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“Distinguishing between performance and policy benchmarking. What we know and do not know on performances, incl. data and methodological issues in determining best practice “.

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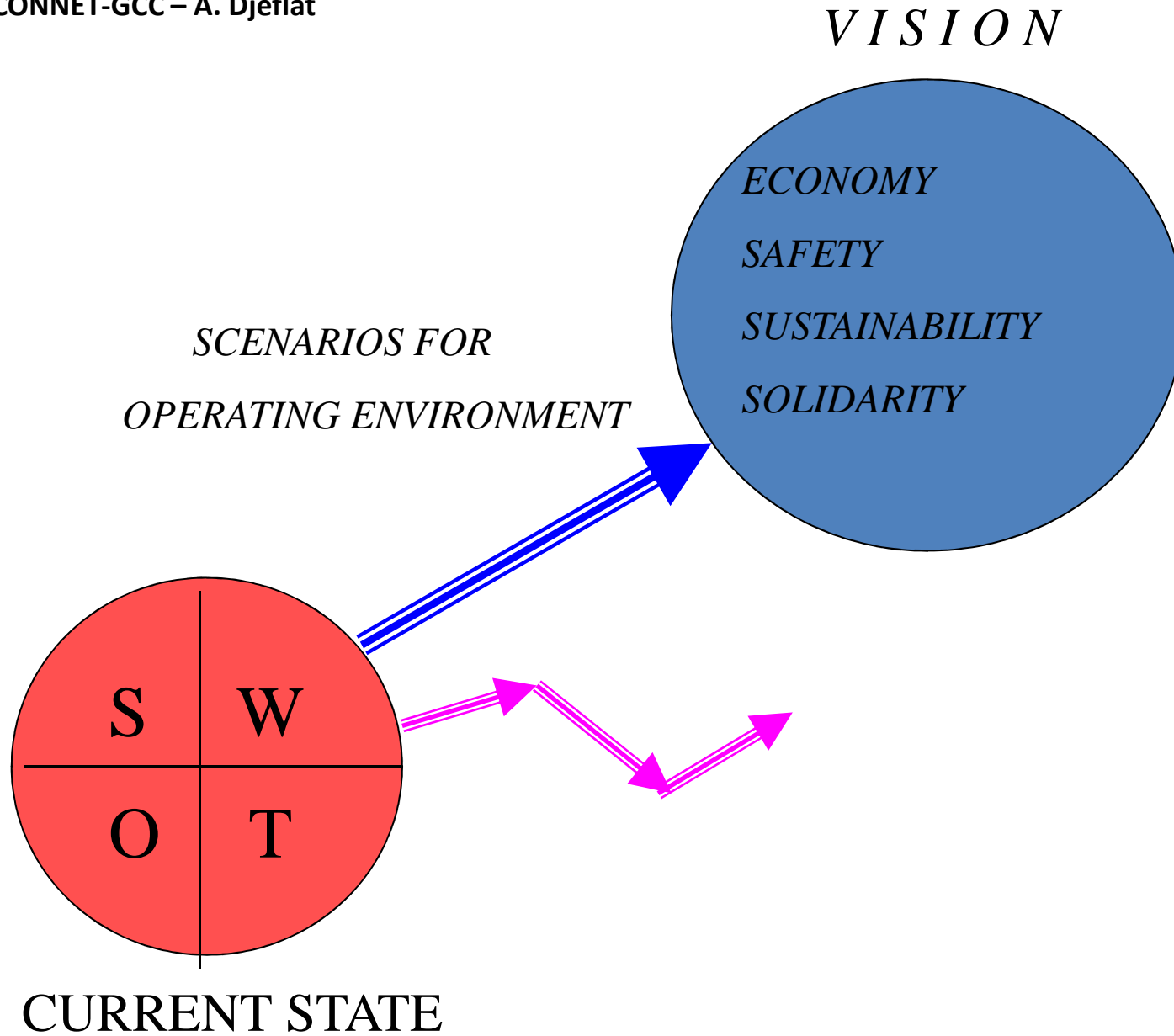
Round Table Workshop INCONNET-GCC:
Best Practice in S&T Policies) Muscat
December the 6th and 7th 2010.

Outline

- Policy benchmarking : need for a referent
- Best practices issues
- Indicators : measuring performances and benchmarking in GCC
- Benchmarking and best practices : limitations
- Conclusion : Proposed areas for cooperation Inconet-GCC

Part 1

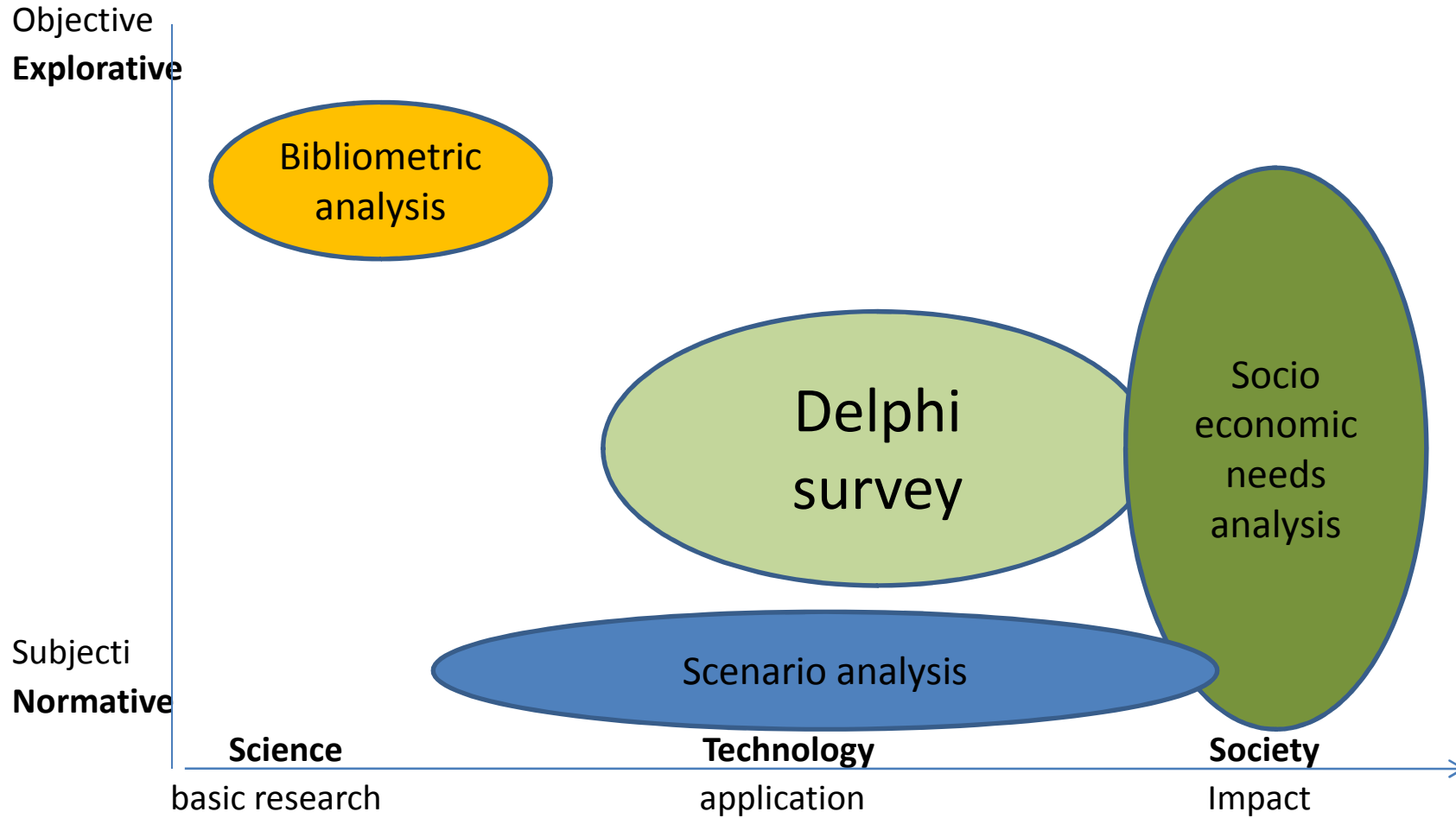
Policy benchmarking : need for a referent



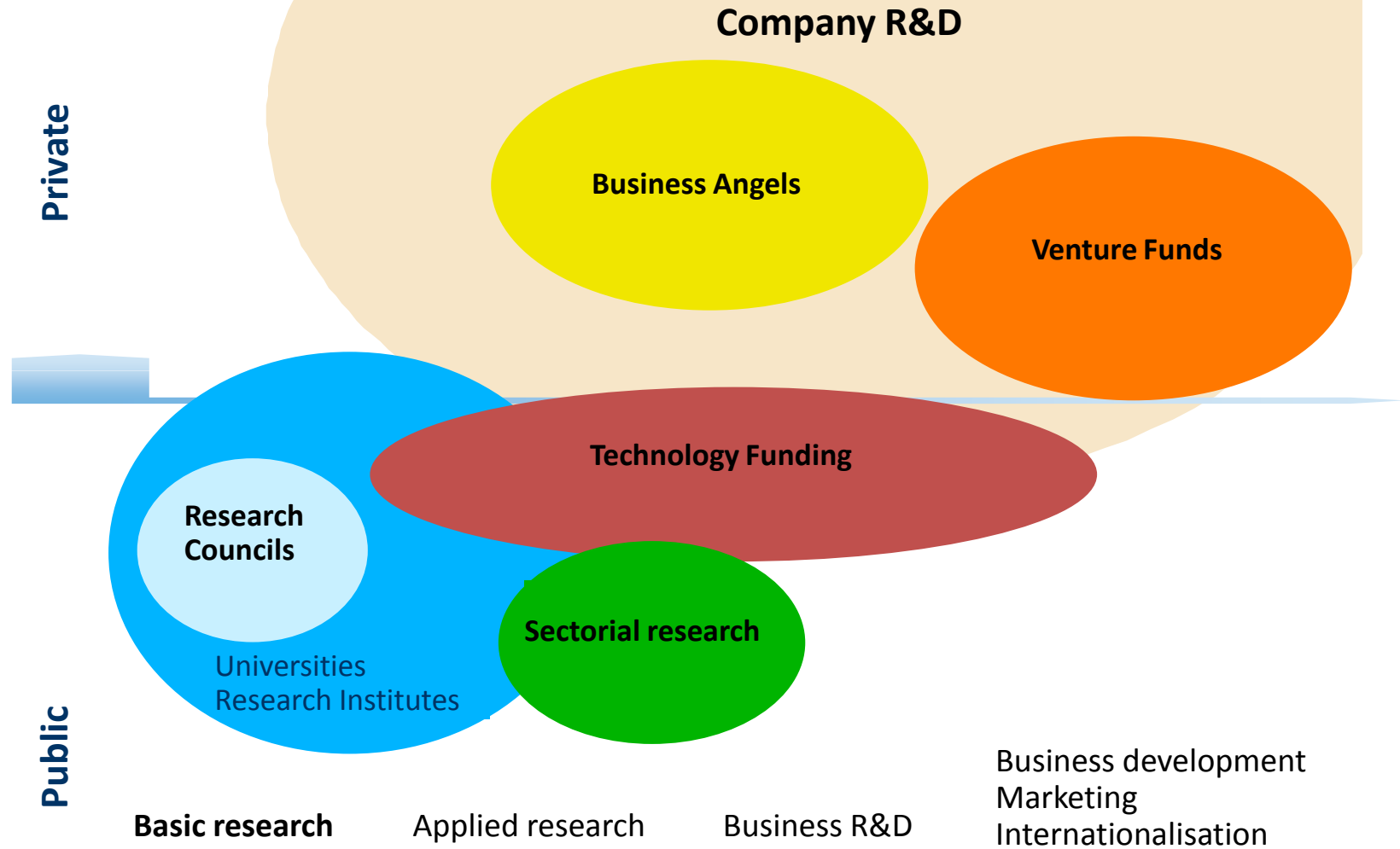
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Source (1) Ghouty

