ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Innovation and clusters:

Why they are back on the OECD policy agenda.

Mario Pezzini

The policy context:
big challenges, small budgets

OECD Secretary General:

"The financial storm has passed, but OECD countries are still leaning into the wind"

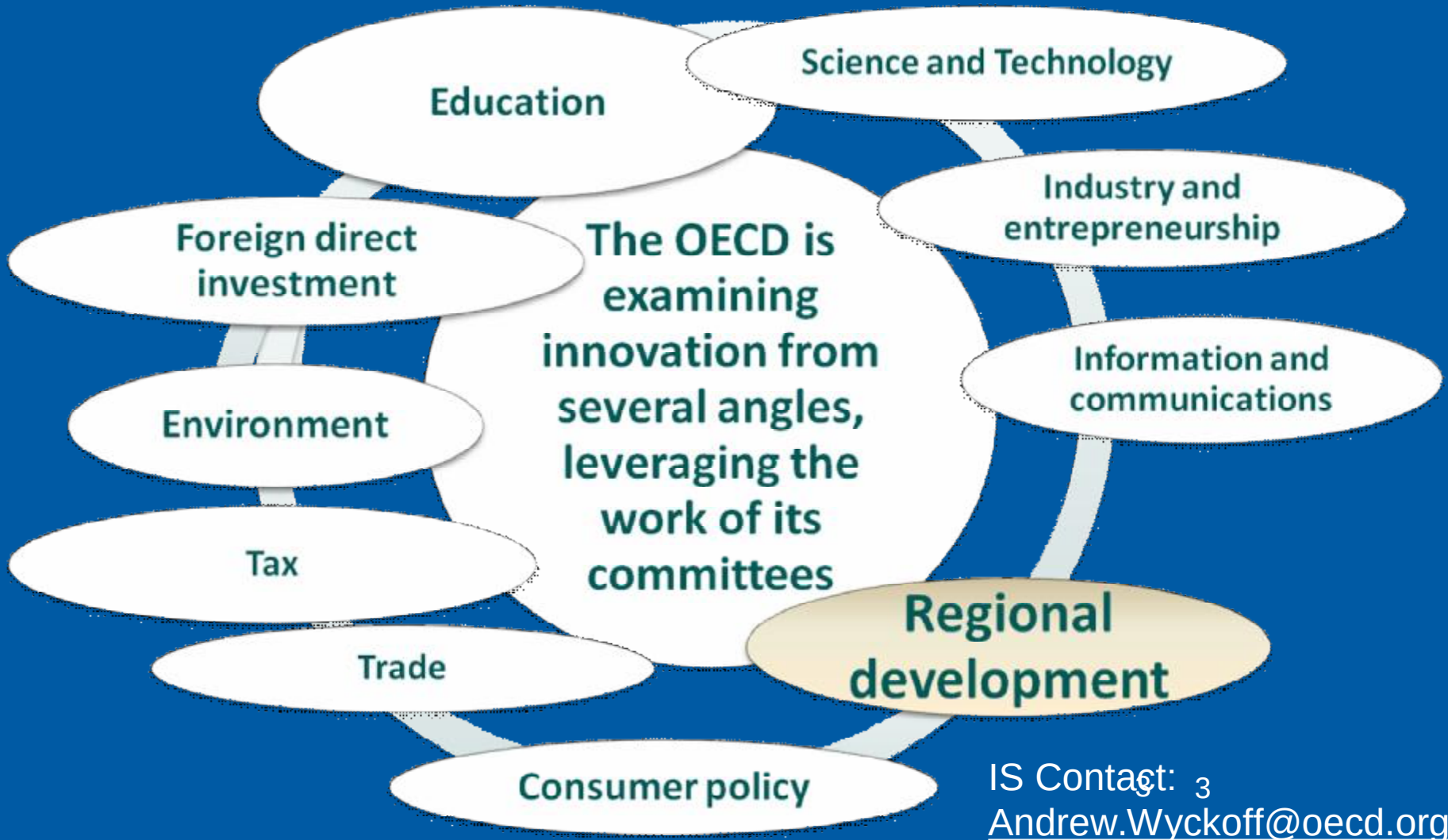
Three key issues stand out:

- **" each nations' innovation capacity will determine the strength of their recovery"**
- **"tackling climate change requires urgent cross-government action"**
- **"with average deficits at 8% of GDP, fiscal consolidation is inevitable"**

With a smaller funding pot, policies need to be strategic, growth-enhancing and targeted:

Cluster policies are a good option…

OECD's innovation strategy: A multidisciplinary approach



IS Contact:
Andrew.Wyckoff@oecd.org

Why innovation?

General argument = Innovation offers the largest potential for catching up

Decomposition of cross-country differences in GDP per capita into their determinants, 2005

(United States = 100)

	GDP PPP per capita	TFP	Human capital	Physical capital	Employment
United States	100.0	100.0	100.0	100.0	100.0
Canada	83.5	72.0	103.3	105.8	106.0
Japan	72.6	52.6	100.4	130.7	105.1
China	9.8	13.6	57.3	105.2	119.5
India	5.2	12.7	47.7	98.3	87.1
Brazil	20.5	29.3	70.1	103.1	96.8
Russian Federation	28.6	31.5	84.9	97.4	99.3
EU27 + EFTA	64.7	67.8	91.2	114.1	91.3
Total World	22.8	27.9	64.2	104.2	95.8

