



OECD Reviews of Regional Innovation: Catalonia, Spain

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OECD Peer Review Process

The year-long study involved several missions of OECD staff, international experts and Peer Reviewers from:

Piedmont, Italy

Flanders, Belgium

Phase I

Scoping of key issues with local team.

Analysis of strengths, weaknesses, opportunities and threats.



Phase II

Interviews with public and private stakeholders.

Assessment of strategies and policies.



Phase III

Presentation of analytic report and policy recommendations.

Exchange of good practices with other OECD countries and regions.

An important region on all counts

Within Spain...

- 6% of surface area
- 16% of population (2nd most populous)
- 19% of GDP (largest share of all regions)

Catalonia is at the same scale as

Surface Area

Netherlands
Belgium

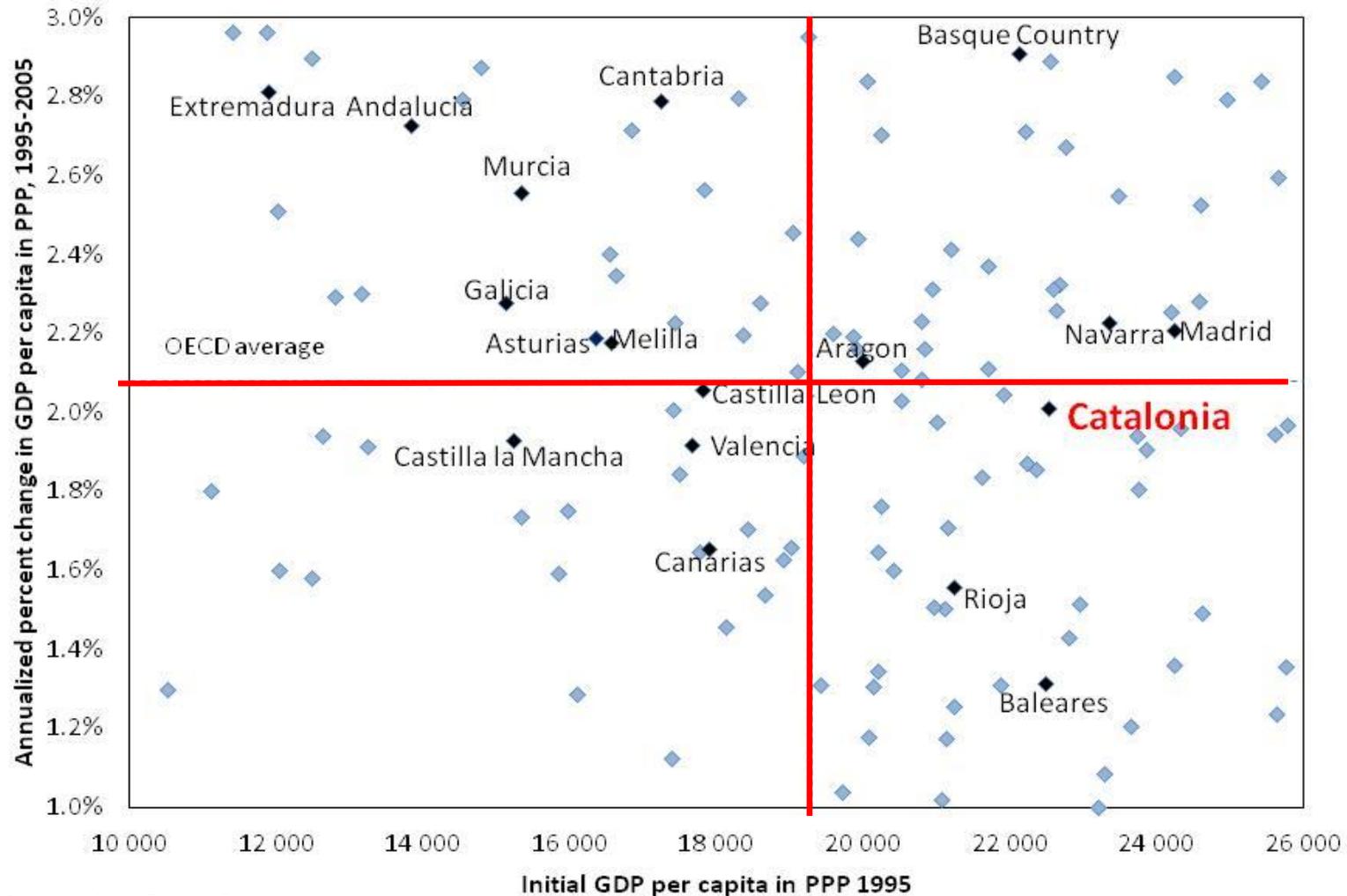
Population

Switzerland
Denmark

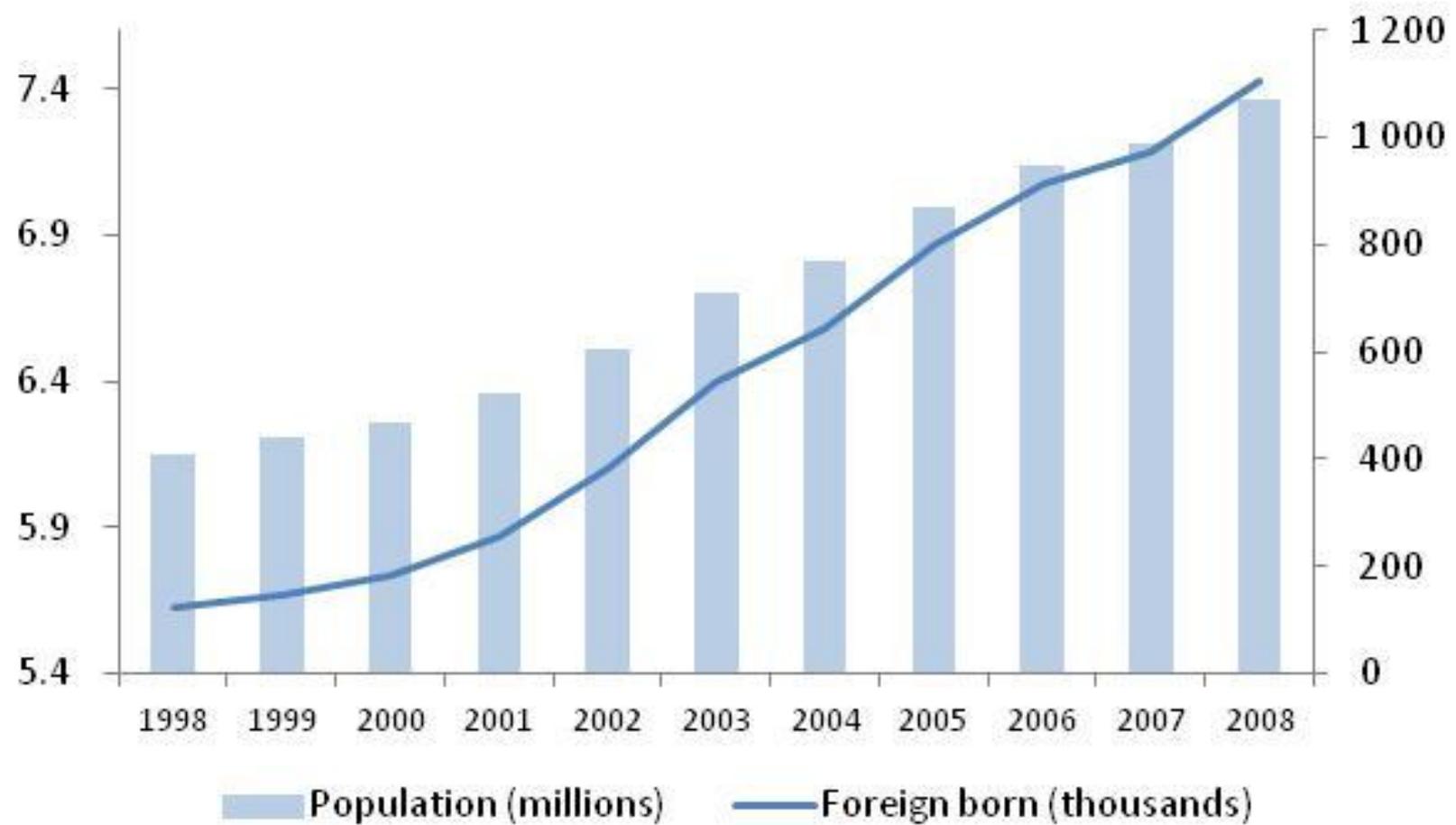
Economy

Portugal
Norway

Positive growth trend in prior years, but below OECD averages...