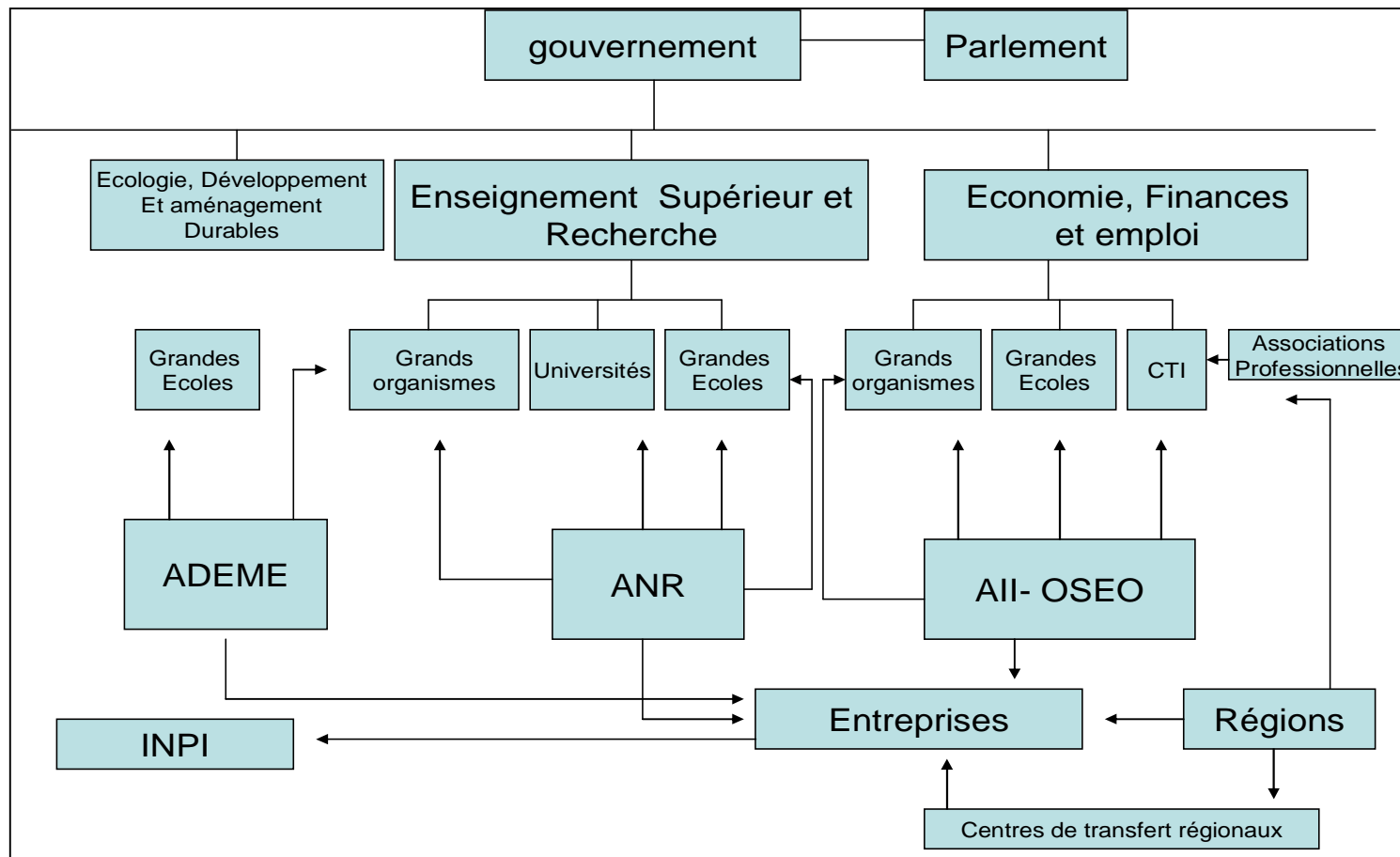
Multimethodology Innovation foresight in Japan