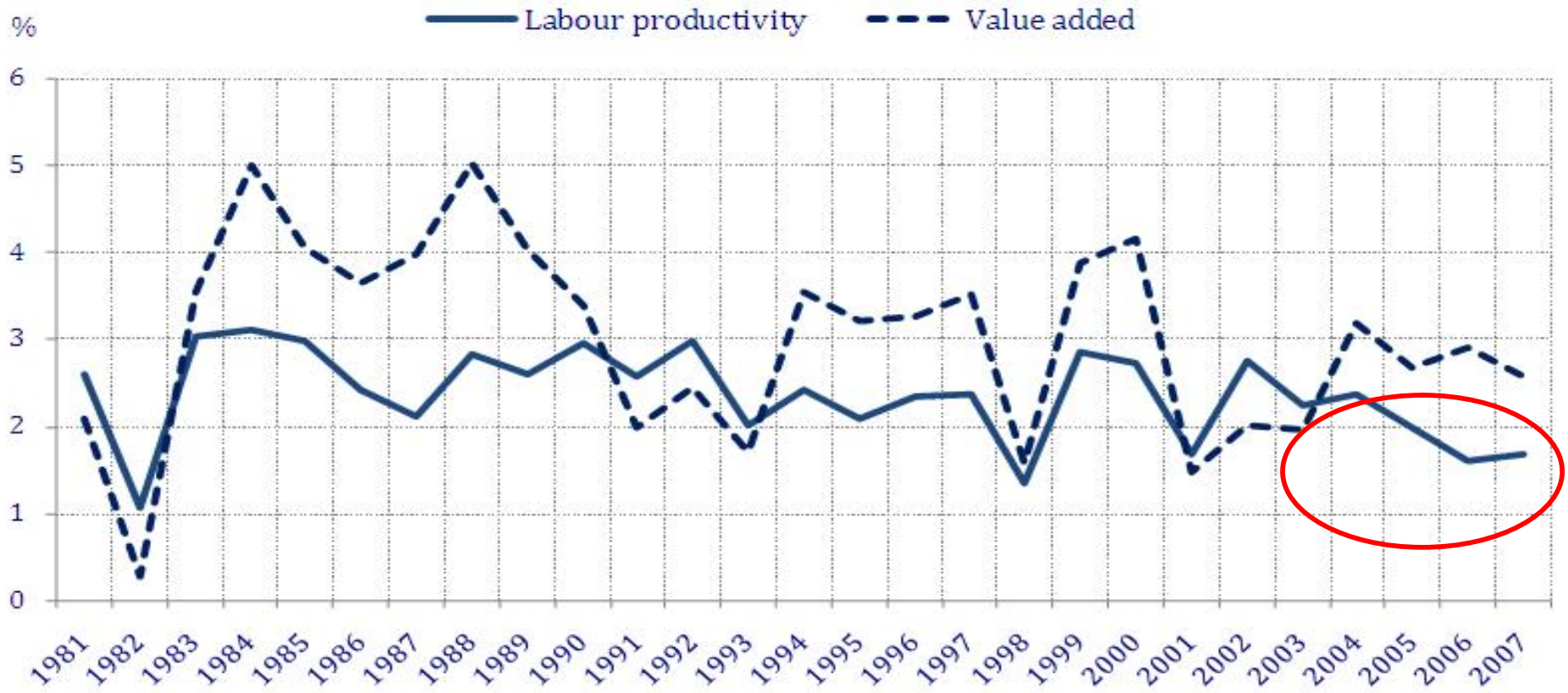
Source: OECD.

Same evidence that firms in clusters achieve productivity gains from location…New analysis probably needed…

