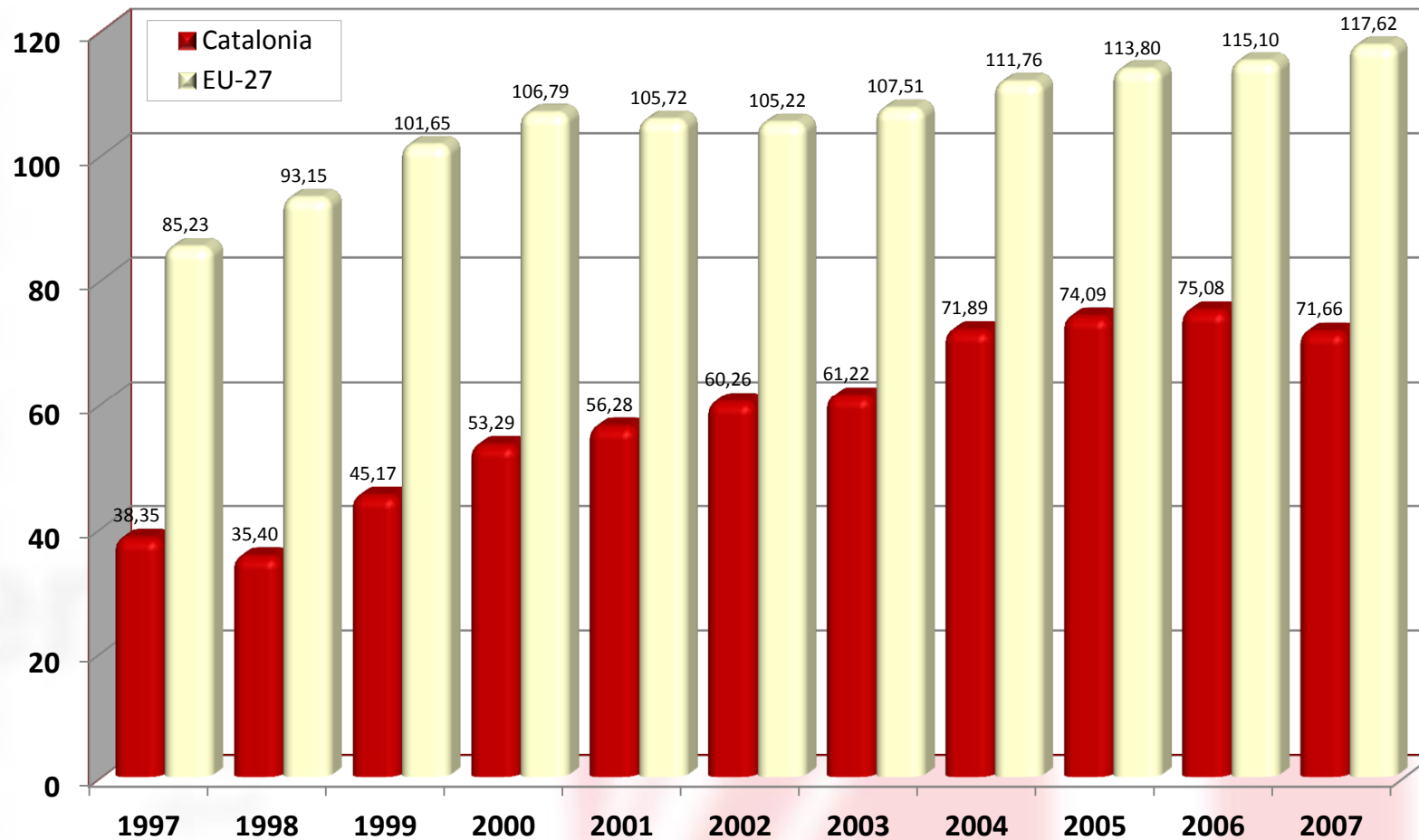


Source: Mendez, R.; Suñen, E. i Rovira, L.: *National Science Indicators 2009*

Data 2009 for Catalonia: 10,643 papers (1.43 papers / thousand inhabitants); 2.98% of Europe's and 0.89% of the world's totals.