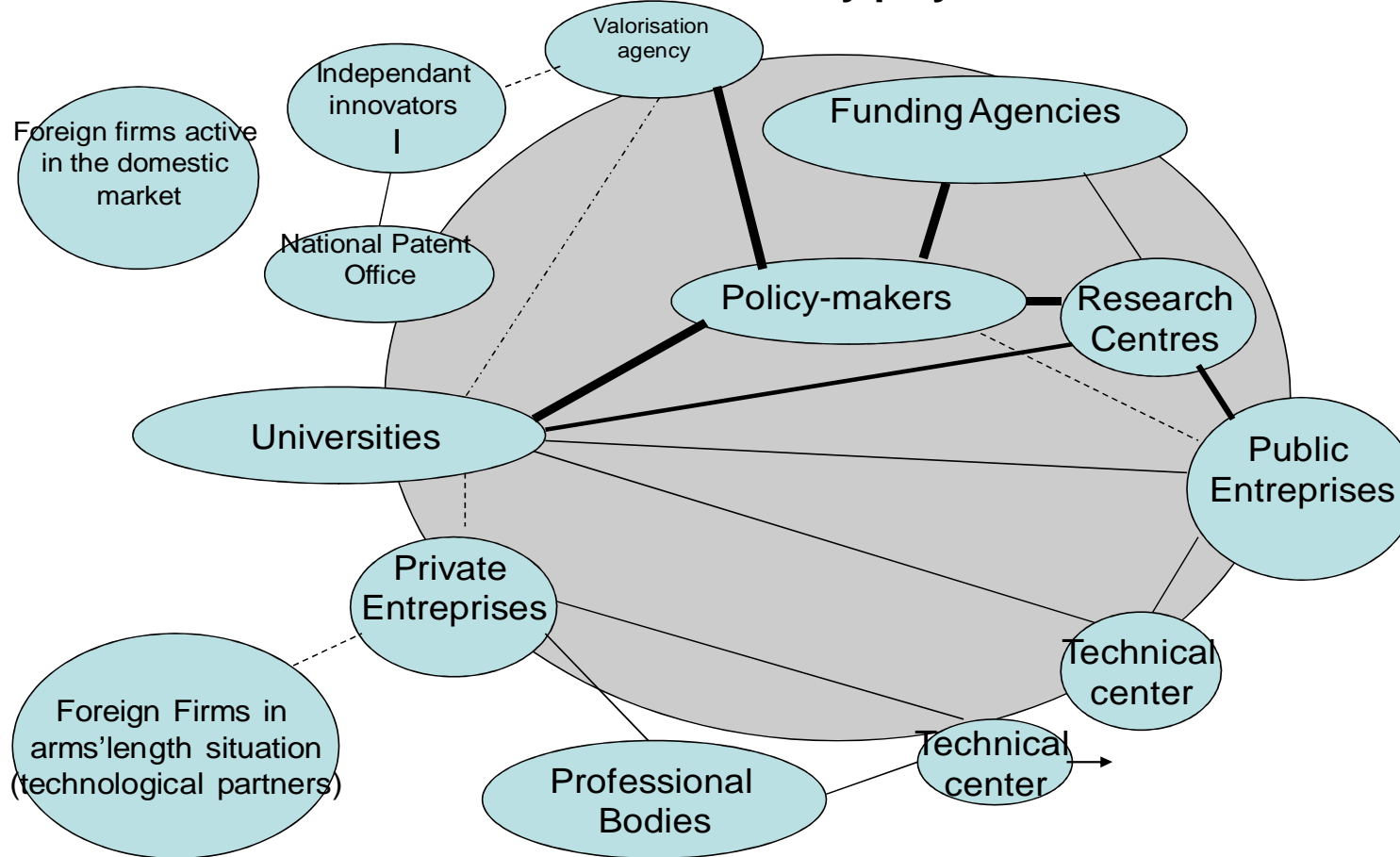
Innovation and Funding System



Mapping : the French example

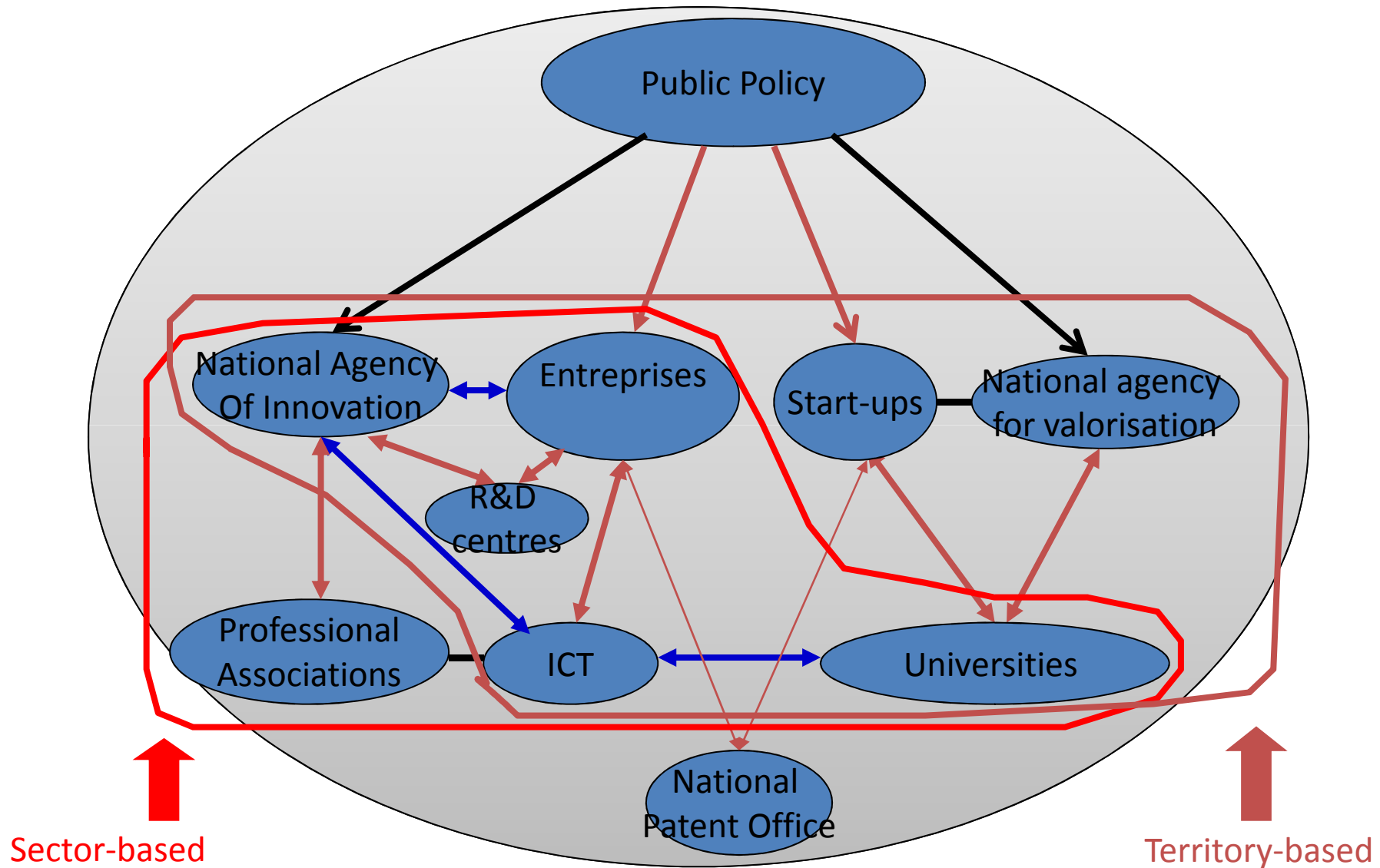


A national national innovation system that excludes most key players



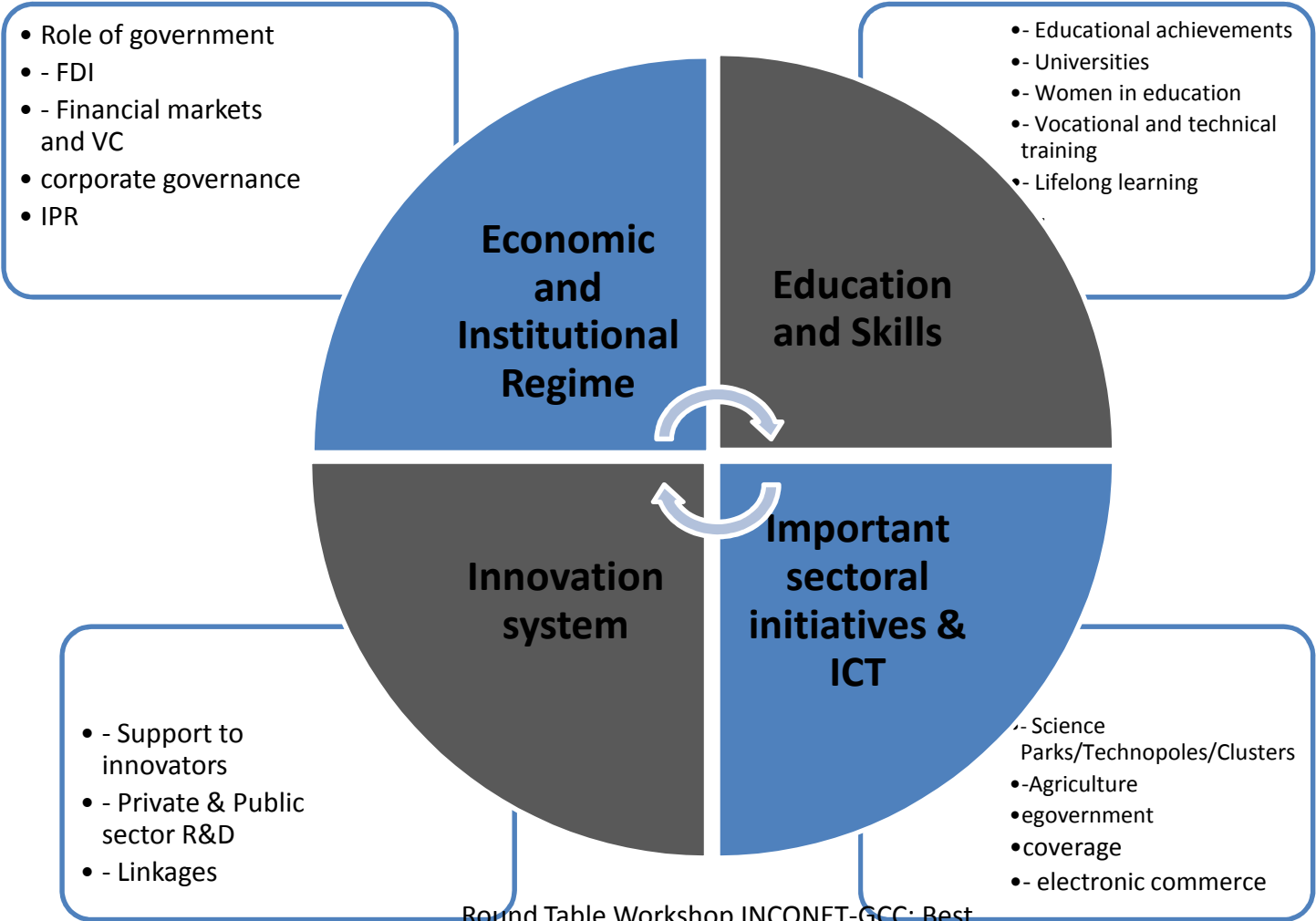
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A National Innovation System that is inclusive and integrated



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Template used in the World Bank/Isesco study (2009): more knowledge oriented



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PART II

BEST PRACTICES ISSUES

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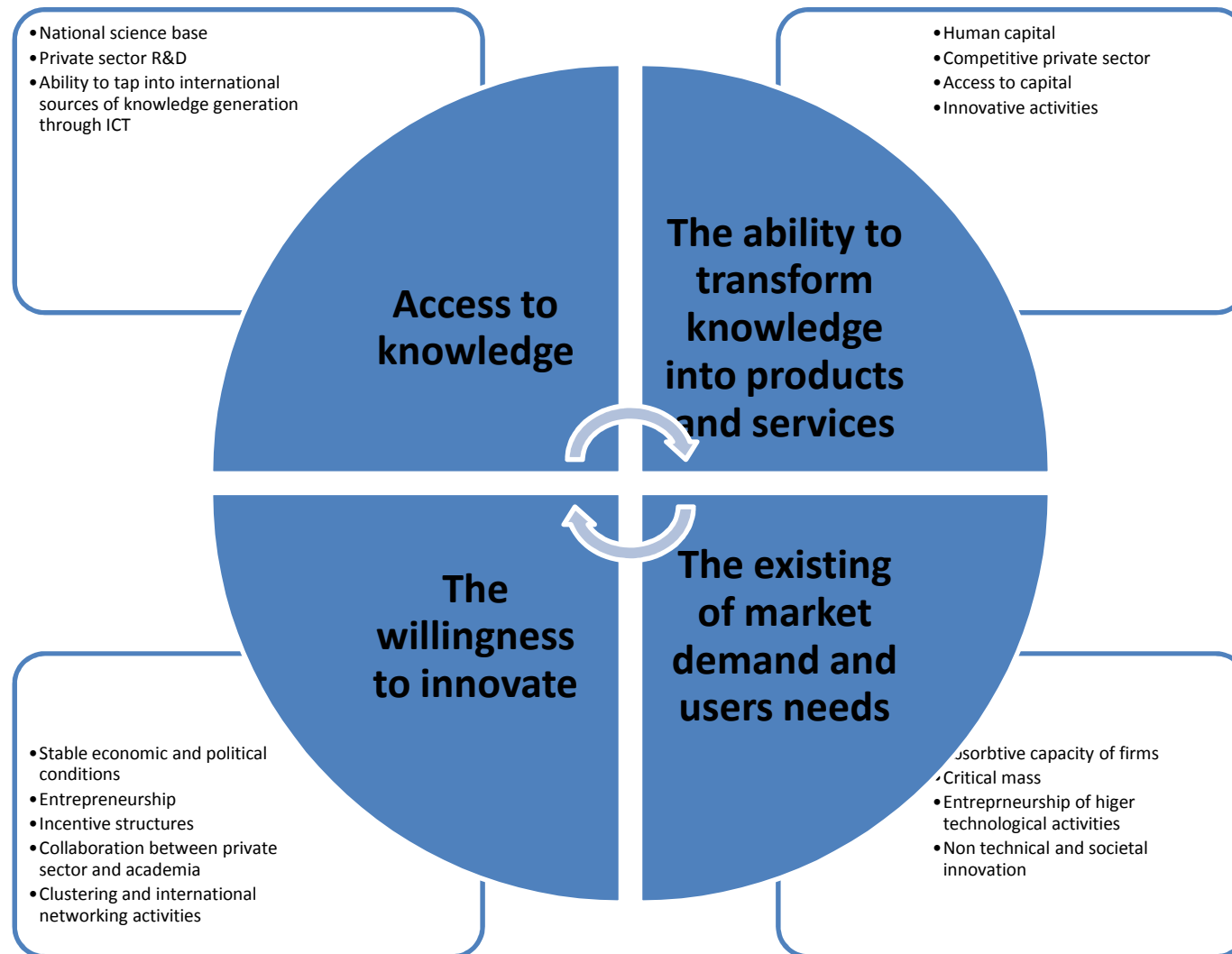
Questions raised when benchmarking

Level	Qualitative/quantitative	Region versus international	Governance Multi-level	Data
Top performers in the world	Opinion Survey when	OECD	Governance of the State	Ranking
Best performance in the group	Hard data and where	UE	Key players and who	Scores
Best performer in the region	Discrete	BRICS	Firm –level governance	Trends
Best performer in the sector	Averages	PIGS	Governance of universities	Discontinuity
Better rather than best	Matching both	LDCs	Governance of territories	Quality of data
			Others	

Identifying the “best policy practice”

criteria may be applicable for identifying best policy practice	drawing lessons from best policy experience	combinations of policies	features characterizing best practices
Programme efficiency	How <i>generic</i> is a particular problem	those that are directly targeted towards science and technology	<i>Relevance and efficienc</i>
Adaptive efficiency,	How <i>transferable</i>	those addressing other relevant areas (human capital management, labour markets, entrepreneurship etc.)	Policy <i>co-ordination</i> ,
Relevance, addressing the “right” issues	How <i>robust</i> is a lesson?		Policy <i>consistency</i> ,
Synergies, and context			Policy <i>time-consistency</i> and <i>credibility</i> ,
Evaluation practices			Policy <i>coherence</i>