Focus on innovation predates the crisis: Pre-crisis slowdown in productivity

Labour productivity growth in the OECD area, 1981-2007

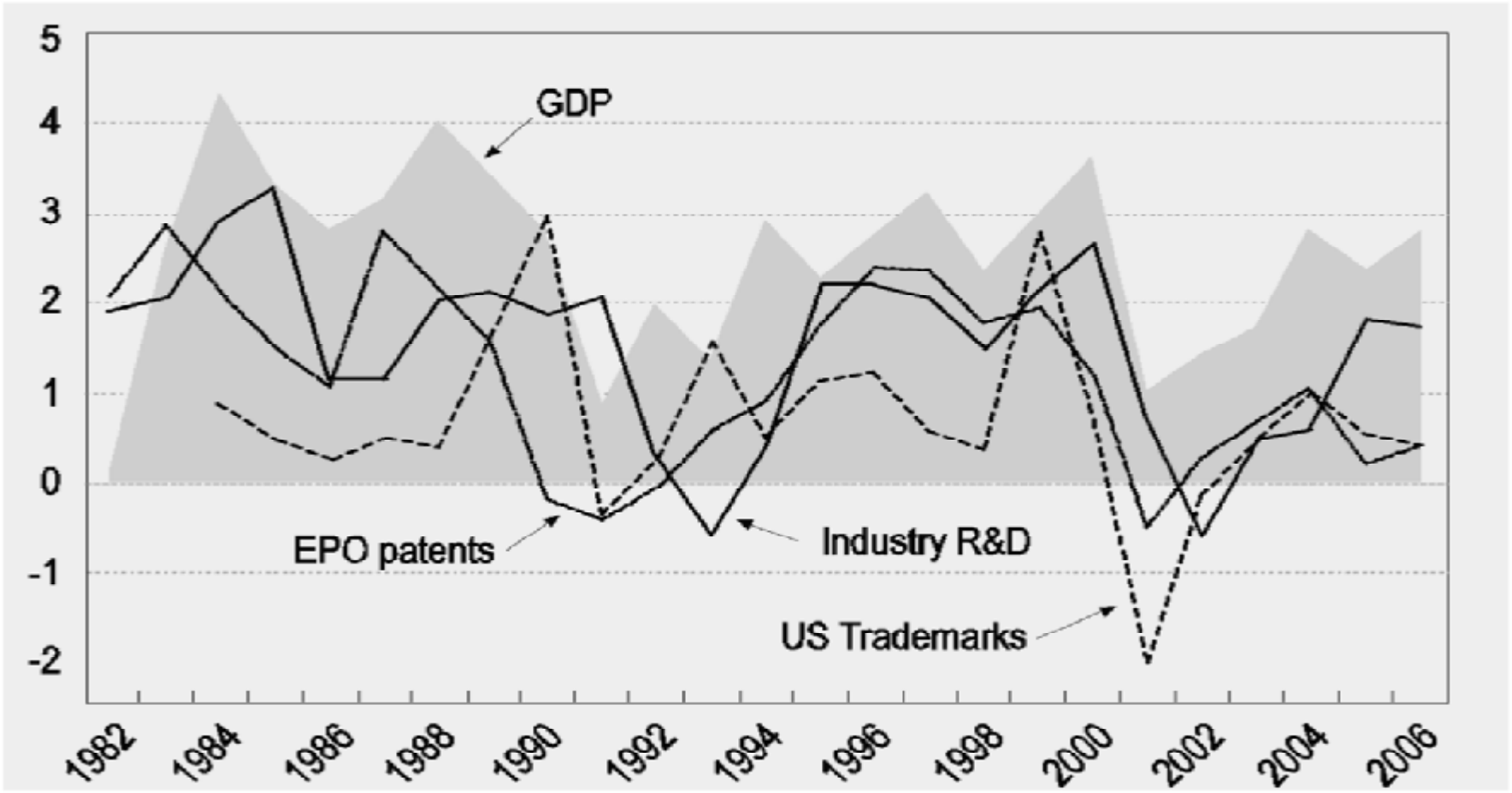
Annual growth rate, percentage



Source: OECD (2009) *Strategic Response to Economic Crisis*

But every downturn hits R&D spending:

New urgency for innovation policy at OECD level

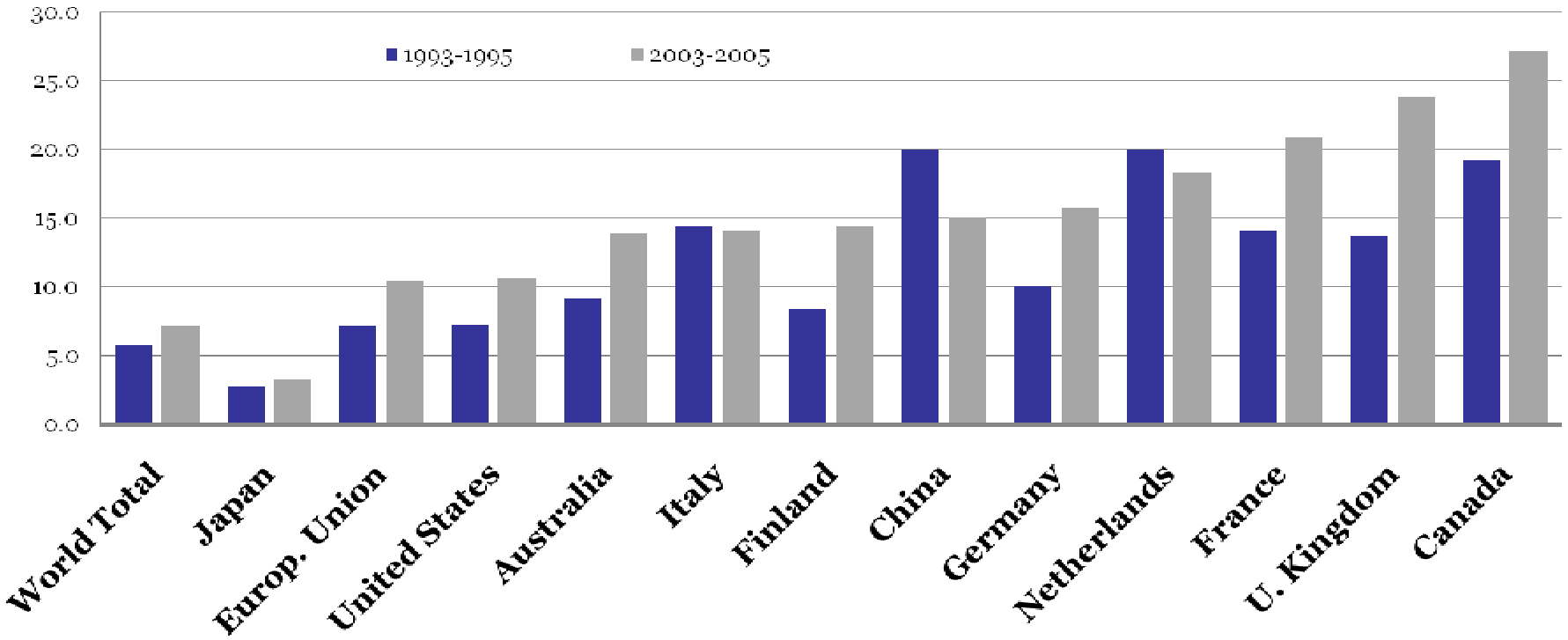


Source: OECD (2009) *Strategic Response to Economic Crisis*

The context for policy is changing…

Global as well as national networks…

Share of patents with foreign co-inventors (%)