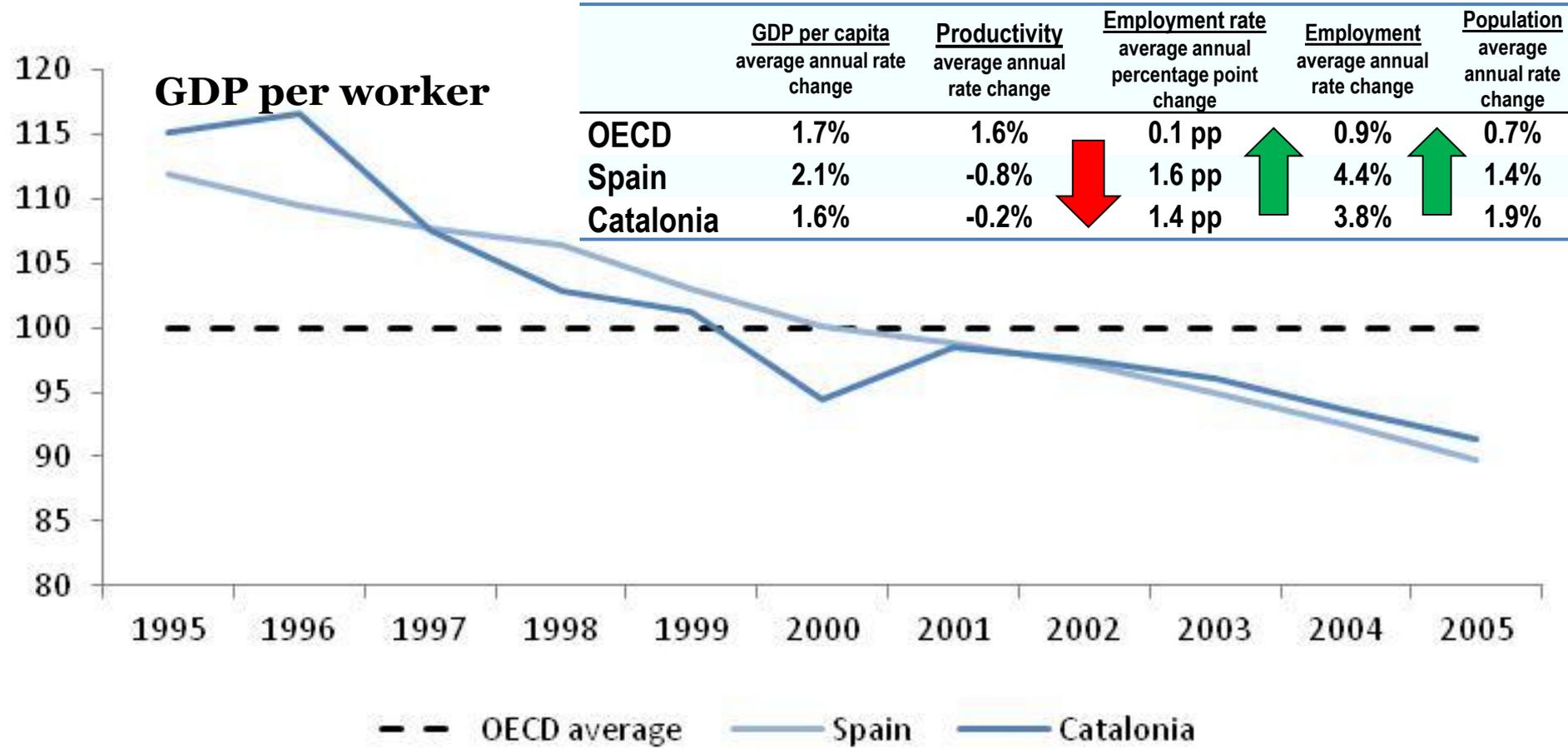
...an extensive grown model driven by population increases...



Source: OECD calculations based on data from INE.