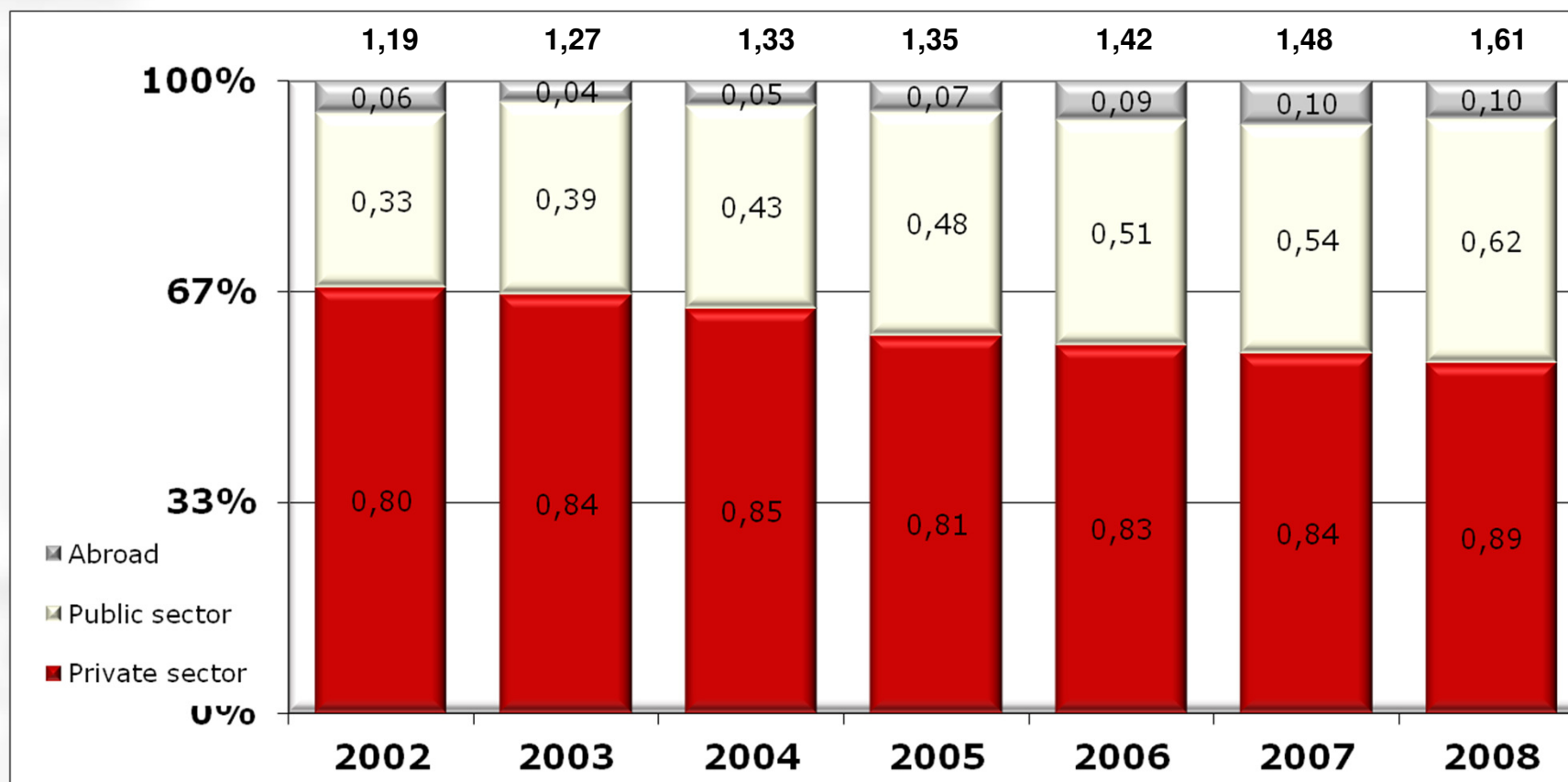
2. From the mid-nineties to 2010: evolution of indicators