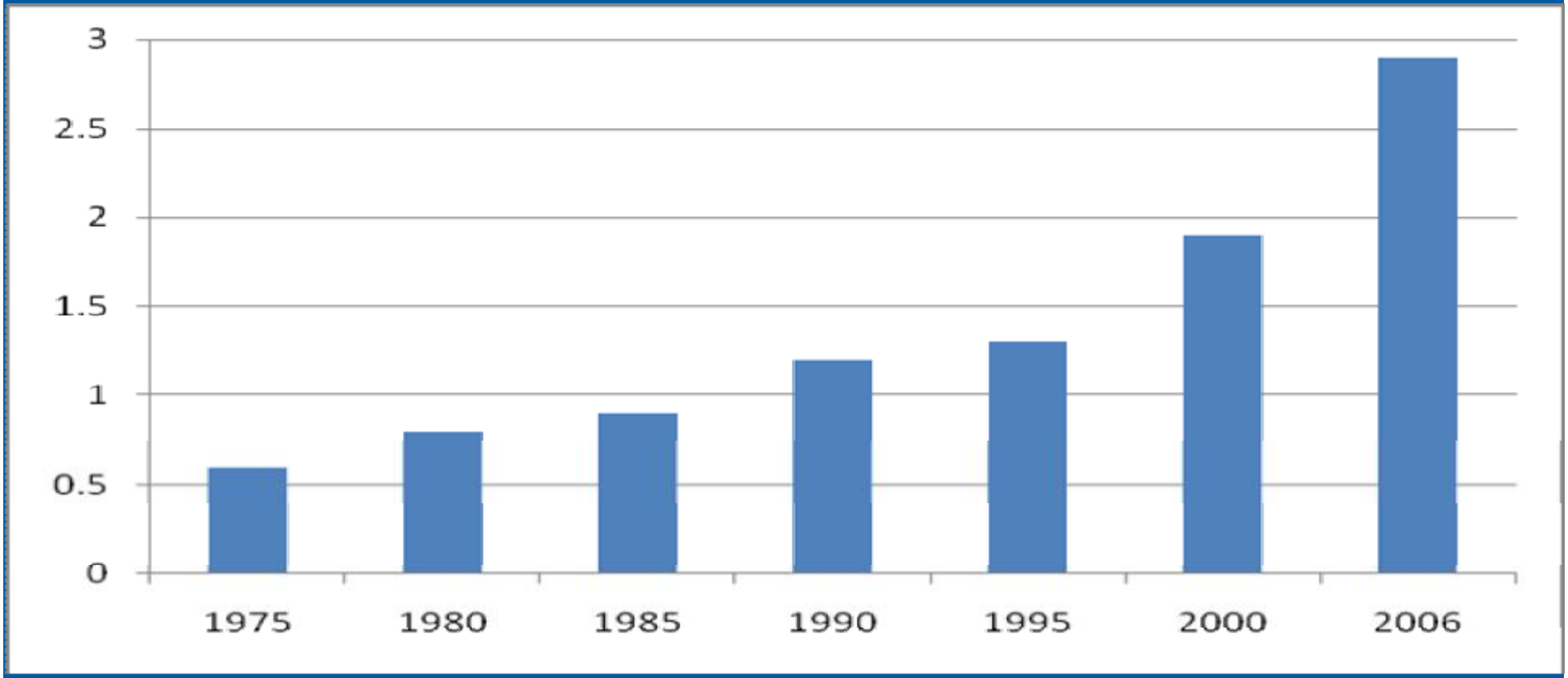
Source: OECD/STI *STI Scoreboard*

More international; but still regional?

Local co-patenting and networking analysis in preparation…

.....with global labour markets for the highly-skilled…

Growth in the number of tertiary education students enrolled outside their country of citizenship worldwide (millions)