Key determinants for innovative capabilities



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PART III

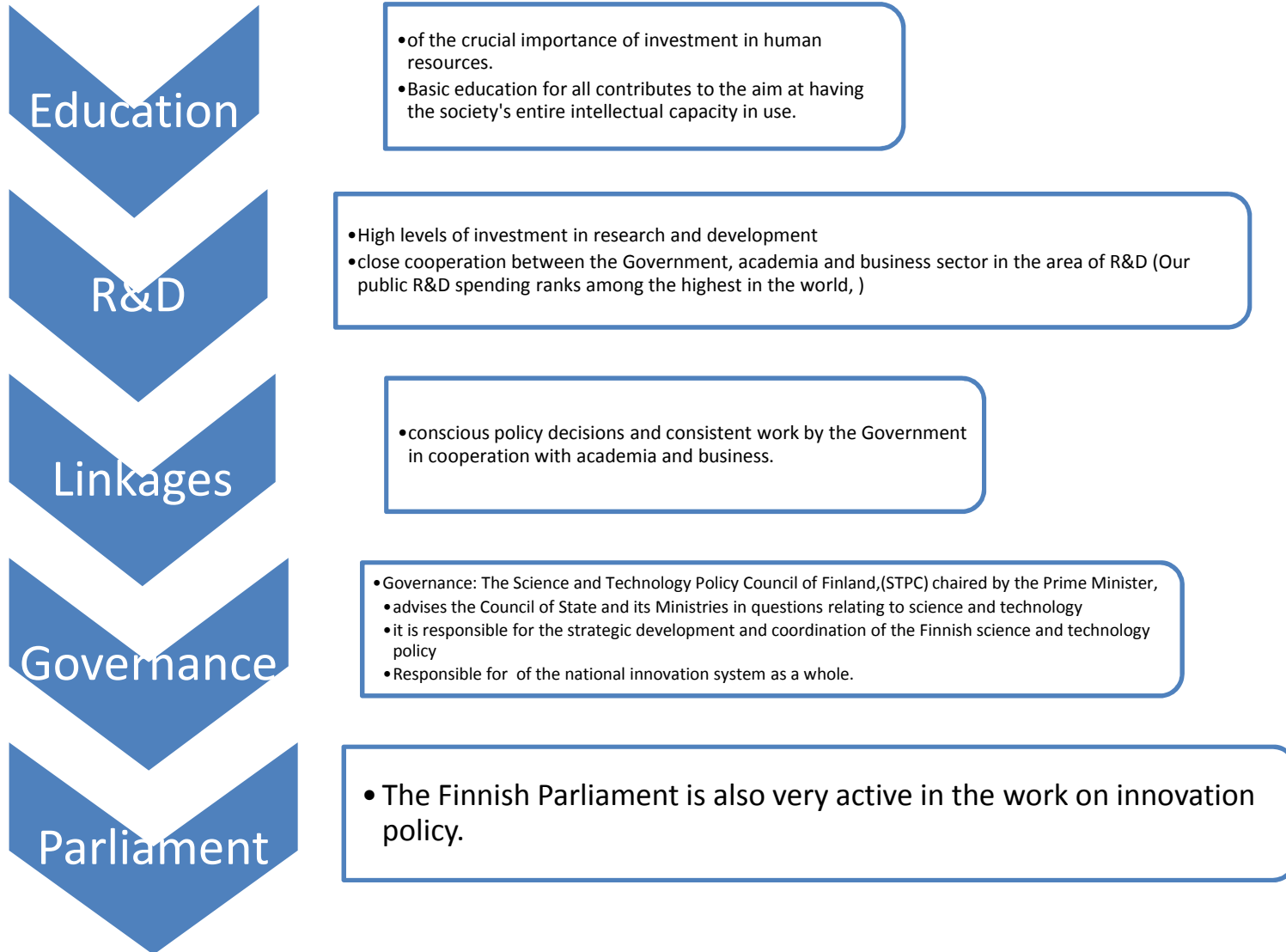
PERFORMANCES BENCHMARKING:

GCC

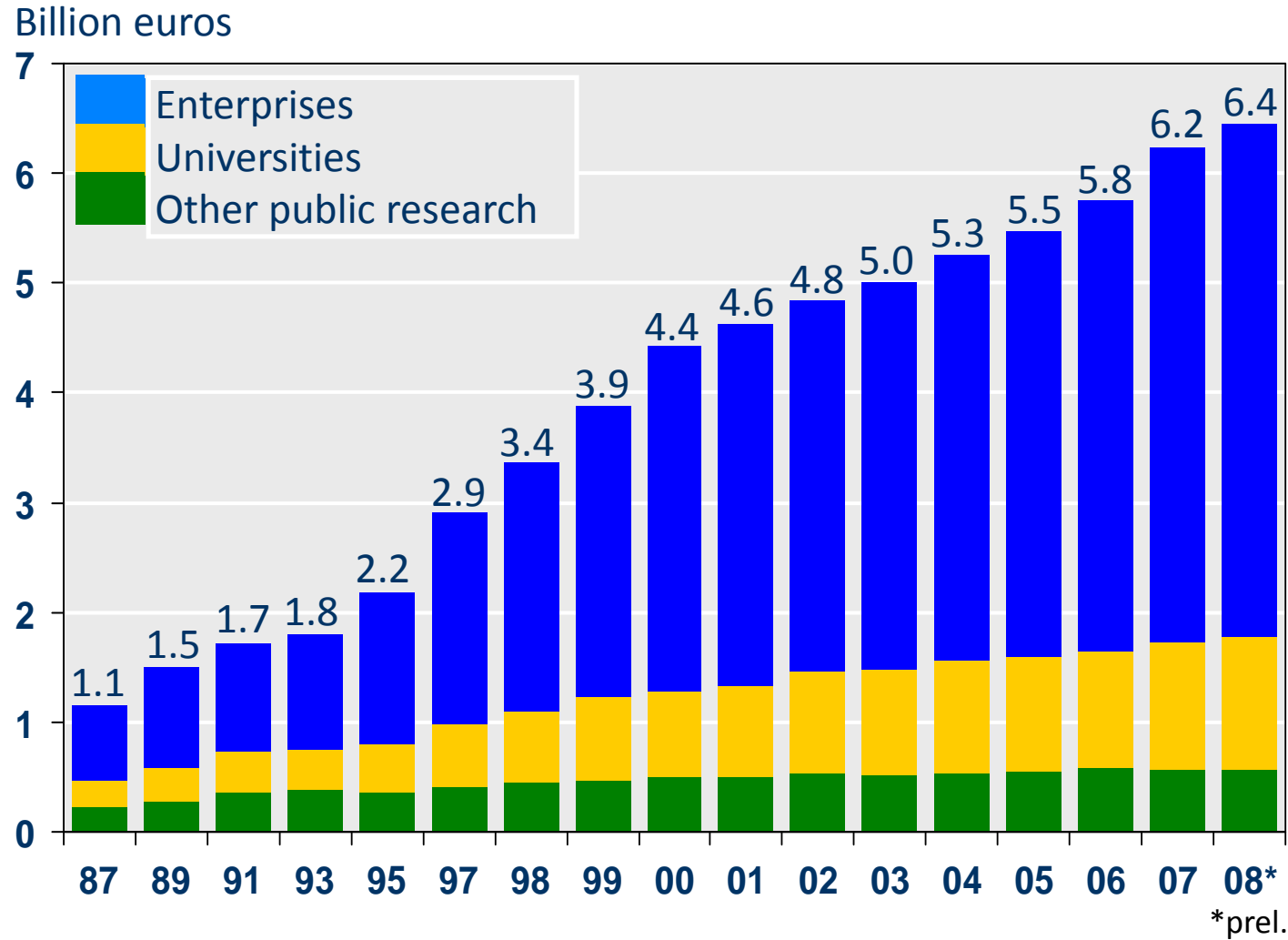
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Choosing a benchmarking base: rational for Finland

The ingredients for success in Finland



Right mix of R&D expenditure in Finland

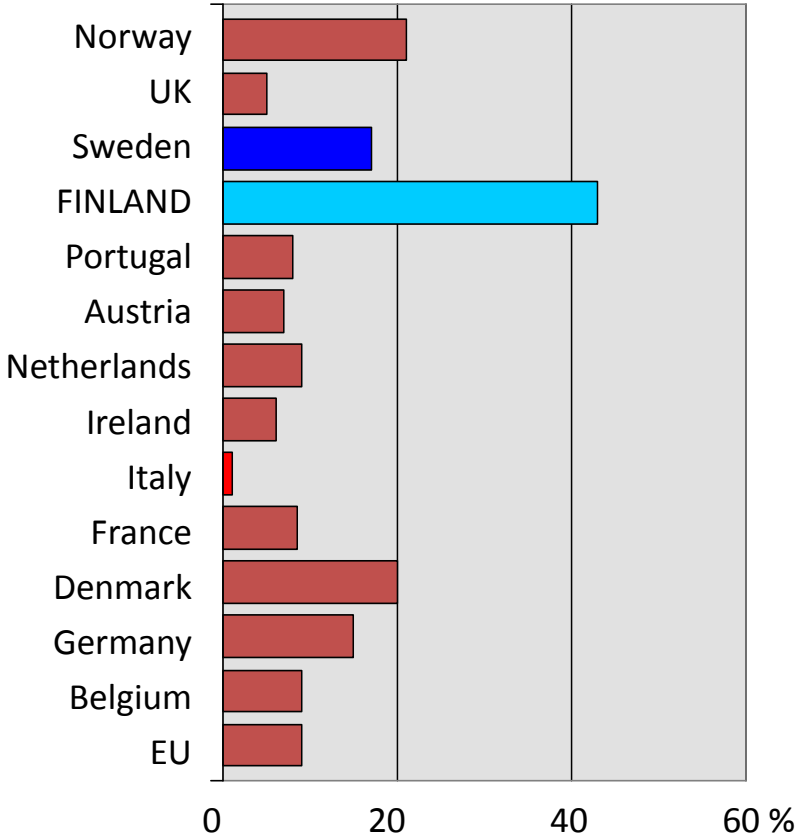
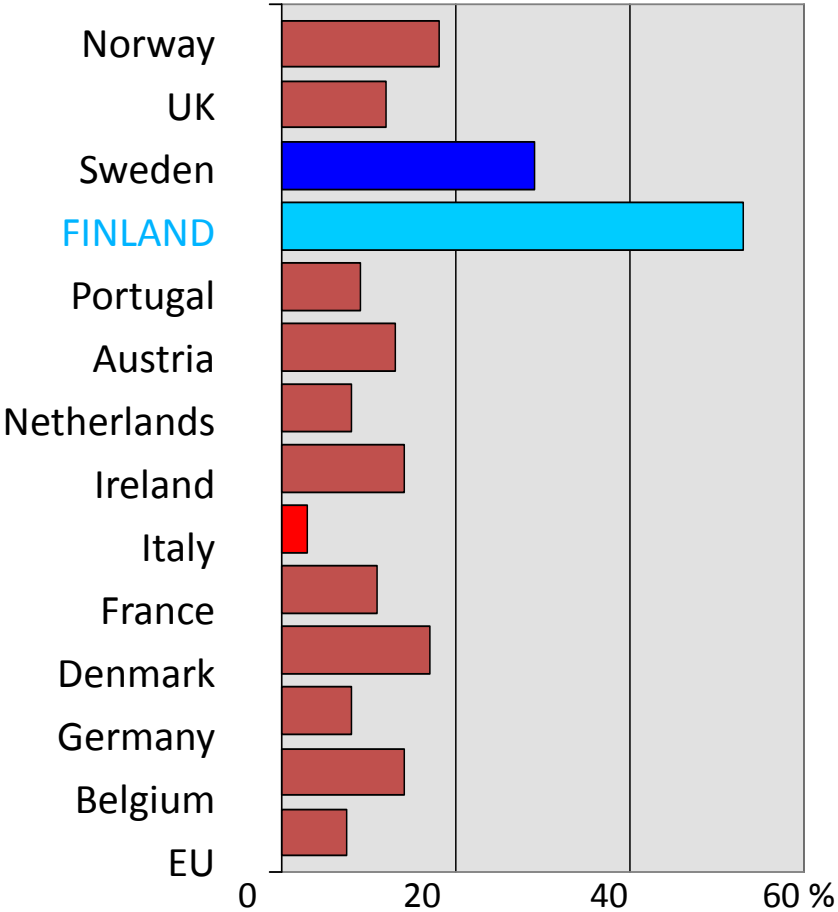


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Source: Statistics Finland

Top performer in EU in Co-operation between companies and universities and research institutes

Share of innovative companies having co-operation agreements with universities (1994-1996)

Share of innovative companies having co-operation agreements with public research institutes (1994-1996)



Source: Eurostat, Enterprise DG, 2nd Community Innovation Survey

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INPUT ANALYSIS: POLICY BENCHMARKING