INTELLECTUAL PROPERTY: Patent applications to the EPO per million inhabitants



2. From the mid-nineties to 2010: evolution of indicators

FUNDING OF CATALAN R&D: sources

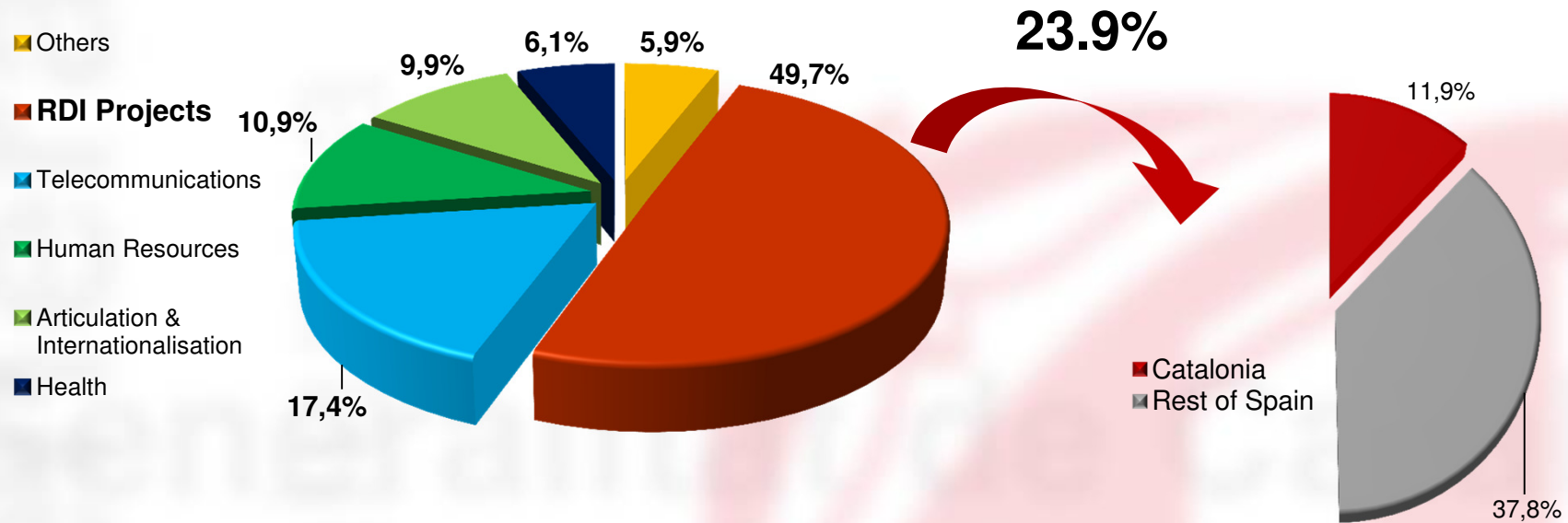


Data as % of GDP and as percentage of total R&D funding

3. Research funding

SPAIN

From the mid-eighties, projects have been awarded in Spain in an open and competitive basis. The temptation to distribute research funds among Universities and Research Institutions in an ad-hoc fashion was resisted



Competitive funding from Spanish Government: 49.27 % of National Plan for RDI (data 2008)

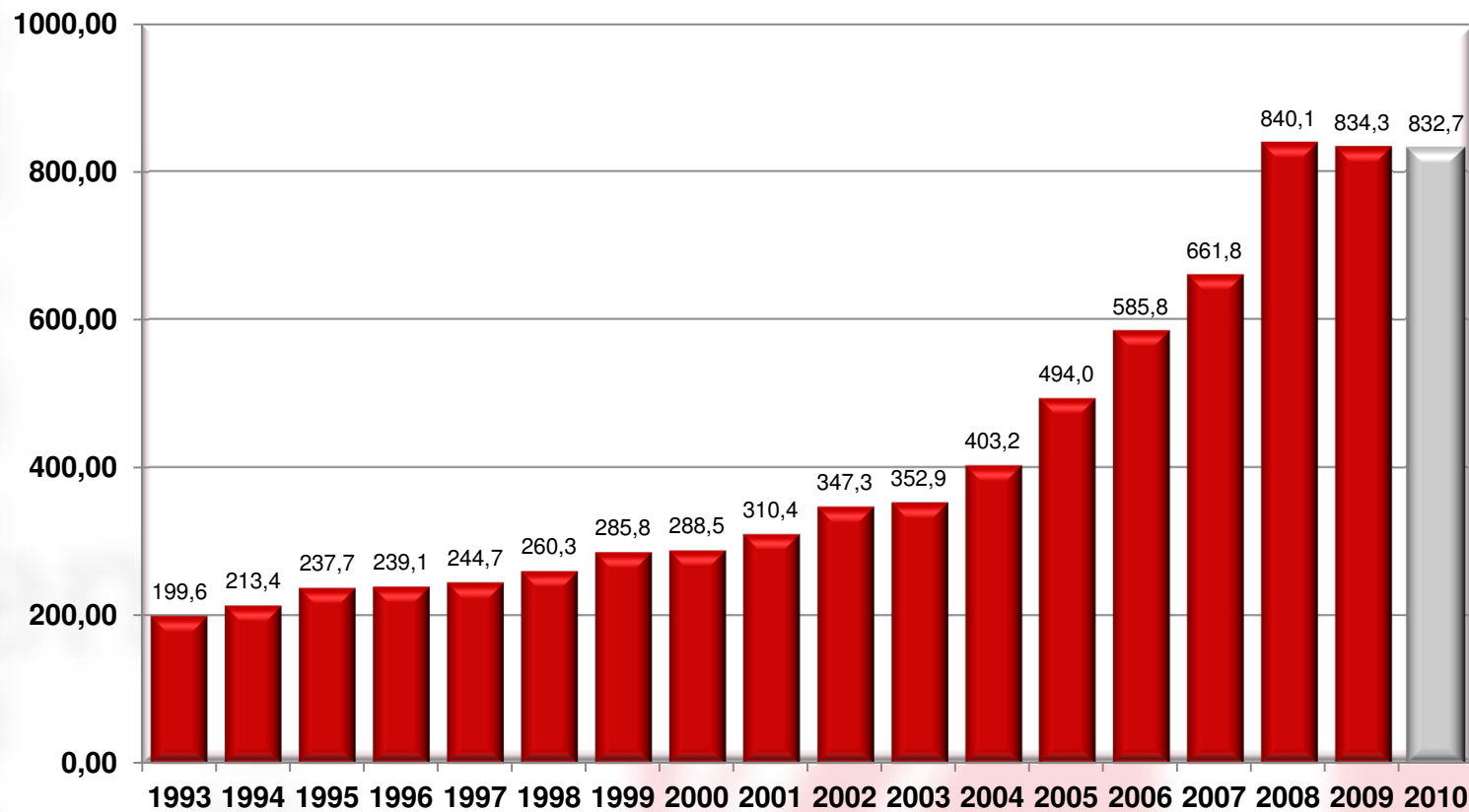
Catalonia receives 23.9 % of the Spanish Government Competitive funds