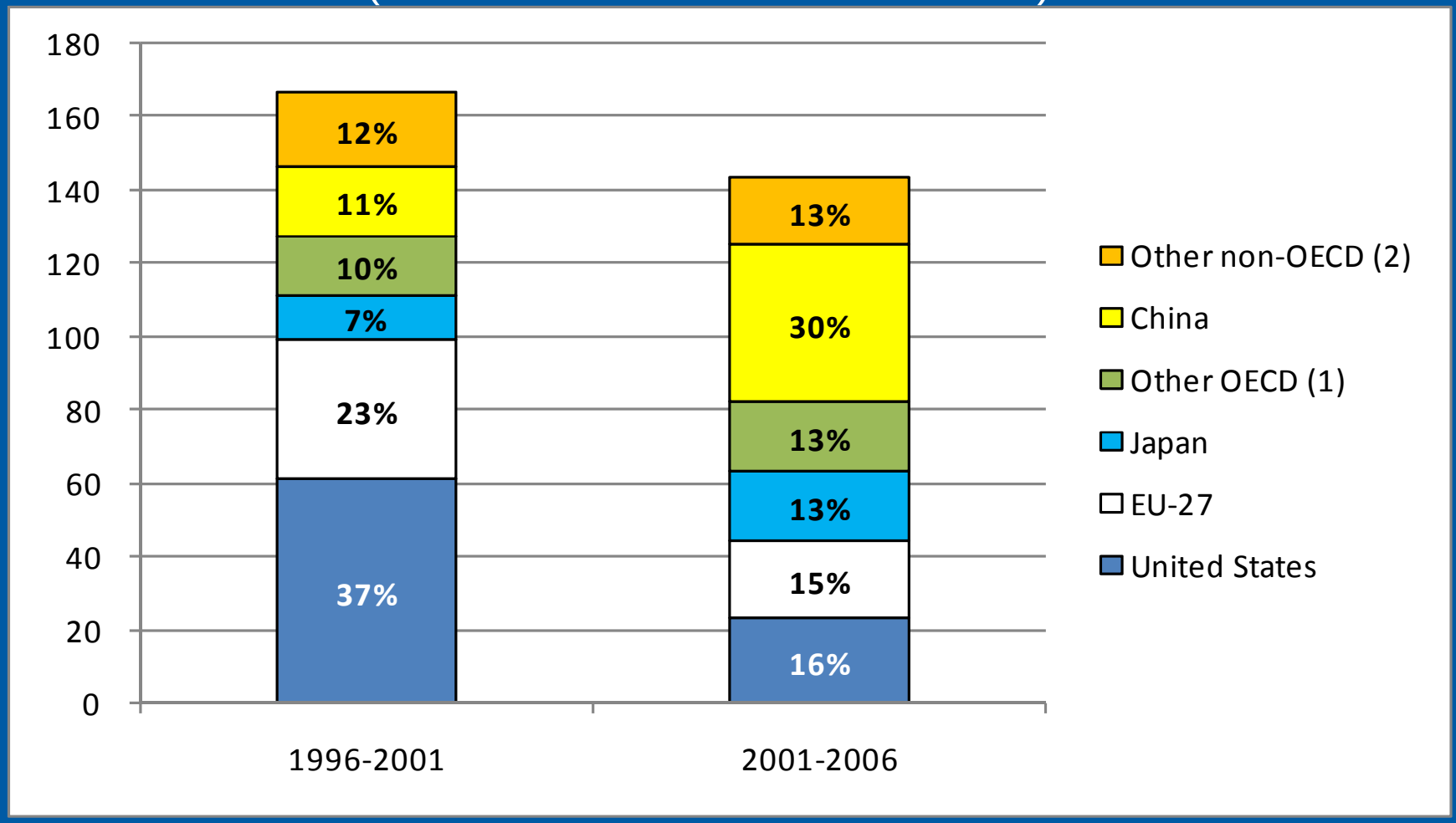


Source: OECD and UNESCO Institute of Statistics

Do they choose countries? Why do some regions attract more talent than others?

… and new global players...

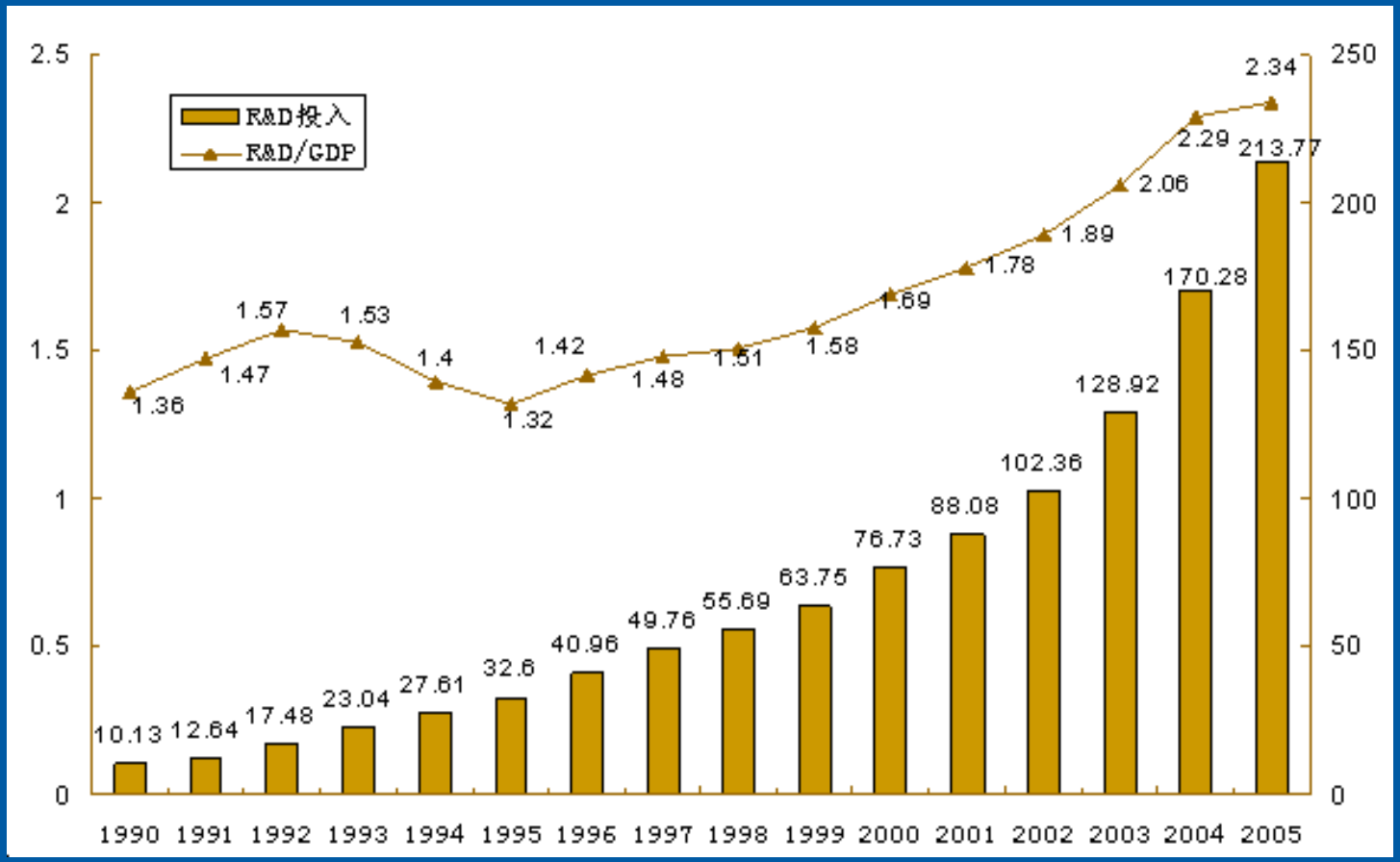
Contributions to growth in global R&D
(in billion constant US PPP and %)



Note: (1) Australia, Canada, Iceland, Korea, Mexico, New Zealand, Norway and Turkey
(2) Argentina, Brazil, India, Israel, Russian Federation, Singapore, South Africa, Chinese Taipei
Source: OECD./STI STI Scoreboard