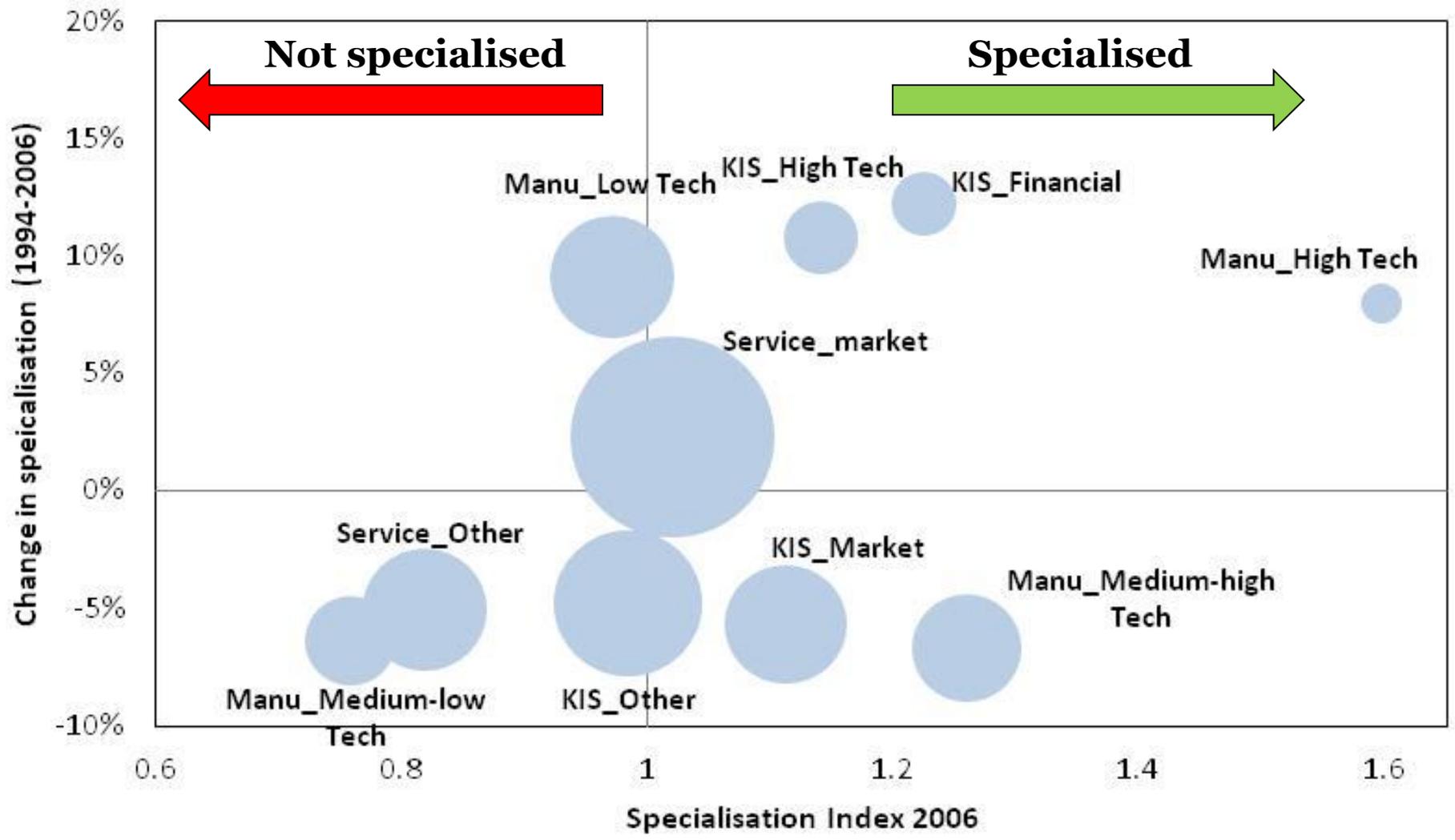
...and slipping productivity performance

- 115% of OECD average in 1995 to 91% in 2005
- Negative productivity growth over the period



Source: OECD Regional Database. Note: Normalised relative to OECD average in each year.