Source: FECYT, SISE 2009

3. Research funding

CATALONIA

*R&D Budget Commitment from the Catalan Government.
Evolution 1993 – 2010*



Budget (in M€): expenses on R&D from all departments of the Catalan Government

3. Research funding

EU: FEDER Structural Funds

Period	EU FEDER funds for R&D [M€]	% of total FEDER funds received
2000-2006	555.83	14.1
2007-2013	450.93	39.5

Evolution EU FEDER funds received in Catalonia for Competitiveness, Innovation, Research and Development, and percentage of total FEDER funds received for the periods indicated

4. Research & Development Policies

- ❑ TALENT
- ❑ RESEARCH CENTERS
- ❑ LARGE FACILITIES
- ❑ SYSTEM CONSOLIDATION



4. Research & Development Policies

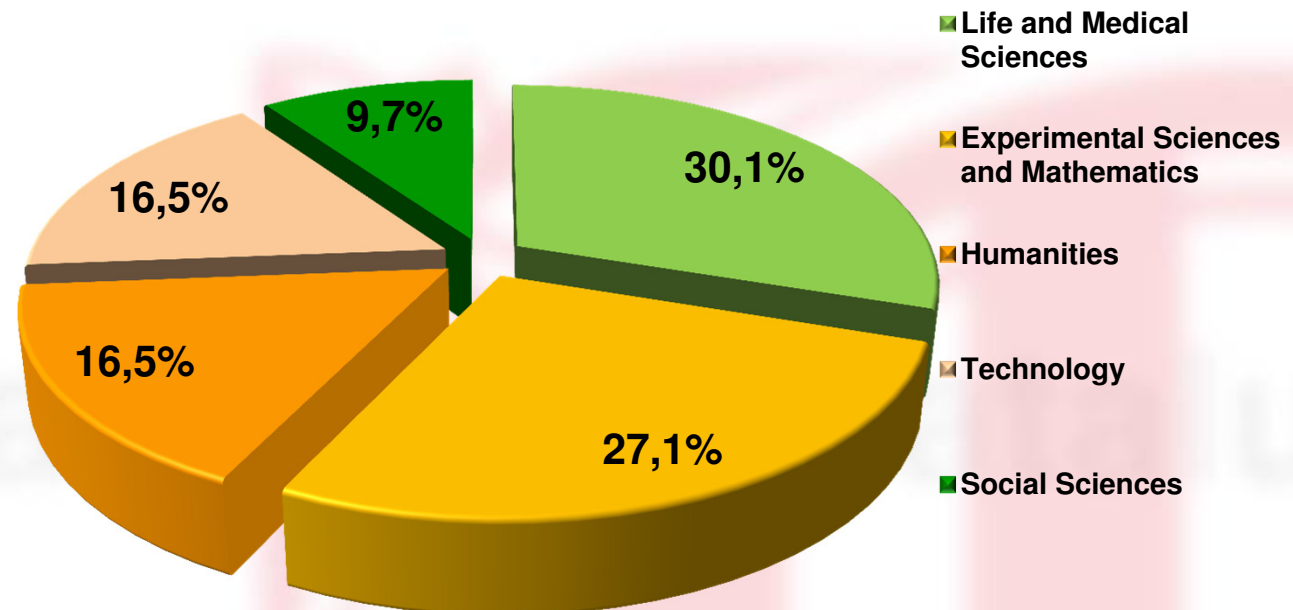
TALENT: ICREA

A Foundation with public funding



FEATURES:

- ❑ Recruitment of international talent
- ❑ New hiring formulae



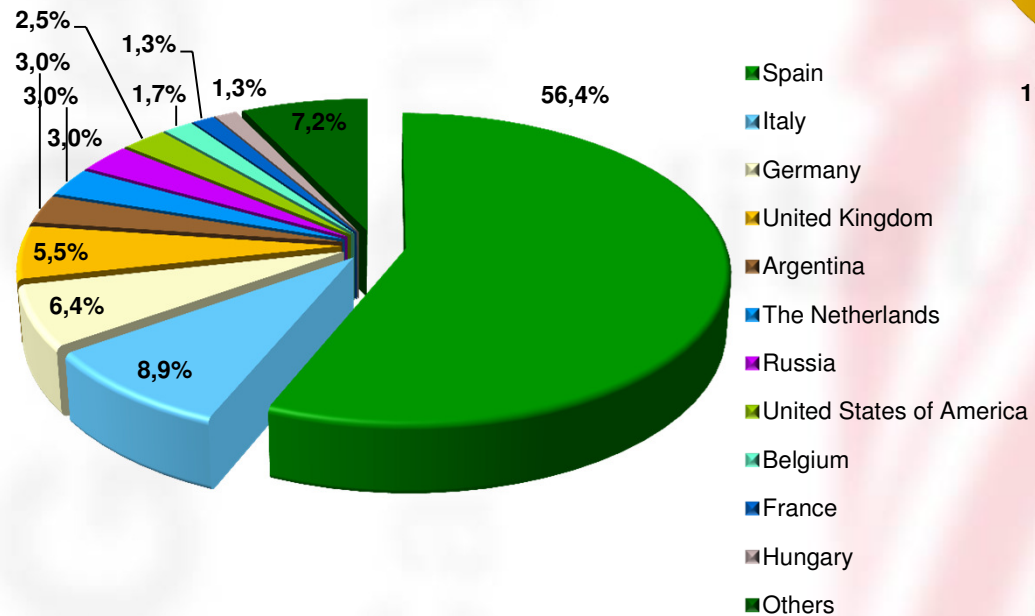
Multidisciplinary Talent = 236 Researchers and Research Professors