E.g., R&D investment in OECD regions dwarfed by (some) Asian regions

Shanghai aims to increase R&D intensity to 3.5% by 2020…



So a new kind of innovation policy is also required…

- Expansion to **services**, including non-market services like public sector services;
- **Broader than just R&D** to include non-R&D innovation like design, marketing, organisational innovation;
- **Applied to social issues** – e.g. climate change – not well supported by market mechanisms
- **And, strong emphasis on collaborative action – networks, partnerships, spillovers, etc. – the spatial dimension is crucial…**

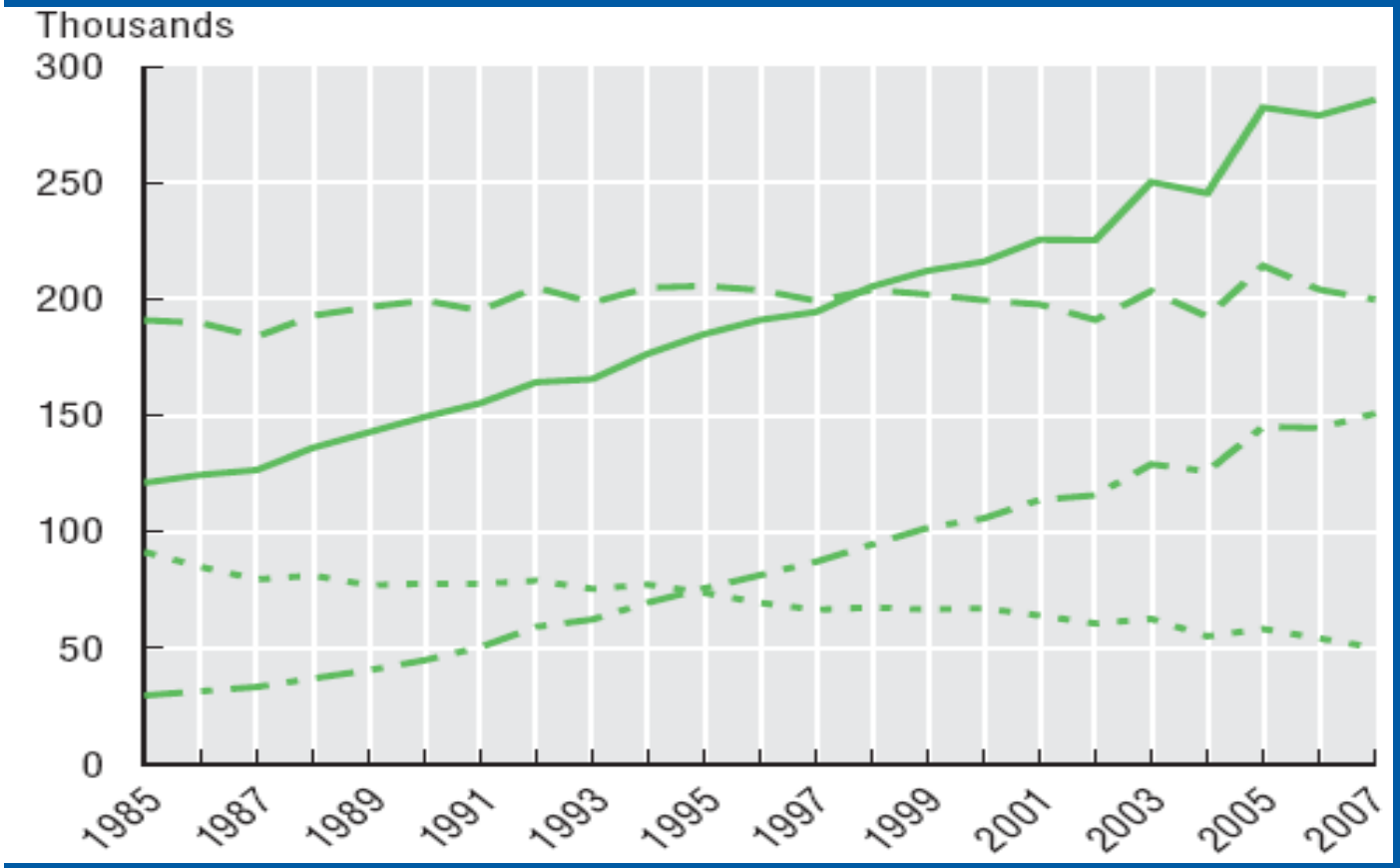
Policy converging around common objectives

Policy	Old	New
Regional	Redistribution to lagging regions; exogenous drivers	Building competitiveness through innovation strategies
Science and Technology	Narrow definition of innovation; single sector projects in basic research	Collaborative and multi-sectoral research; focus on business applications
Industry and Enterprise	Subsidies to firms; national champions	New or hard to reach innovation – eco-inno and global challenges