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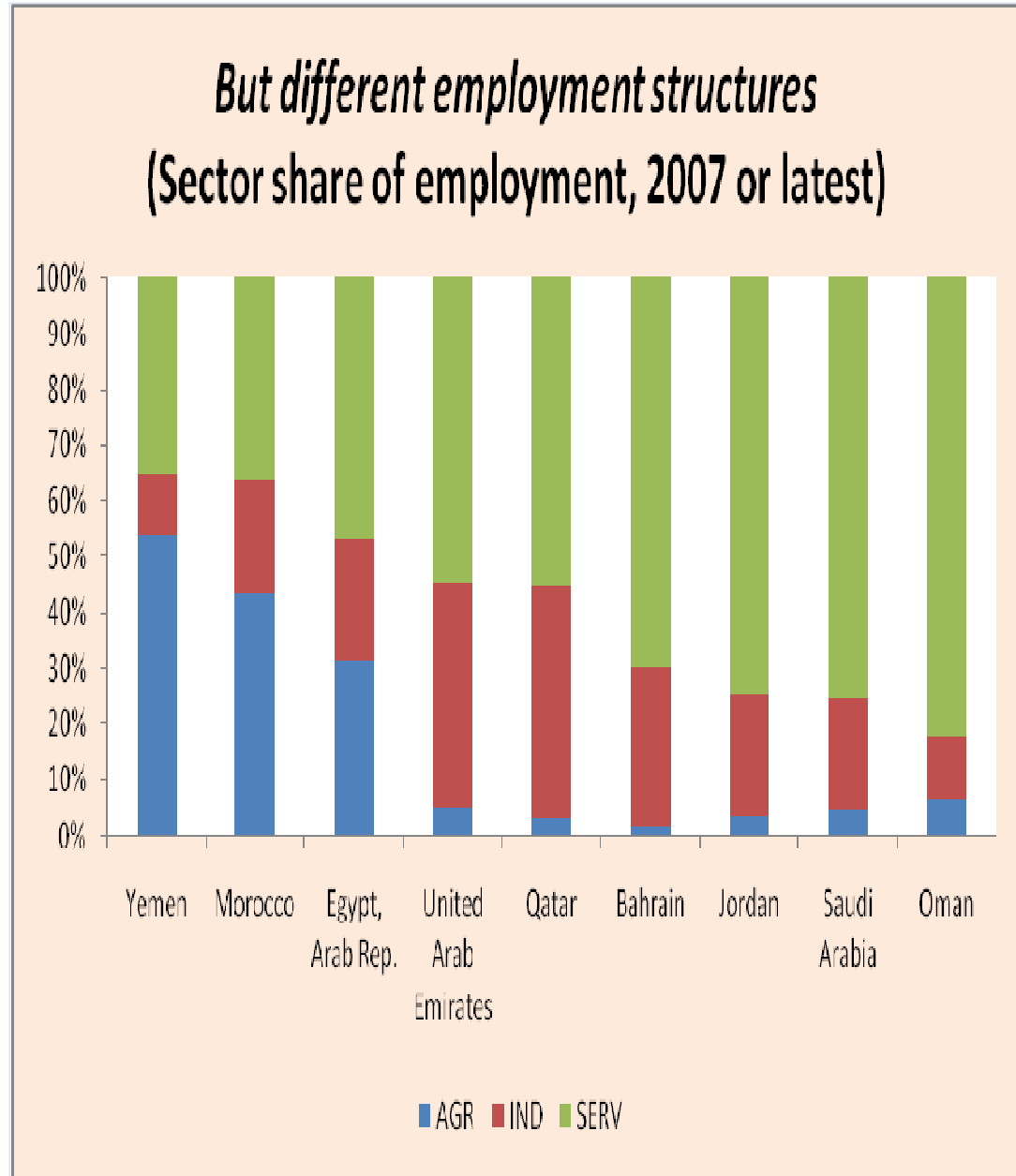
The services : high potential for innovation non exploited

-services dominant sector in GCC countries : radical innovation rarely occurs in services. (Carvalho 2006)

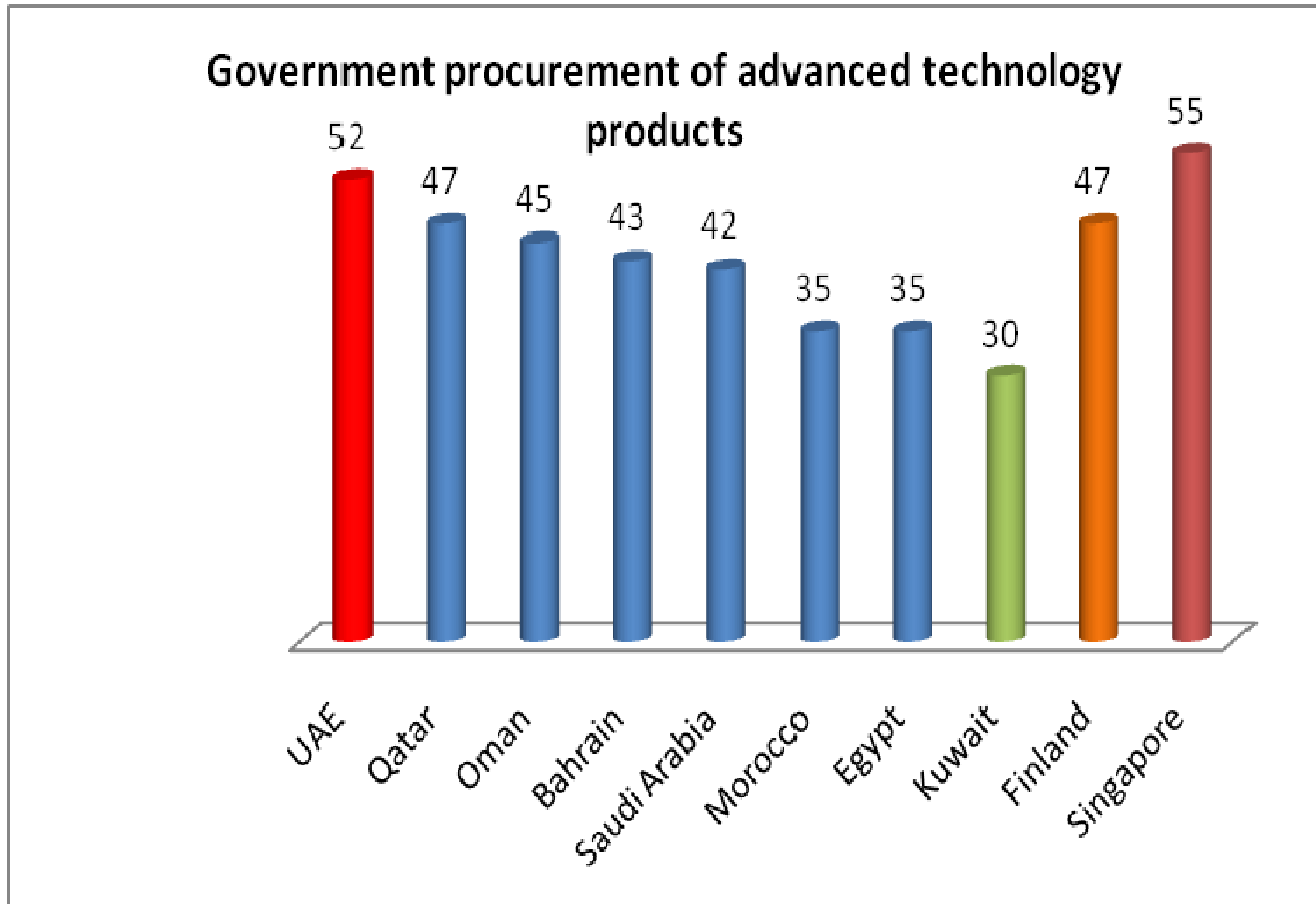
-inadequacy of the instruments used: both Frascati and Oslo (services recent)

-often CIS do not cater for services

-In a recent CIS survey in Turkey process innovation was excluded yet essential in the services sector (50% of GDP)