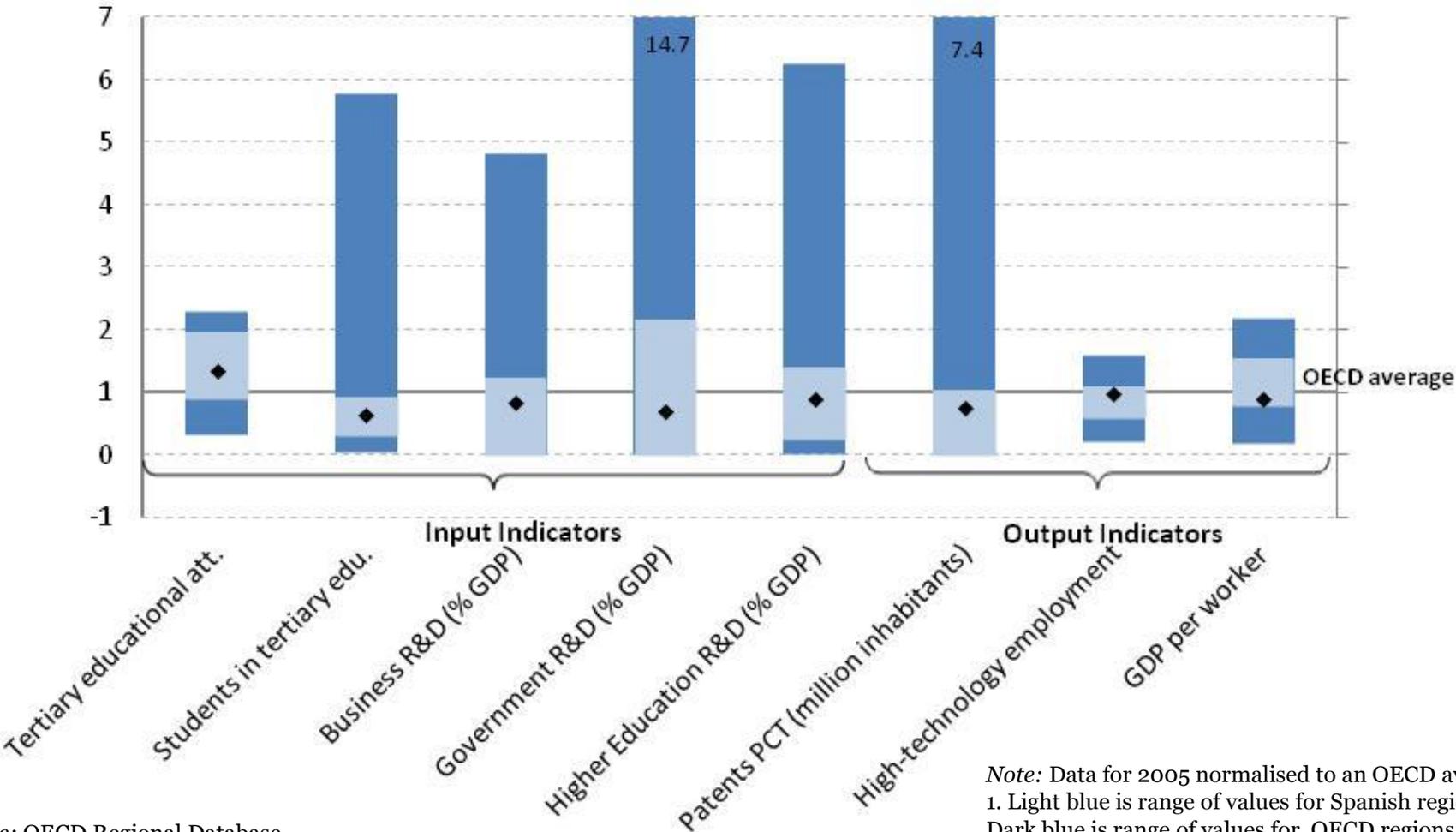
Industrial structure, specialisation and firm demography play a role



Source: OECD Regional Database. Note: Specialisation with respect to Spain. Manu=Manufacturing, KIS=Knowledge Intensive Services.

A leading region in a lagging country for traditional innovation-related indicators