Data: November 2011

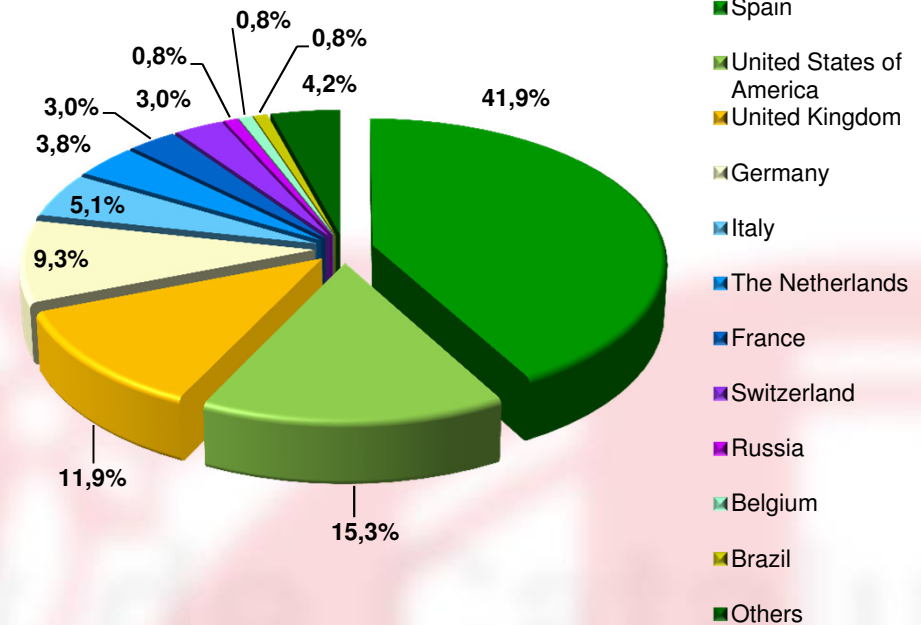
4. Research & Development Policies

TALENT: ICREA

ICREA Researchers by nationality



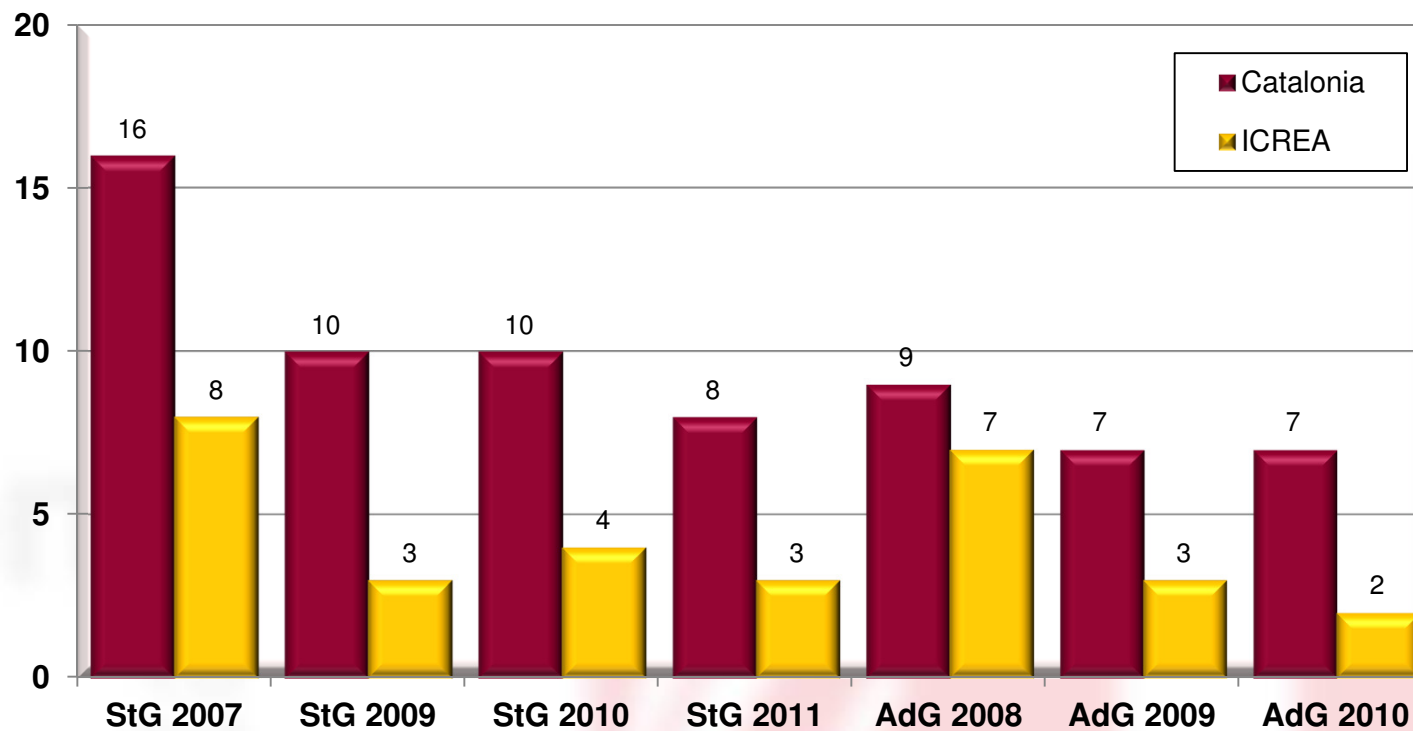
ICREA Researchers by country of origin



4. Research & Development Policies

TALENT: ICREA

ICREA strengthens competitiveness for the obtention of ERC grants



4. Research & Development Policies

RESEARCH CENTERS



10 YEARS AGO:

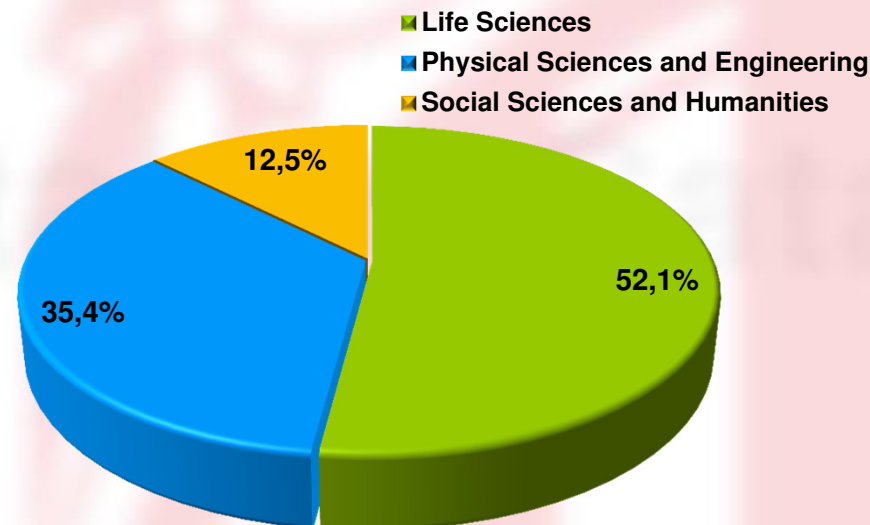
- A network of hospitals with noteworthy research activity and a good base of universities, both essential in the growth of research.
- Some CSIC Centers located in Catalonia, in a disproportionately low number..

But... Catalonia was weak in Research Centers. Building up new centers became important in our R&D policy.

CURRENTLY:

A system of Research centers.

Percentage of centers devoted to each field. Classification according to ERC



4. Research & Development Policies

RESEARCH CENTERS





Principles

GOVERNANCE	<ul style="list-style-type: none">▪ Legal standing (typically, foundations)▪ Labor contracts. No civil servants (except those seconded from universities that remain civil servant of their universities).▪ Multiannual financial programming agreed with the Catalan Government▪ Private sector rules▪ Boards with authority and Government participation▪ Control over its own personnel policy and hiring (for the scientific, management and administrative staff).▪ Director: Ideally it should be a distinguished scientist. The Director is more than a scientific director, it is also endowed with management authority
RESEARCH	<ul style="list-style-type: none">▪ Critical mass of researchers▪ International evaluation committee and periodic evaluation▪ Ambition of scientific excellence
ENVIRONMENT	<ul style="list-style-type: none">▪ Location at university campuses▪ Cooperative attitude towards universities and other research centers. International orientation

4. Research & Development Policies

RESEARCH CENTERS

Some flagships

		<i>ICREA Researchers</i>	<i>ERC Grants</i>	<i>EU projects (as leader)</i>
	CRG (Center for Genomic Regulation)	11	5	16
	IRB (Biomedical Research Institute)	13	1	11
	ICIQ (Catalan Institute of Chemical Research)	8	7	6
	ICFO (Catalan Institute of Photonics)	10	6	11
	CREI (Center of Research on International Economy)	0	5	3