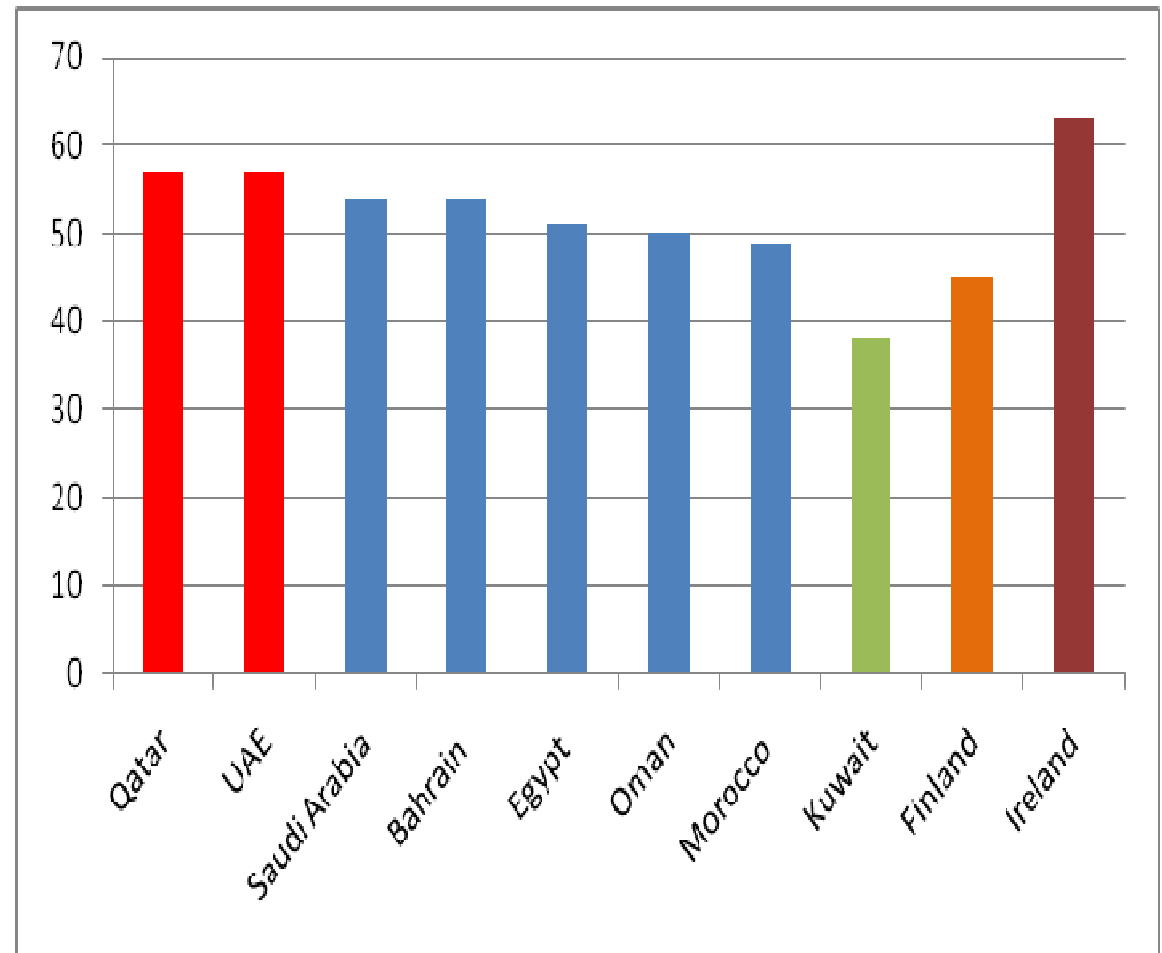
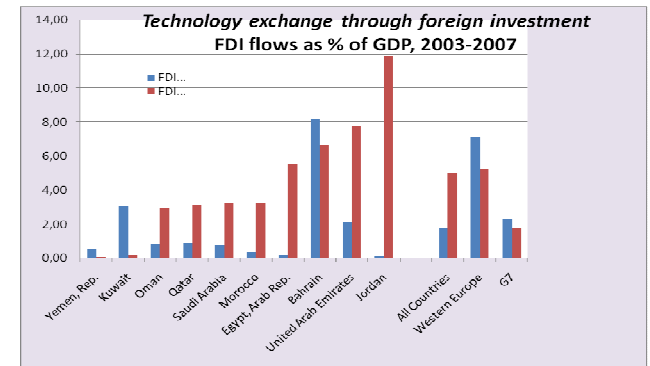
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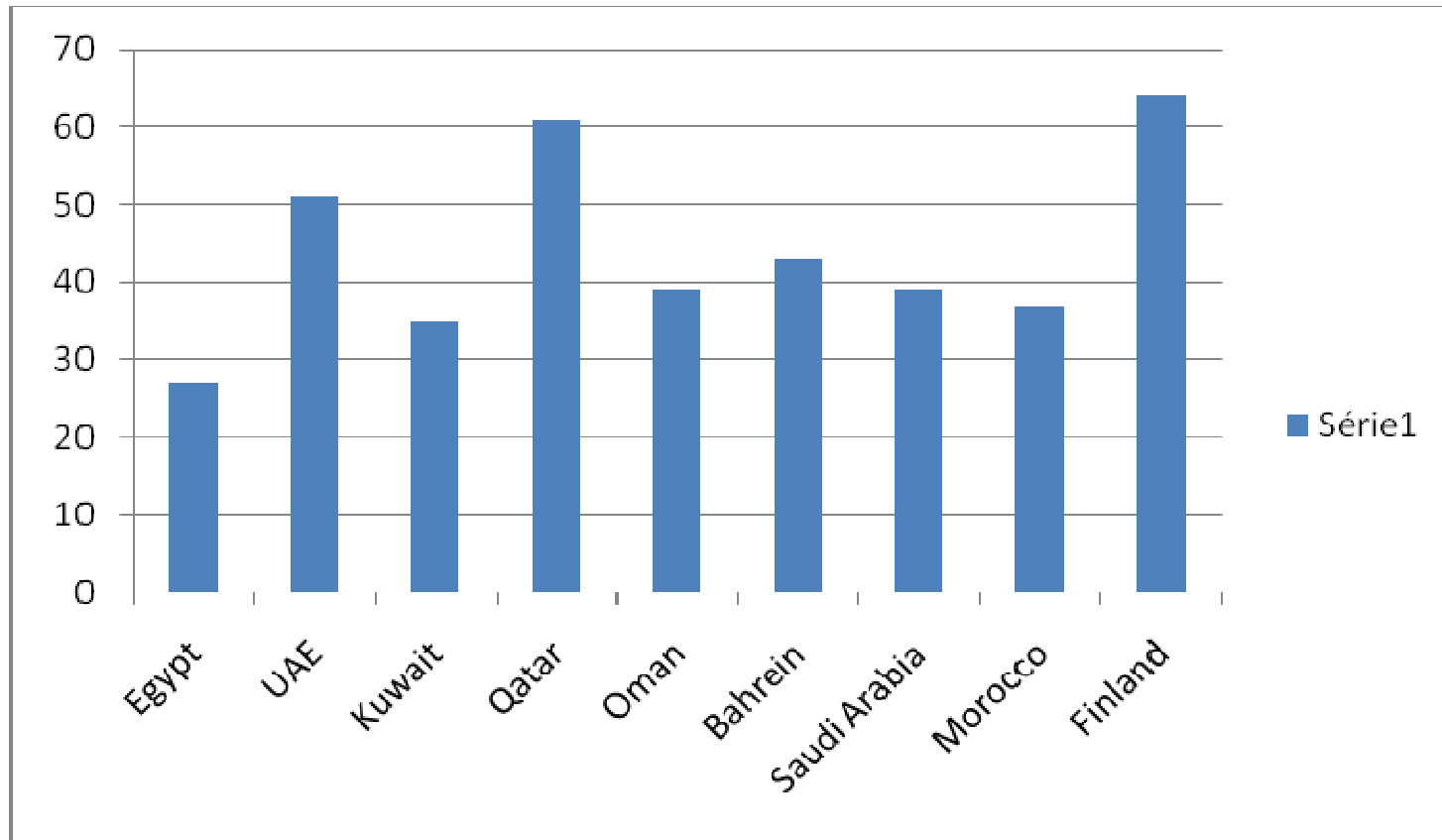
FDI and Technology transfer

- Survey : to what extent FDI brings advanced technology to the country?
- Flow of technology important for technology transfer
- -No garanty that it takes place:



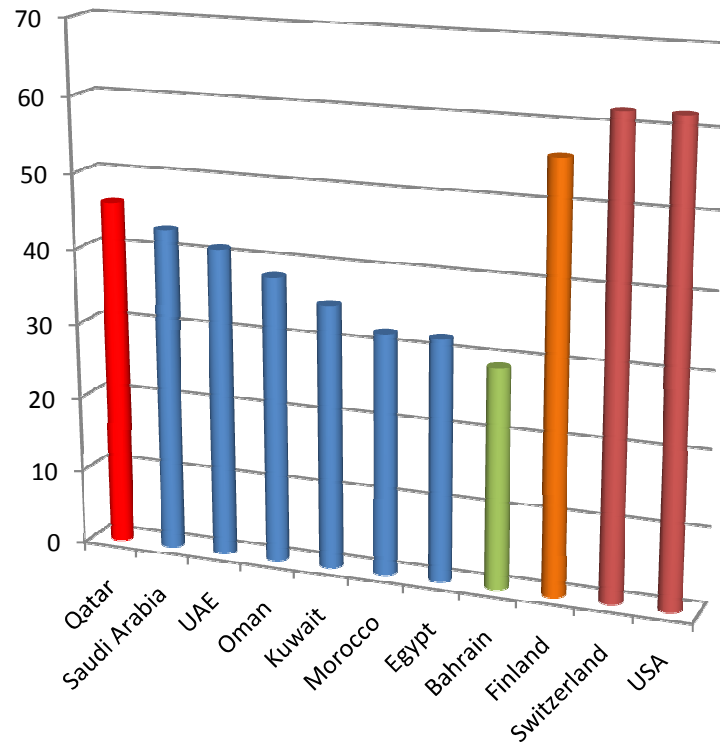
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Quality of maths and science (2010)

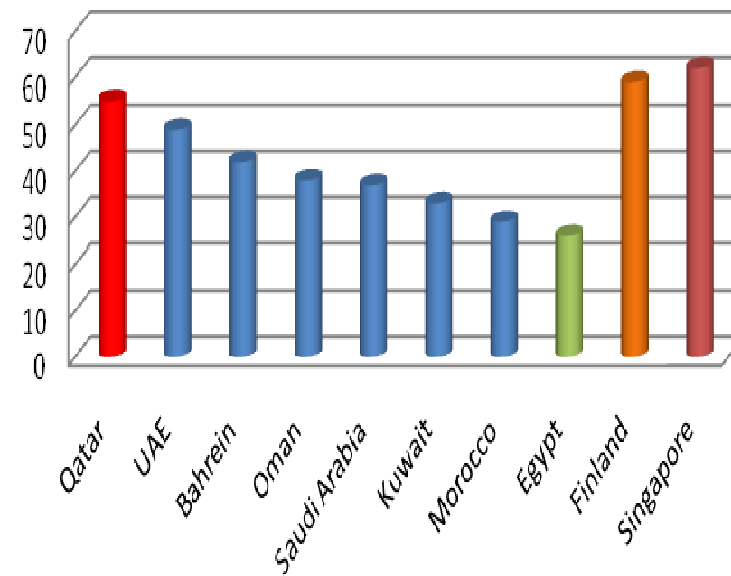


Quality matters, so does consistency

**Quality of research institutions:
2008-2009**



**Quality of the education system : 2008-
2009**

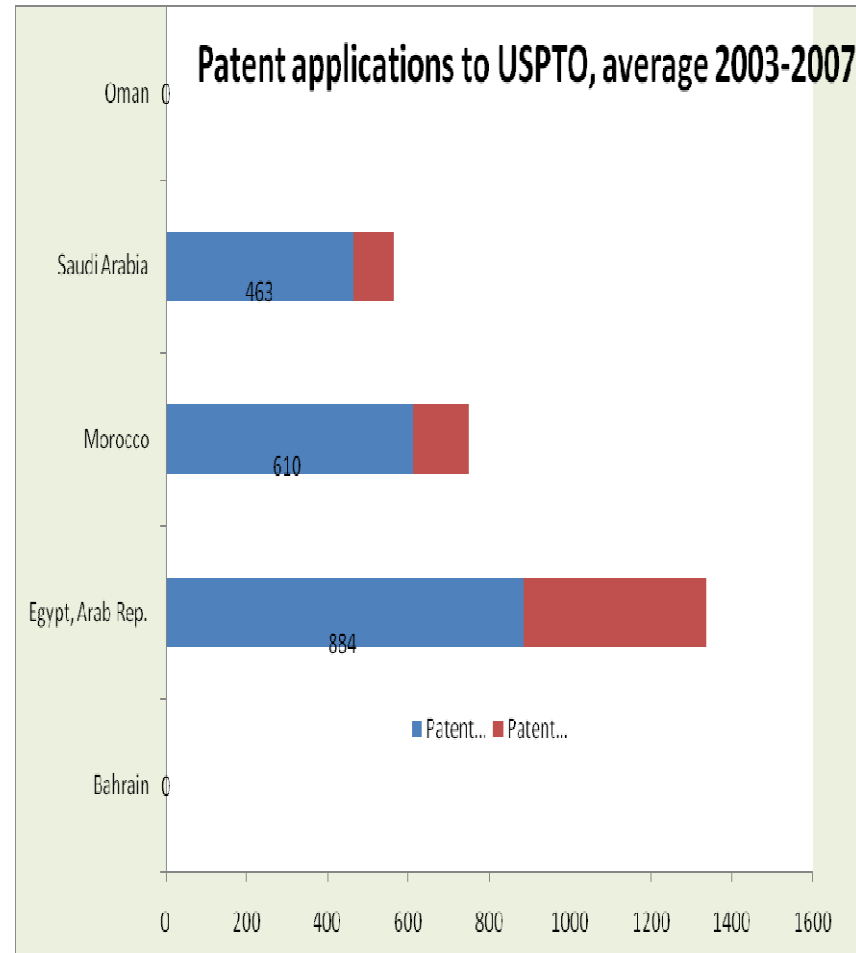
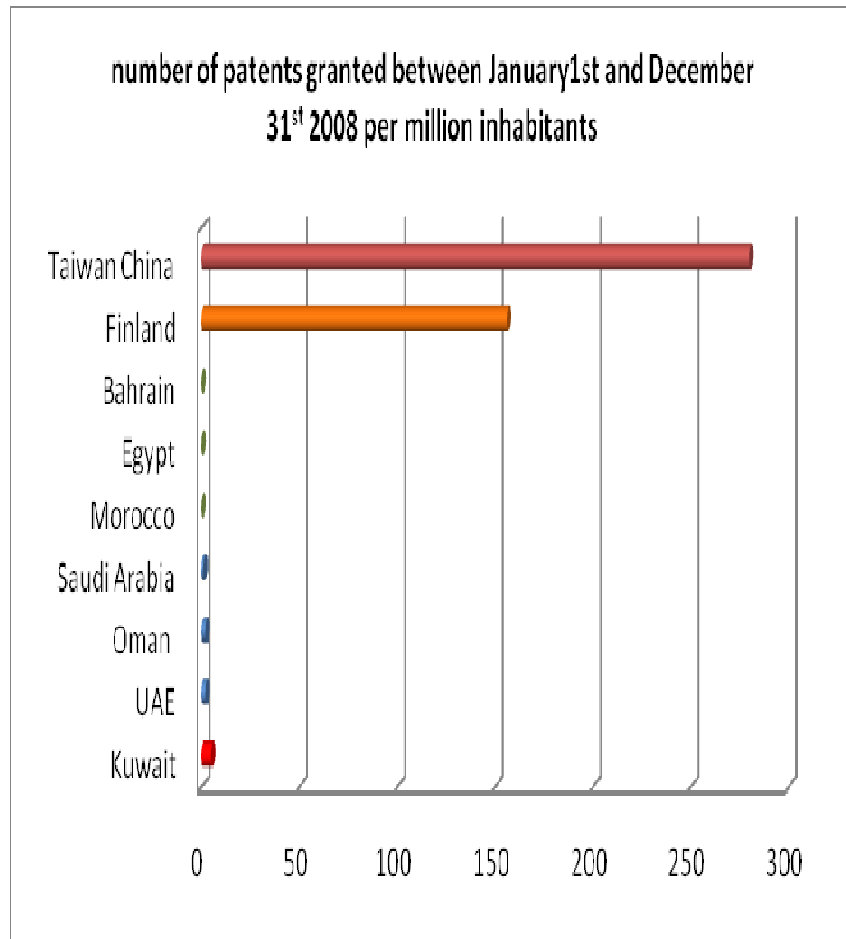