And now Environment/Energy – role of regions as hubs of eco-innovation

E.g., all want to support increased collaboration among researchers

Trends in co-authorship in scientific publications



Often very local

Domestic co-authors

Domestic single authors

International co-authors

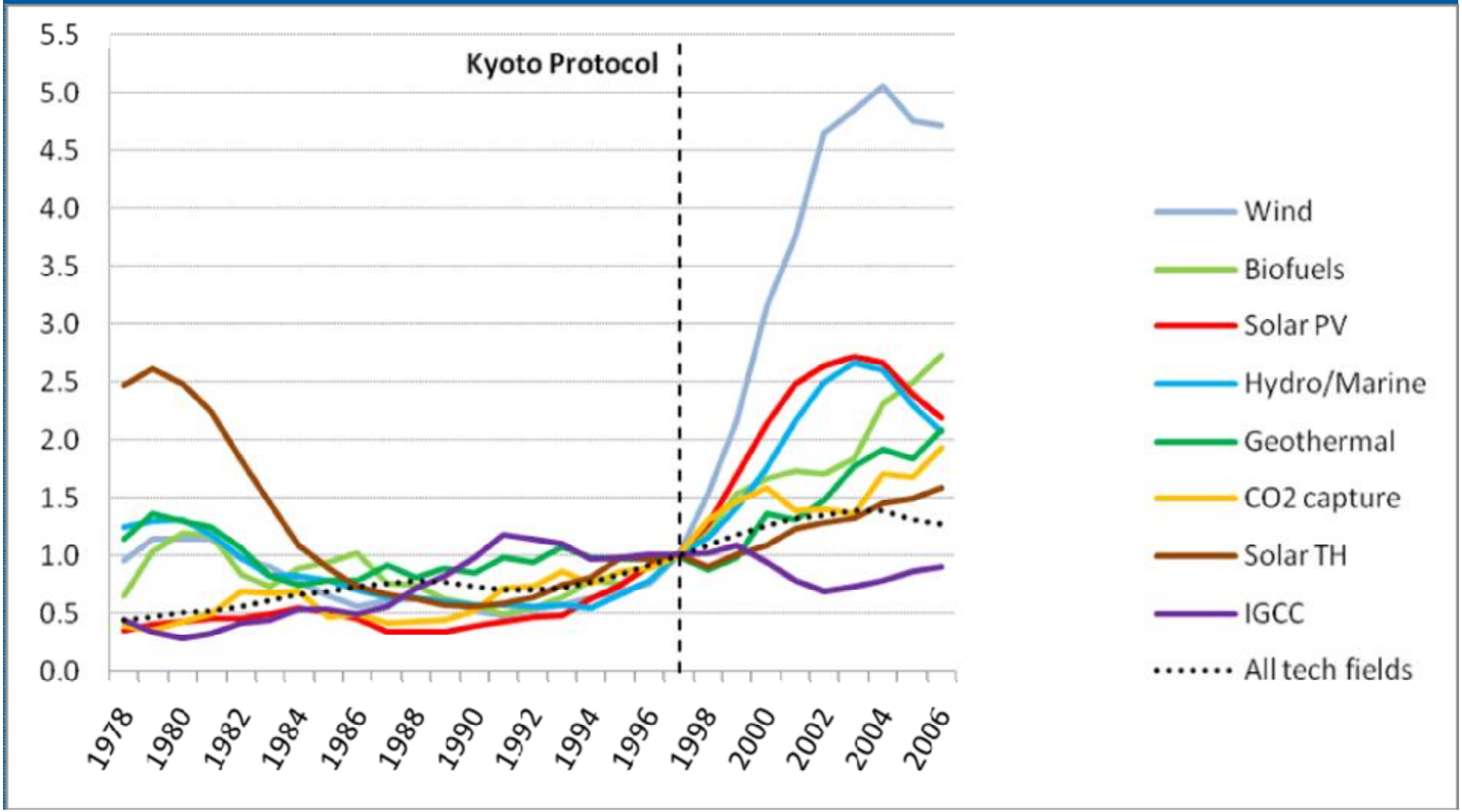
International Single author

Source: OECD/STI *STI Scoreboard*

Climate change is the new motor for innovation

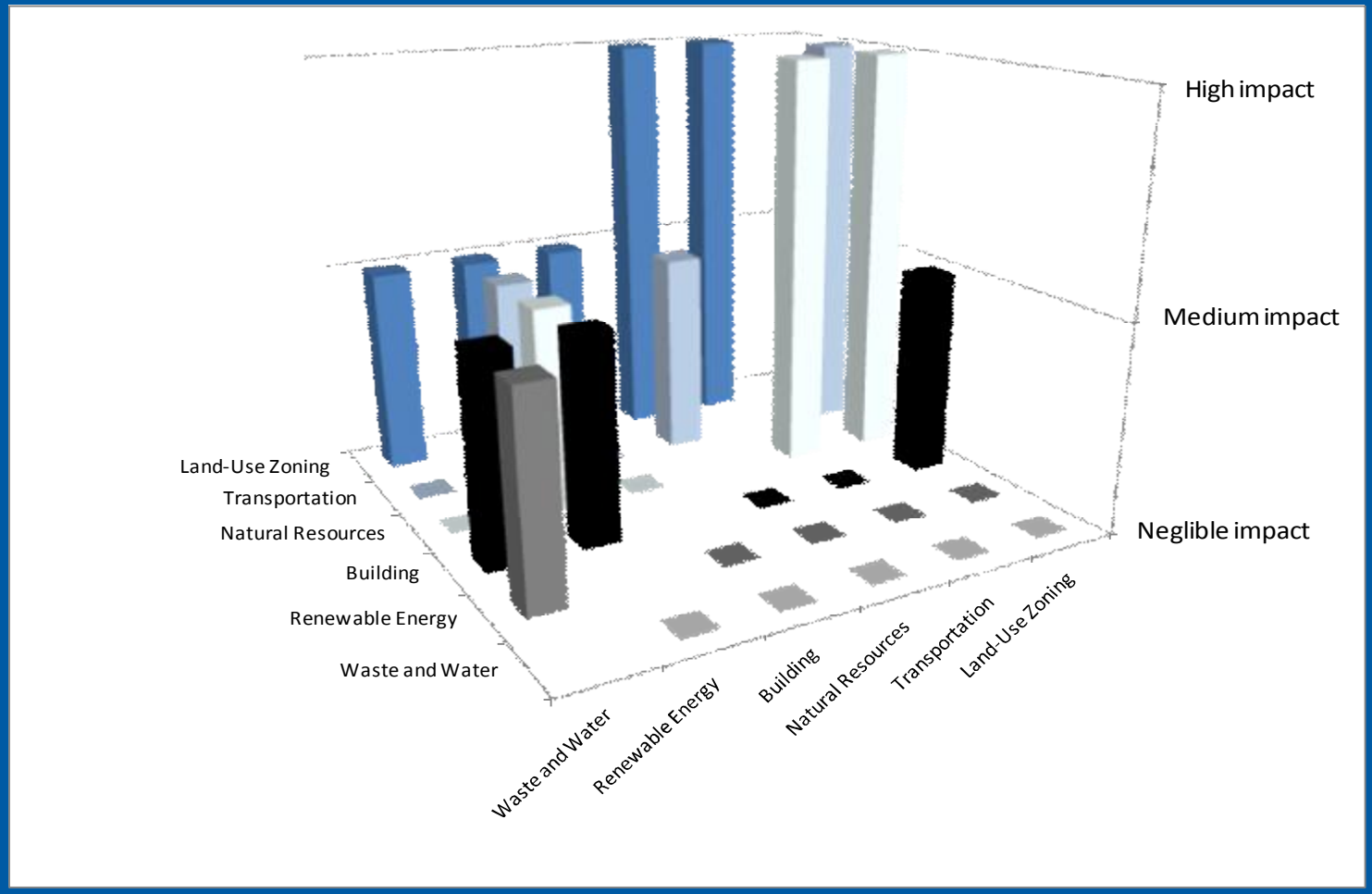
Patenting in climate mitigation technologies relative to all sectors