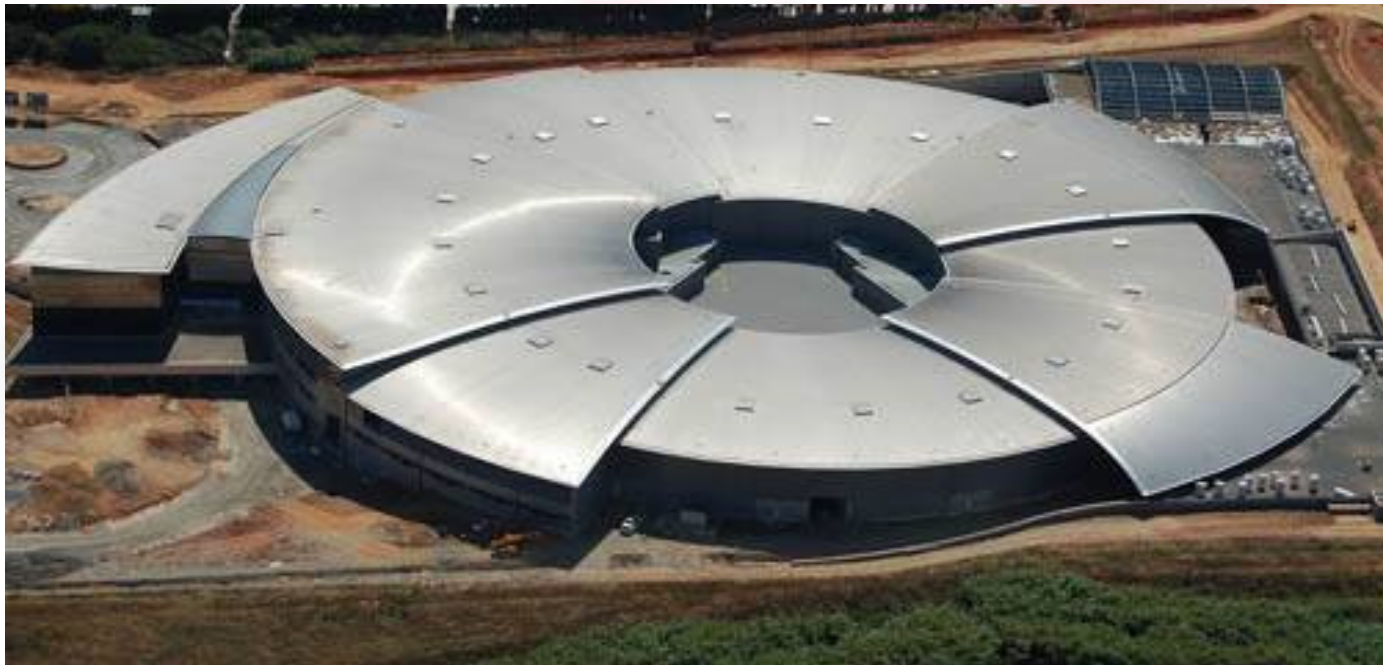
The number of ICREA researchers, ERC grantees and European projects participating as leaders correspond to current data and activities of these centers

4. Research & Development Policies

LARGE FACILITIES

ALBA

- A new generation Synchrotron: final tests to start operating being performed on November 2011