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OUTPUT ANALYSIS : BENCHMARKING PERFORMANCES

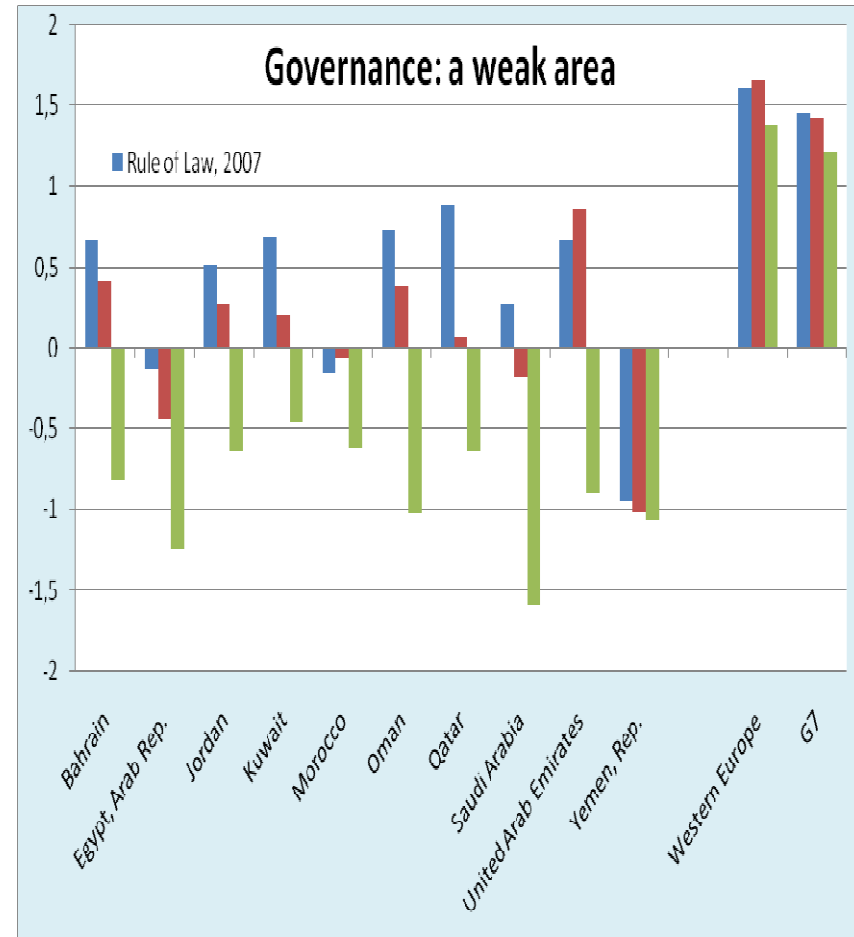
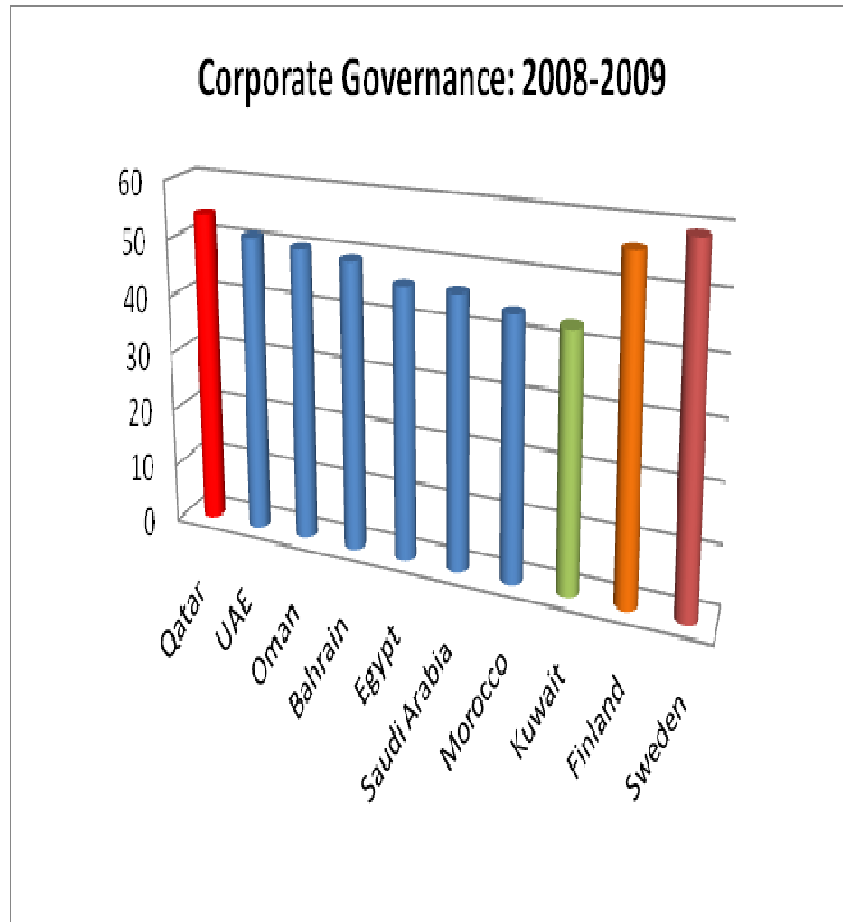
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Base unit matters



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Multi-level governance



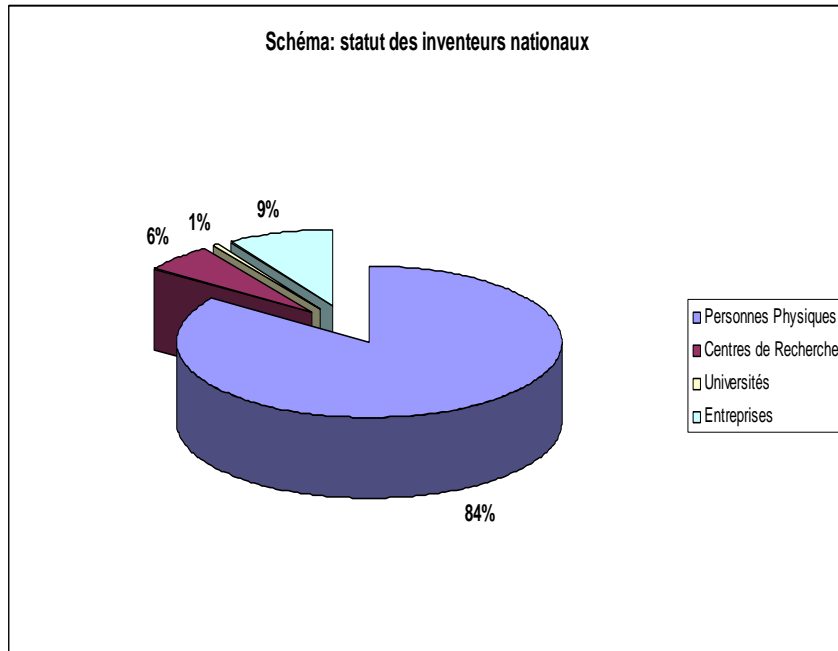
III. Benchmarking and best practices : limitations

The following items will be examined

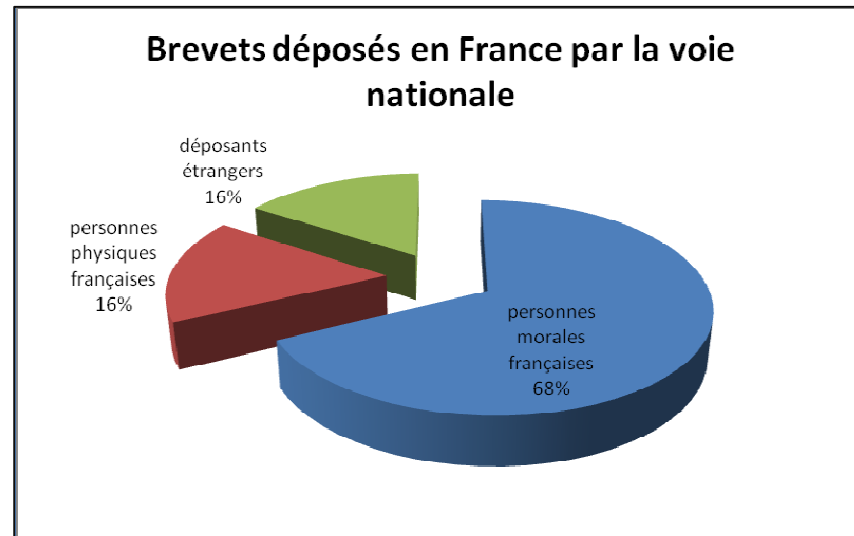
- -registered patents
- -firm knowledge of local patent services and tax incentives, but also attitudes
- -technology contain of exports and ownership structure
- -high-tech exports and ownership structure
- -absorptive capacity of the research system
- -unemployment of graduates and also realities in the ground
- -number of researcher, status and FTE,

Registered Patents

Patents in Morocco (2003)

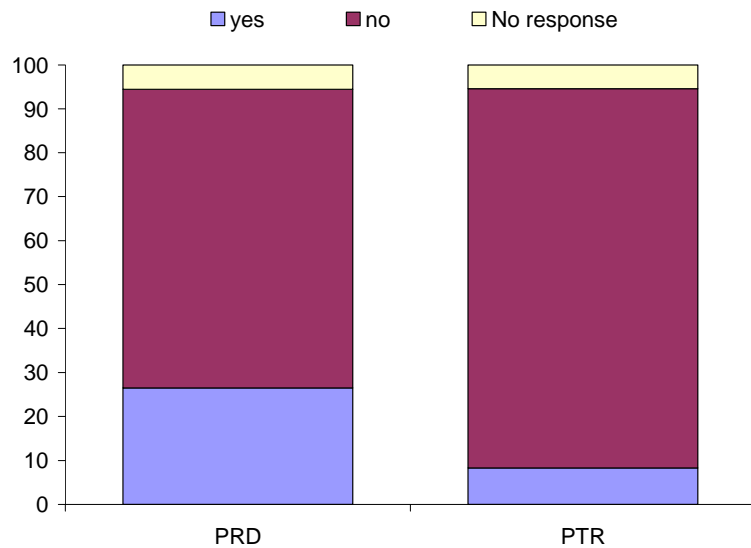


Patents in France (2006)