Tertiary educational attainment a strength relative to other OECD regions

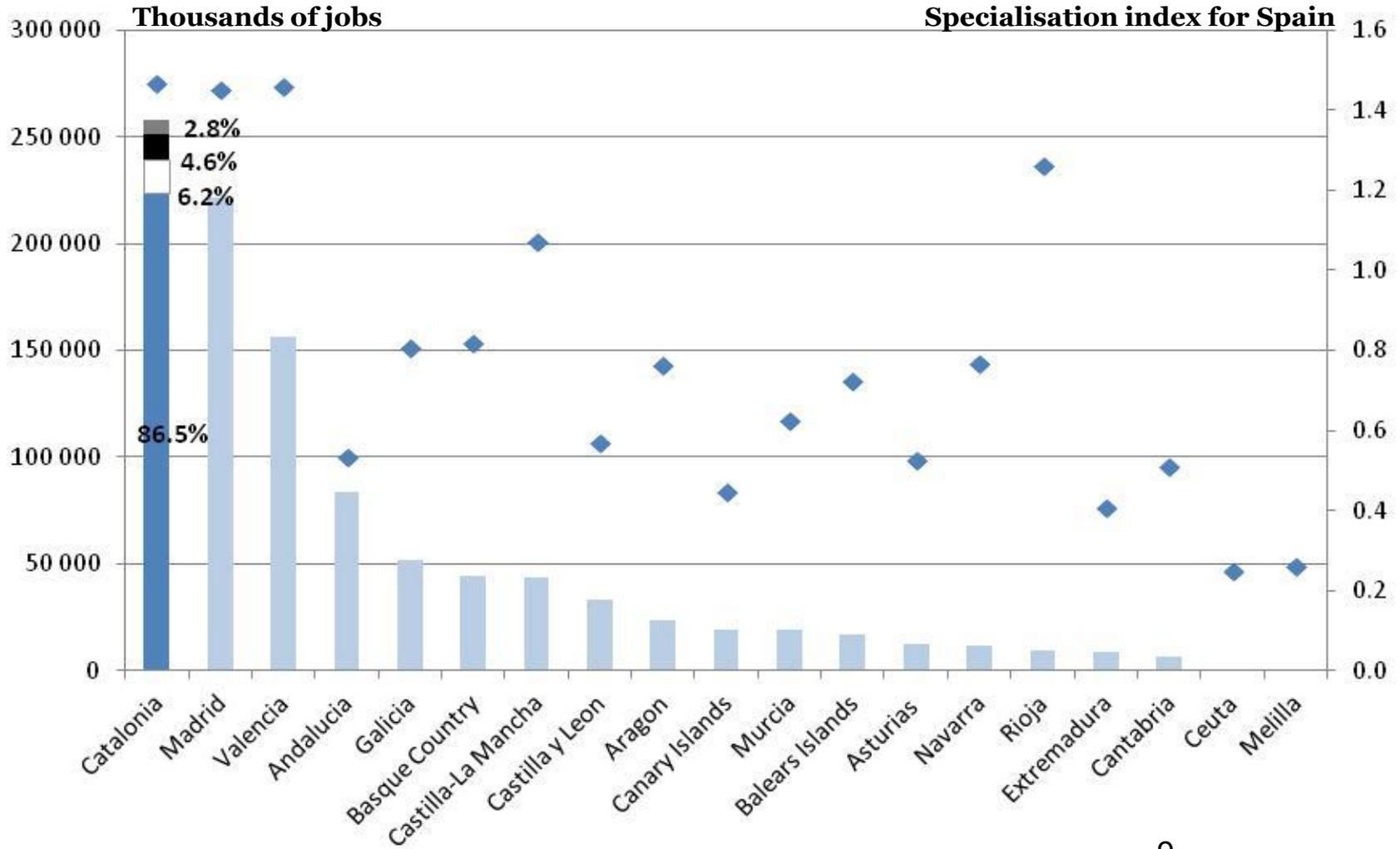


Source: OECD Regional Database.

Note: Data for 2005 normalised to an OECD average of 1. Light blue is range of values for Spanish regions. Dark blue is range of values for OECD regions.

And new, non-technological indicators?

Creative industries based on OECD classification



Source: OECD calculations based on data from INE.

Strengths and Weaknesses

Strengths

- High political commitment to S&T and innovation (CARI)
- A number of top quality universities and public research centres (Spanish and Catalan centres)
- A sizeable pool of qualified scientists
- International excellence in some sectors
- High level of creativity
- Regional and local dynamism (including HEIs)
- Good infrastructure, including in S&T
- Significant increases in R&D investment
- Attractiveness (FDI, top international scientists, students, entrepreneurs)
- A leading region in Spain
- Strength of the regional health care system
- Capacity for *ex ante* research project evaluation

Weaknesses

- Rigidities in the HEI sector
- Relative scarcity of middle level HRST (technicians)
- Low technological absorptive capacity of the vast majority of SMEs (dual industrial structure)
- Spin-offs that do not grow
- Weak intellectual property rights culture
- R&D intensity across manufacturing lower than most EU counterparts
- Problems of critical mass/ performance in different centres
- Complex governance
- Low “behavioural additionality” of support instruments; windfall benefits
- Fuzzy policy mix and lack of strategic priority focus
- Financial markets ill-adapted to innovation-related investment
- Low level of public-private co-operation
- Bureaucratic management of support programs, and lack of *ex post* evaluation of programme effectiveness

OECD Policy Recommendations:

Integration in the PRI 2010-2013

A brief historical recap

- Early creation of inter-ministerial committee (CIRIT), but “academic” interests dominated
- 1993-2000: the first two Research Plans
 - Primacy of the academic approach but recognition of complementarities
- 2001-2004: Third Research Plan/First Innovation Plan
 - Institutionalisation of separate but complementary research and innovation plans
- 2005-2008: Research and Innovation Plan
 - Towards an integrated approach
 - Consolidated research strengths but didn’t sufficiently resolve structural weaknesses
- 2008: Catalan Agreement on Research and Innovation
 - Building consensus on problem diagnosis and long-term commitments