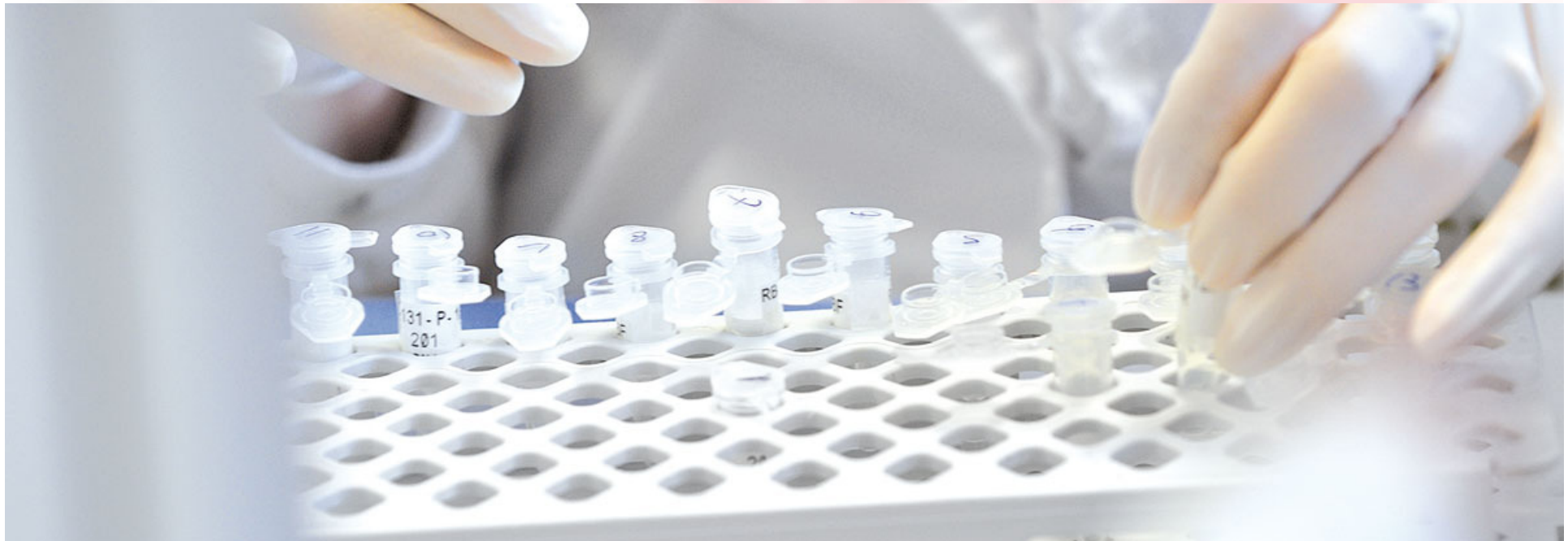


4. Research & Development Policies

LARGE FACILITIES

CNAG (National Center for Genomic Analysis):

- CNAG can currently sequence 250 Gb per day (250,000,000,000 bases) and generate a complete human genome at 30-fold coverage in less than one day (Operations started on March 2010)



4. Research & Development Policies

LARGE FACILITIES

BSC (Barcelona Supercomputing Center):

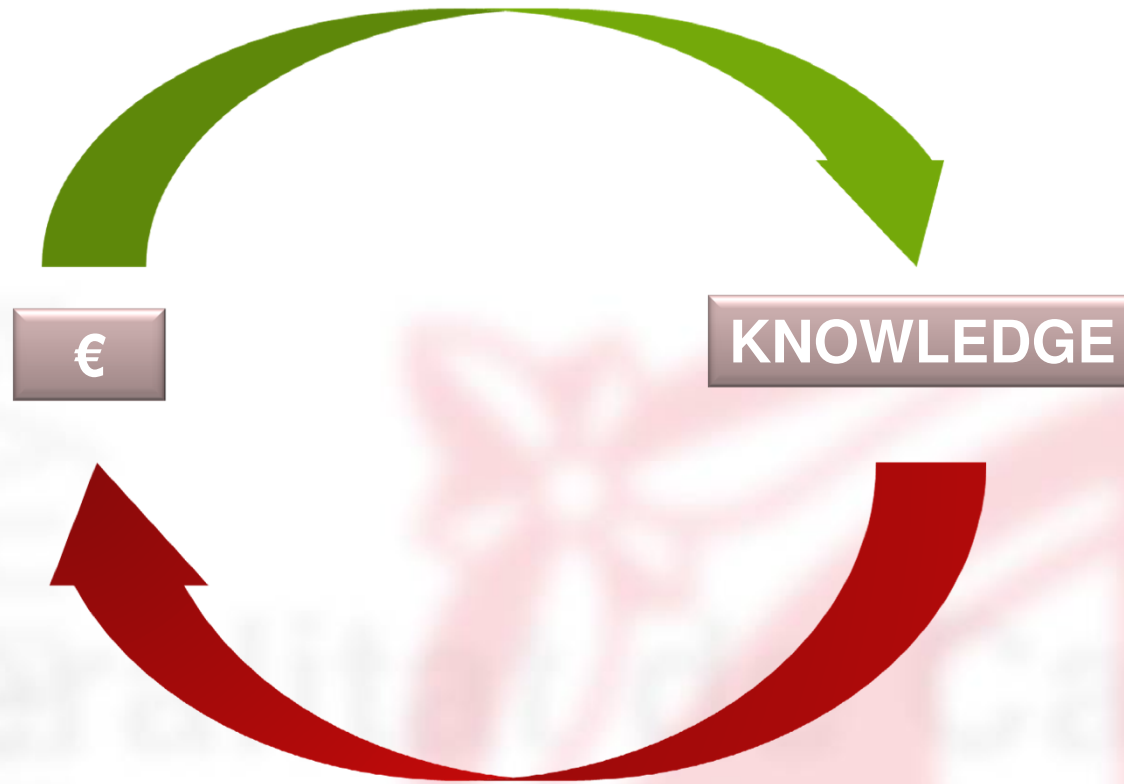
- ❑ BSC-CNS manages [MareNostrum](#), one of the most powerful supercomputers in Europe, located inside an old chapel. BSC participates in the EU project PRACE



5. Challenges ahead

- ☐ Consolidate budget commitment
- ☐ Attract and maintain talent
- ☐ Efficiency
- ☐ Internationalisation & Keeping international position

5. Challenges ahead



5. Challenges ahead



And there is an obvious one:
not being weakened by the
crisis. It is a thought challenge,
but the system is resilient and
the public authorities heavily
committed



Generalitat de Catalunya
Government of Catalonia

Thank you for your attention

Further contact:

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