(indexed on 1980=1.0, Annex 1 ratification countries)



But regional co-ordination is crucial, and can support innovation policy

- Effective climate policy packages should seek policy complementarities



Local solutions can drive innovation coalitions at regional level

Source: OECD (2009), "Cities and climate change" Working Paper

The scope for regional intervention is becoming clearer…

Category	National policy	Regional policies
Area of specialisation	"anonymous" framework of regulations and institutions	collaboration among identifiable actors; importance of proximity relationships
Types of innovation support	basic research, applied research	close to the market, assisting firms to translate knowledge into marketed products and services
Strategic approach	overall policy focus for national innovation system	building regional consensus based on needs assessment; addressing specific gaps (e.g., alternative institutions)
Rationale for intervention	market failure	market "opportunities"; **need to solve eco problems**

Cluster policies can be the ideal model for this national – regional division of labour

Cluster policy targets: inherent tradeoffs

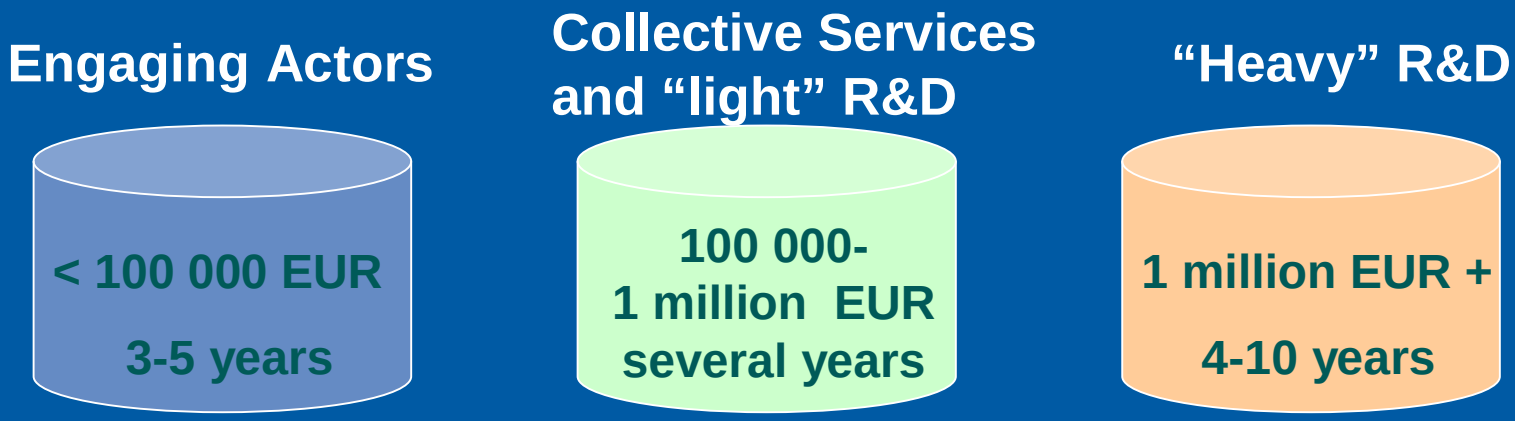
Places	Sectors	Actors
a Leading a Lagging a Hubs	a Dynamic a Exposed a Strategic importance (growth potential, technology) a Social importance (major employer, environmental)	a Universities a Spin-off firms a All small firms a Large firms a Foreign firms & investors

National objectives	or	Regional objectives
Dynamic sectors	or	Exposed sectors
Leading regions	or	Lagging regions
All sectors	or	Strategic industries
Small firms	or	Large & foreign firms

How you select is key to achieving (realistic) goals

Method	Criteria
Competitive	-When best participants not clear upfront -Gauge motivation of participants -Value of "label" effect -Longer term spillovers for groups not selected
Limited number	-Clear prioritisation of resources -Value of "label" effect
Top-down	-Clear targets (strategic, quantiatively identifiable) -Coherence with other programmes
Bottom-up	-When best or possible participants not clear upfront -Information best obtained by self-identification -Gauge motivation of participants
Combination	-Best choice in a pre-defined universe -Lower level of government best placed to select -Quantitative measures / competition not sufficient

Instruments, funding and duration vary: align ambitions with resources!



- Some of the programmes may not bring out the desired private sector response
  - Duration unrealistic relative to goals
  - Regularity of financing is unclear
  - Public sector does not have a clear exit strategy

OECD work on clusters and regional innovation systems