



# Strengthening the impact of science technology, and innovation

Seminar on evaluating  
innovative approaches to public  
service delivery

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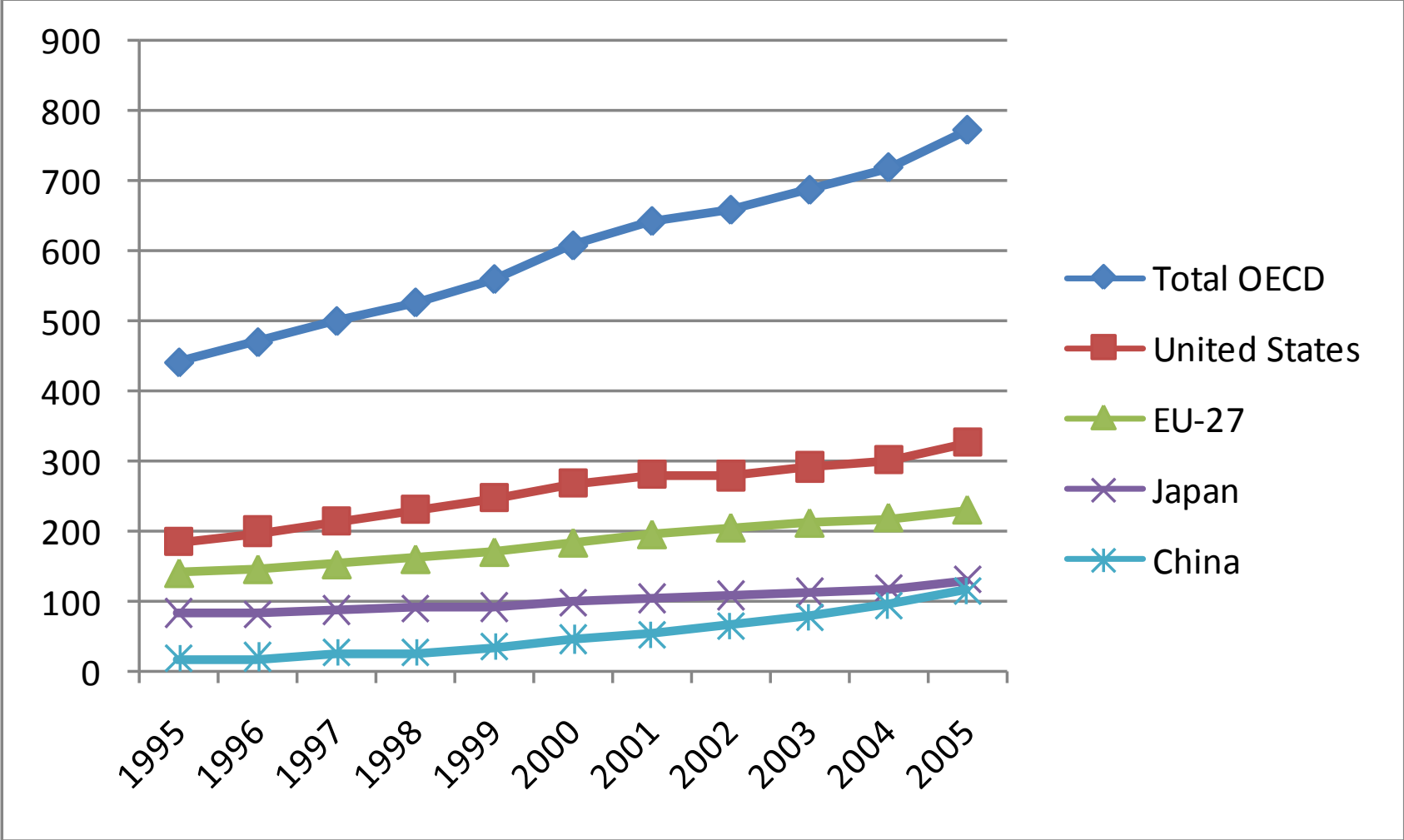
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# Why is evaluation of ST&I high on the policy agenda?