Better balance between knowledge generation and exploitation

- History of policy mix in prior plans with focus on research and knowledge generation
- Supply-driven vs. demand-driven instruments
- Technology transfer and knowledge exploitation parts of the sub-system are the weaker links in Catalonia
- Need to integrate cluster support and innovation needs to reach wider number of existing firms

PRI 2010-13

- Actions to improve quality of technology transfer intermediaries
- New entity proposed to support marketing of research

Recurring lack of clear prioritisation

- A problem in prior Research and Innovation Plans
- Catalan Agreement on Research and Innovation had 131 commitments
 - Very valuable long-term approach to consensus building...
 - ...but sequencing, order of priority and interactions of commitments not addressed

PRI 2010-13

- Plan gives detailed budgets by policy area
- 17 areas of thematic focus (too many?)
- Some new mechanisms to facilitate prioritisation

Meeting Catalan research priorities

- Strategy of maximising mobilisation of outside resources (EU, Spain)—so priorities defined outside of region
- Few “flexible” resources in regional budget to apply to regional needs
- De facto lock-in of priorities for research via system of Catalan Research Centres

PRI 2010-2013

- Several measures to refocus existing resources on regional priority themes as defined in Plan
- Introduces research project funds via competitive grants (blank projects or priority programmes)

Human resources: researchers and beyond

- Already clear successes in research talent attraction
- Several challenges requiring policy actions, common to other regions in Spain
 - Ratio of researchers to R&D technicians
 - PhD projects with firms or integration of PhDs in firms
- Many other skills needed
 - creativity, entrepreneurship, etc.

PRI 2010-13

- Resources for researcher mobility, technicians, post-docs
- New programmes in education for support of inter-disciplinary skills

Universities: more integrated research partners

- Universities already account for:
 - Largest share of public researchers, 22% R&D
 - Educating a net surplus of students in the region
 - Many examples of excellence and regional engagement
- ... but challenges in Spain for university integration

PRI 2010-13

- Performance contracts and funding to better support research (increasingly regional priorities)
- Incentives to individuals and institutions (need right indicators)

Addressing proliferation: easier to create than remove

Sources of proliferation include:

- Successive policies
 - Ex. Different technology related networks
- Lack of prioritisation in plans
- Multi-level governance
 - Initiatives funded by different levels without strategic approach

PRI 2010-13

- Recognition and actions to consolidate (TECNIO)
- Proposed RDI infrastructure strategy 2020
- Accountability with funding and contract programmes
- New territorial approach

More explicit territorial approach

- Strategic planning helps to reduce chances of duplication, spreading resources too thin, and promotes specialisation
- Need to adapt to sectoral and resource composition in different areas of Catalonia
- Better integration of public and private stakeholders at sub-regional level

PRI 2010-13

- 7 regions of knowledge
- Active engagement of local actors

Broader approach to innovation and the role of services

- Technological approach misses many sectors
- Key role of innovation in knowledge-based services and spillovers to other sectors
- Untapped potential in public services

PRI 2010-13

- Business development (ensure business transformation and behaviour additionality)
- Efforts in public sector itself and public services
- Example of Catalonia Design strategy