- Both public R&D and public incentives for R&D have grown in recent decades
- R&D and innovation policy linked to: competitiveness, growth, employment, addressing global challenges & improving social outcomes
- Governments seek to ensure that investment in R&D is sensibly allocated and is achieving desired returns or outcomes

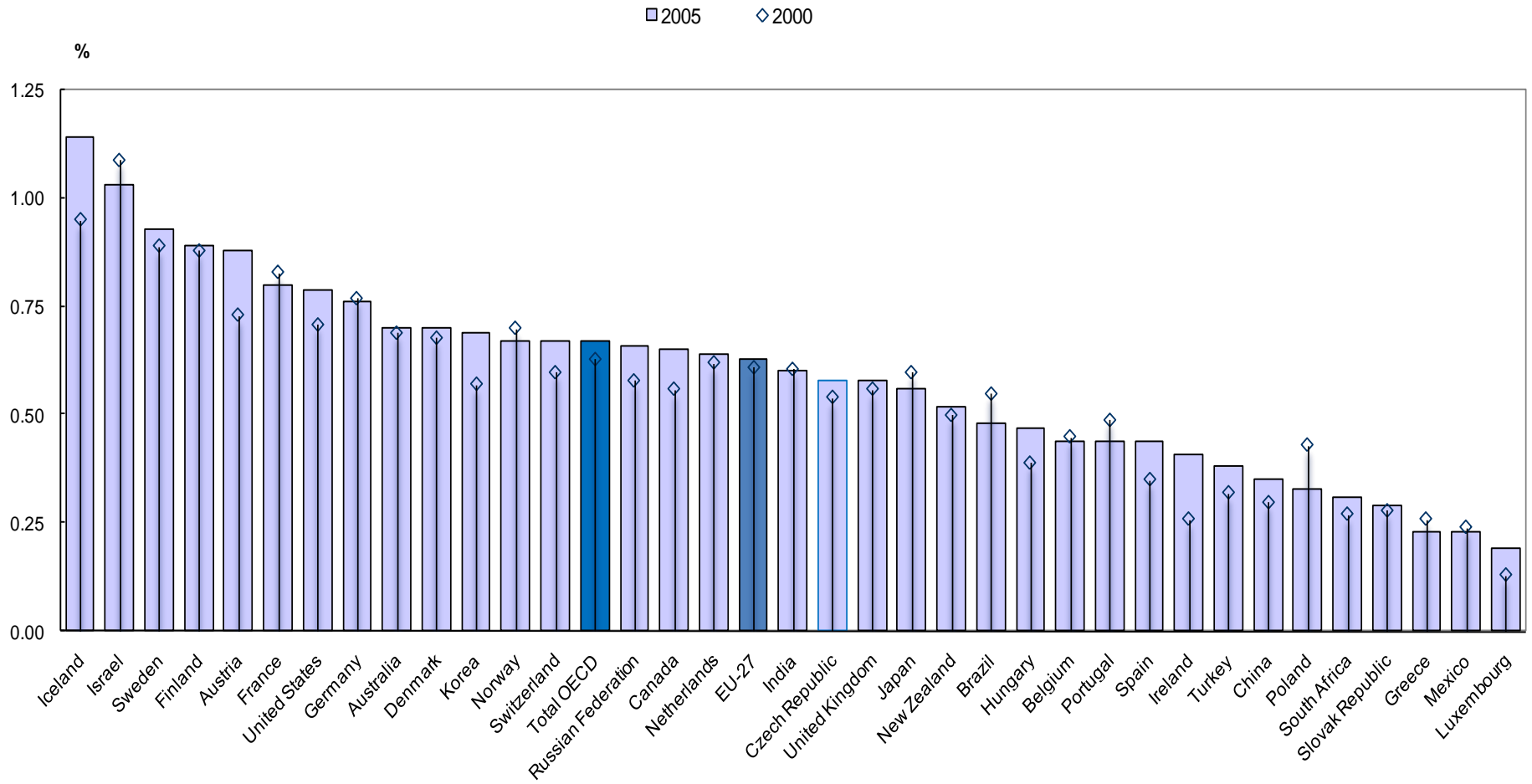
# R&D expenditure has increased rapidly

Gross Expenditure on R&D (GERD), Billions, PPP



# Governments invest heavily in R&D

## Government-financed R&D as % GDP



# Public-private partnerships are of growing importance

- Public-private partnerships are expanding because:
  - They can provide effective platforms for pre-competitive R&D in areas where innovation is science-based
  - PPPs can help build innovative networks in new multidisciplinary research fields (e.g. nanotechnology, genomics)
- But also because they can contribute to other objectives:
  - increase the impact of public R&D funding on business R&D and business behaviour (e.g. changes in the type or orientation of research)
  - help create new avenues for commercial spill-overs from public research
  - help link SMEs to scientific research
  - increase synergies between regional innovation systems

# Evaluation aims

- R&D evaluations tend to focus on 3 main issues:
  1. Appropriateness - does the action have a good rationale?
  2. Efficiency of implementation - how well have programme managers implemented the action?
  - 3. Outcomes - have expected results been achieved?**

# Additionality: A key issue for government

- Additionality: does the action lead to firms doing more than they otherwise would? Or does it simply subsidise things that would have happened anyway?
- Two forms:
  1. Expenditure additionality - do firms spend more on R&D?
  2. Behavioural additionality - do they behave in ways that generate more R&D?

## Government R&D Funding and Company Behaviour MEASURING BEHAVIOURAL ADDITIONALITY

How does government funding of corporate R&D affect the behaviour of firms? Ongoing efforts to boost business investment in R&D demand better methods of evaluating the effectiveness of government policy instruments. Evaluations should investigate not only how much additional business R&D spending is stimulated by government support or how much additional output is generated as a result, but also how government funding influences the conduct and direction of business R&D. Do recipient firms pursue different types of R&D, or collaborate more with others? Do they improve their R&D management capabilities and introduce enduring changes in their R&D strategy and performance? Such issues are not typically addressed in traditional evaluations. Efforts to explicitly measure changes in the ways firms conduct R&D as a result of government policy – so-called “behavioural additionality” effects – have remained relatively underdeveloped.

This publication explores the emerging concept of behavioural additionality and summarises results of a multinational effort to develop better ways of measuring it. The analysis derives from a series of studies undertaken in Australia, Austria, Belgium, Finland, Germany, Ireland, Japan, Korea, Norway, the United Kingdom, the United States and the European Union. These studies reveal a number of qualitative changes in the types of R&D conducted by firms and the way in which they carry out R&D as a result of their participation in government R&D funding programmes.

The full text of this book is available on line via this link:  
<http://www.sourceoecd.org/science/19264025847>

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GOVERNMENT R&D FUNDING AND COMPANY BEHAVIOUR Measuring Behavioural Additionality




# Government R&D Funding and Company Behaviour

## MEASURING BEHAVIOURAL ADDITIONALITY







# Analysing R&D and innovation performance

- Empirical analysis: econometric analysis with aggregate, industry-level and micro-level data
- Thematic analysis: Analysis of specific components, factors or policies affecting the innovation system
- Case studies: complement empirical and thematic analysis with detailed examples
- Peer review is widely used in the evaluation of ST&I- not just scientific, but also ‘policy peer review’