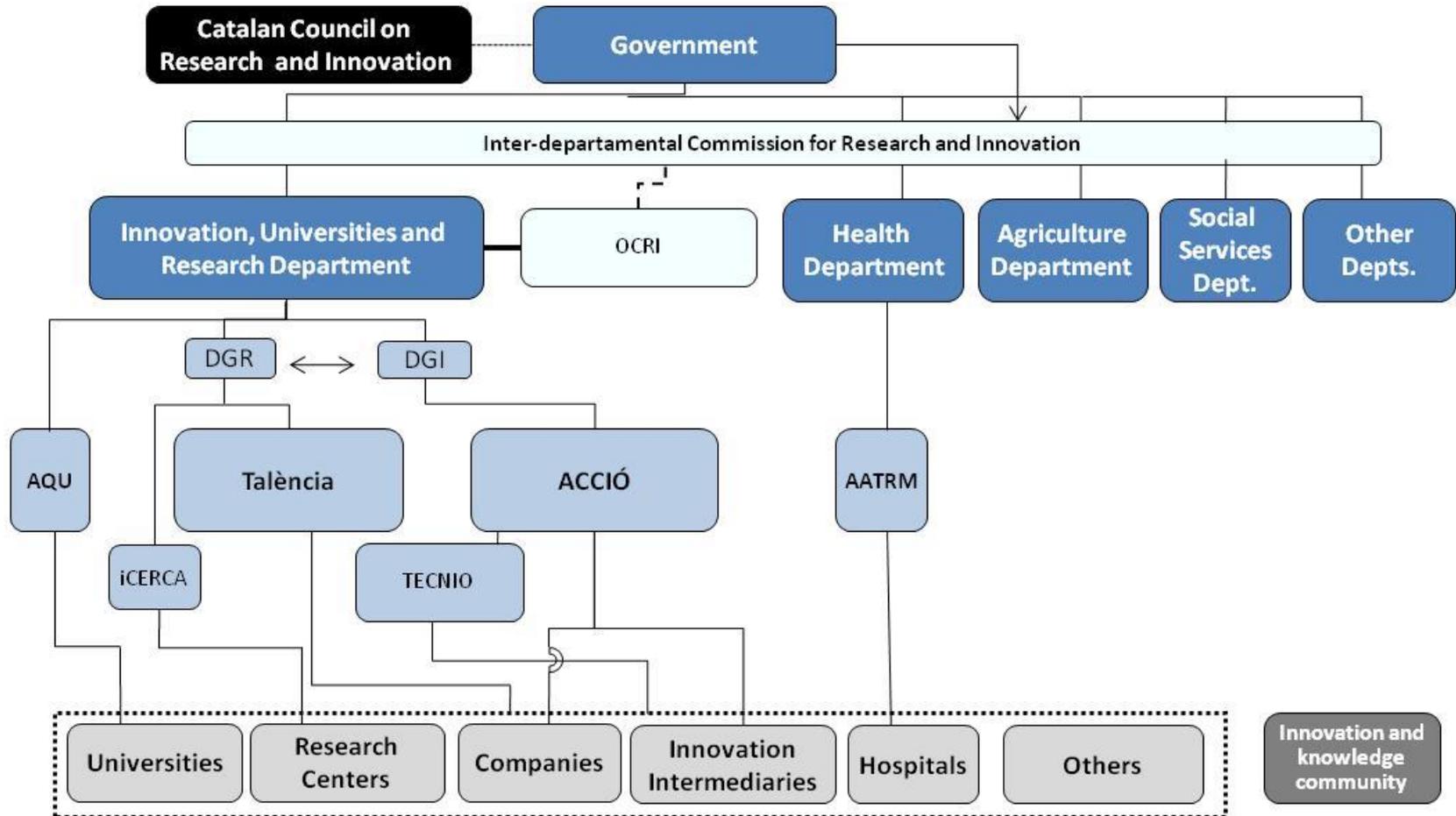
Meeting social challenges

- An imperative with tight public budgets
- Market opportunities in many “global” challenges
- Public sector can help create demand

PRI 2010-13

- Many of thematic priorities are social challenges
 - w/ mapping to areas of science, technologies and sectors
- Re-orientation of programmes towards priorities
- Public sector focus

Governance changes in Catalonia to rationalise & organise public sector



AQU: University Quality Agency

AATRM: Technology Evaluation and Medical Research Agency

iCERCA: Catalonia Research Centres Agency

Innovation Intermediaries: Technology and/or Scientific Parks

Talència: Catalan Research Agency

ACCIÓ: Innovation and Internationalization Agency

TECNIO: Catalan Technological Network

OCRI: Research and Innovation Coordination Office

Alignment in multi-level governance framework

- EU, Spain as well as local levels
- Catalonia already a leading recipient of Spanish research and innovation funds
 - Positive examples of joint efforts
- Stated goal in Spanish National Plan, commitment in Catalan Agreement on Research and Innovation

PRI 2010-13

- Explicit discussion of multi-level governance issues and mappings
- Continued recognition of need to do more

Monitoring and evaluation culture: getting it right

- Many assessments of the system...
 - but few of instruments or policy mix
- Best can be the enemy of the good
 - Prior plan had unrealistic indicator system given missing data infrastructure for collection
 - Commitment list in Catalan Agreement on Research and Innovation complex to track

PRI 2010-2013

- Development of monitoring indicators, including for new types of innovation
- External assessments – but be conscious of timing to support future plan development
- Feedback mechanisms suggested