## R&D AND INNOVATION IN SPAIN: IMPROVING THE POLICY MIX

I+D E INNOVACIÓN EN ESPAÑA: MEJORANDO LOS  
INSTRUMENTOS



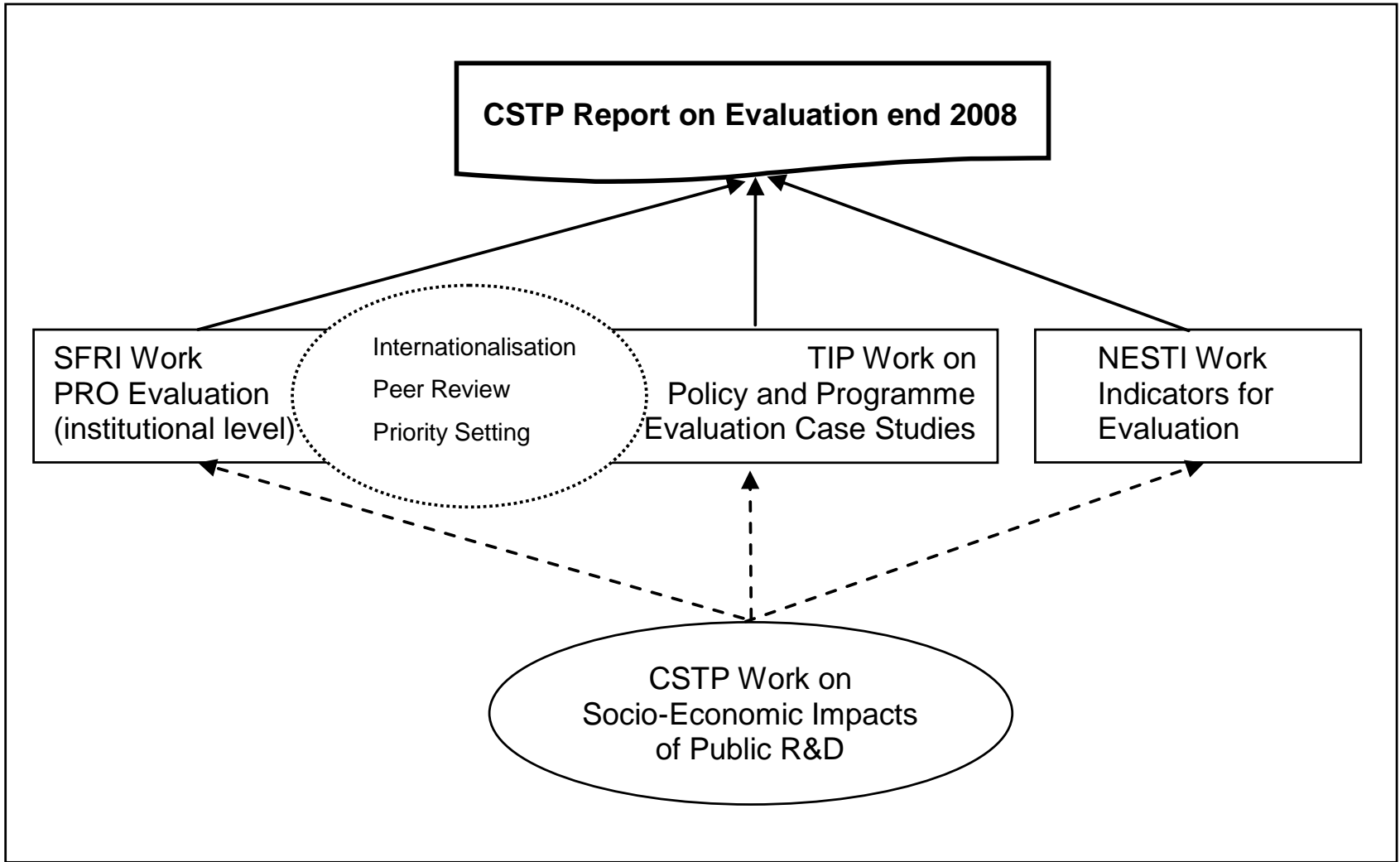
# Challenges with R&D/innovation evaluation (1)

- Time horizon - S&T and innovation activity may be very long-term in impact
- Attribution – impacts can be indirect, and difficult to predict. Innovations usually result from multiple investment programmes and research collaboration - so how much do we attribute to ‘original’ R&D?
- Measurement difficulties - benefits may be very hard to assess, especially with complex programmes

# Challenges with R&D/innovation evaluation (2)

- Inequality - benefits can be very skewed, so need to evaluate over portfolios
- Appropriability – precisely who benefits may be hard to judge
- Public/private partnerships - the costs and benefits of partnerships are inherently hard to measure, multiple stakeholders

# Evaluation projects in CSTP



# Thank you

For further information:

**[www.oecd.org/sti/stpolicy](http://www.oecd.org/sti/stpolicy)**

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