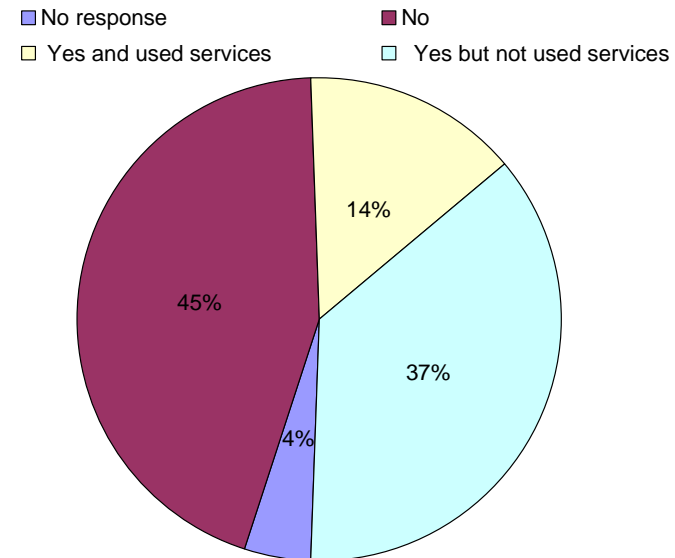


What level of information

Firm knowledge of tax break and innovation credit

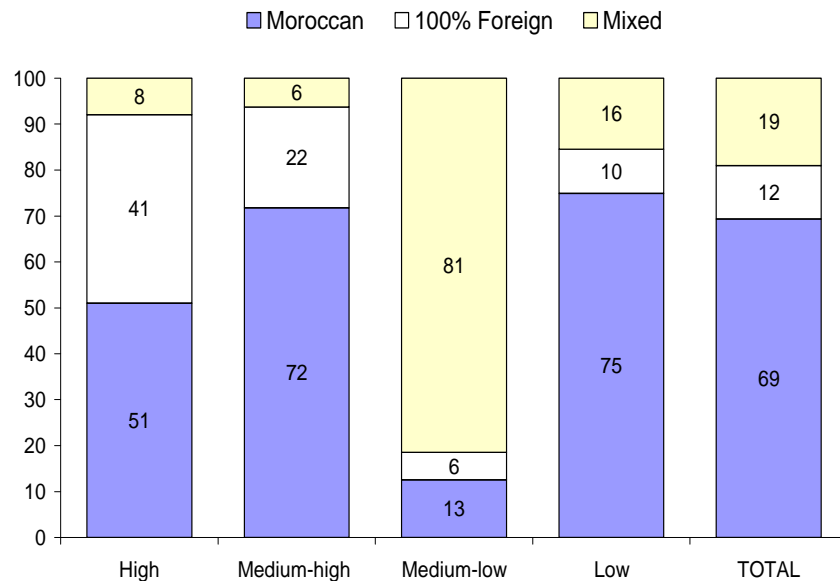


Firm knowledge and use of local patent office services

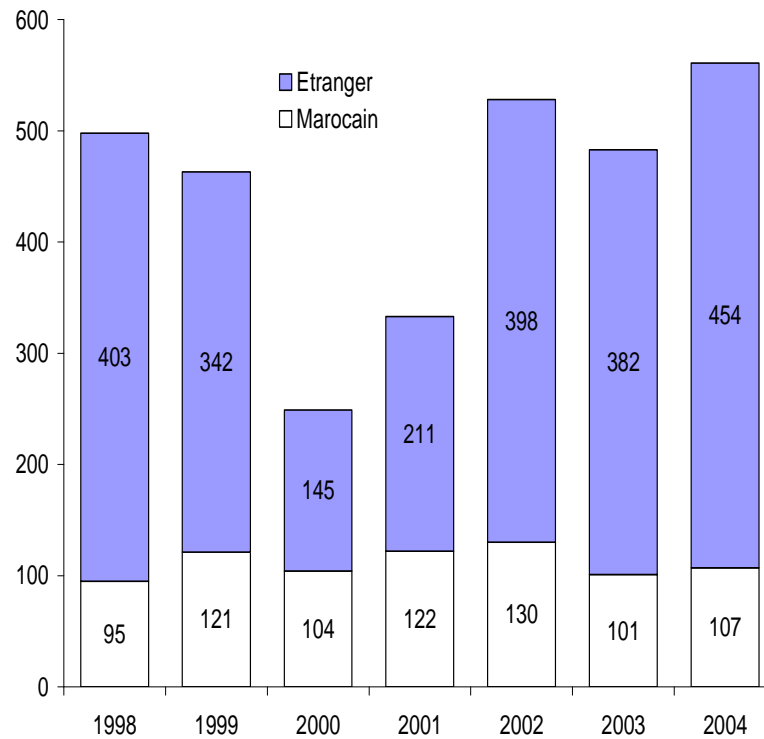


Technology content of exports and ownership structure

High technology content of exports and ownership structure

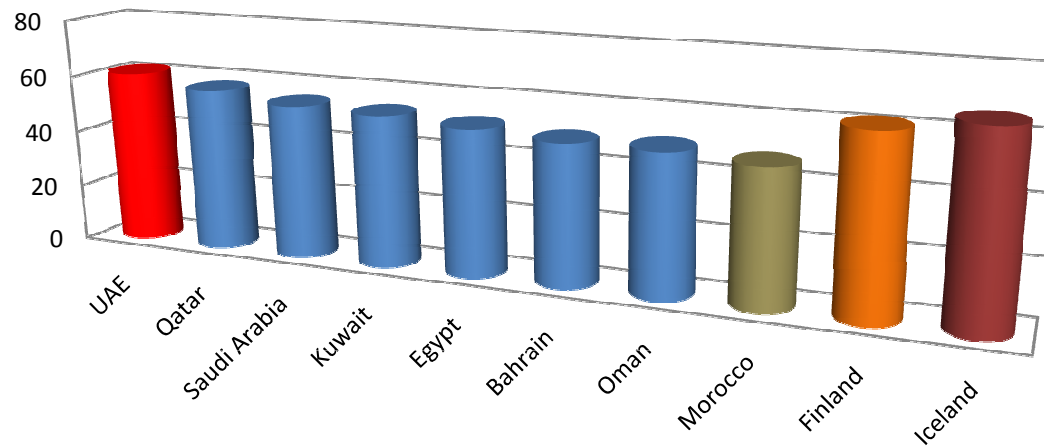


Domestic patents in Morocco

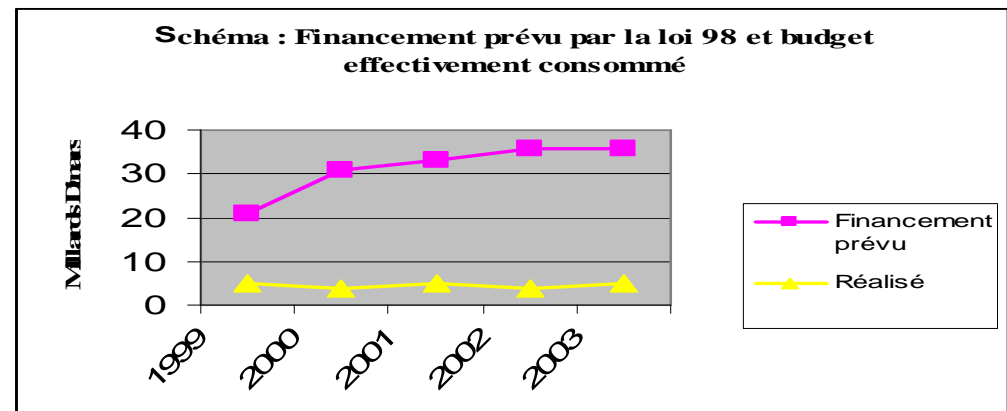


Problems of absorption

Technology absorption et firm level: 2008-2009

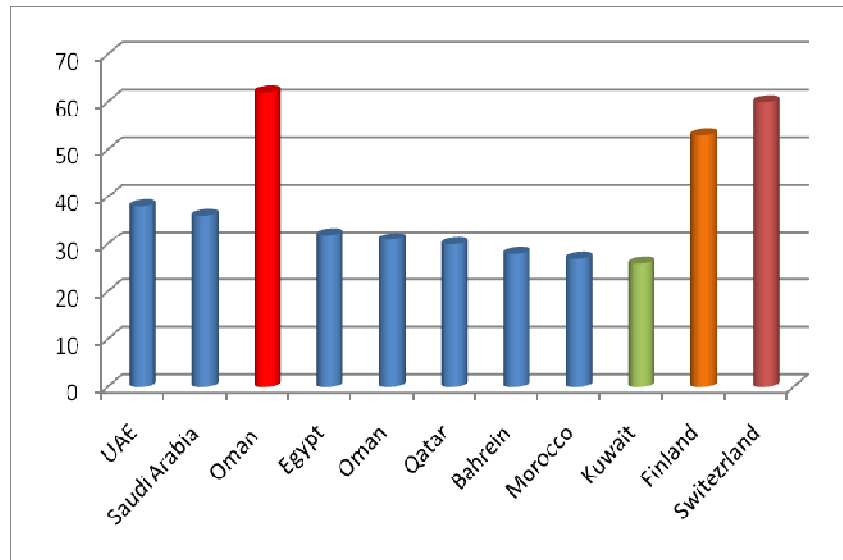


- the lowest are Kuwait and Egypt in Funding , Yet Egypt highest in scientific journal articles and in patenting (higher absorption capacity)
- How much of GDP per capita of the GCC members can be absorbed easily?

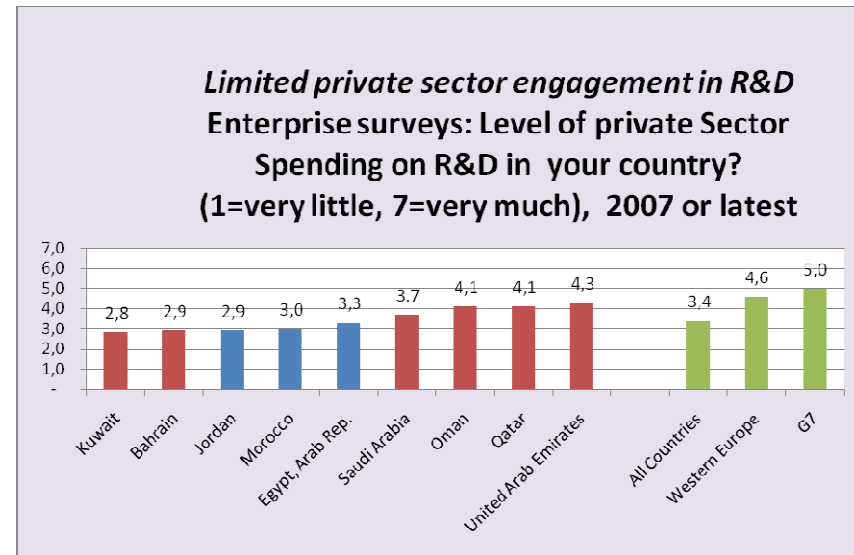


Private sector and company spending on R&D

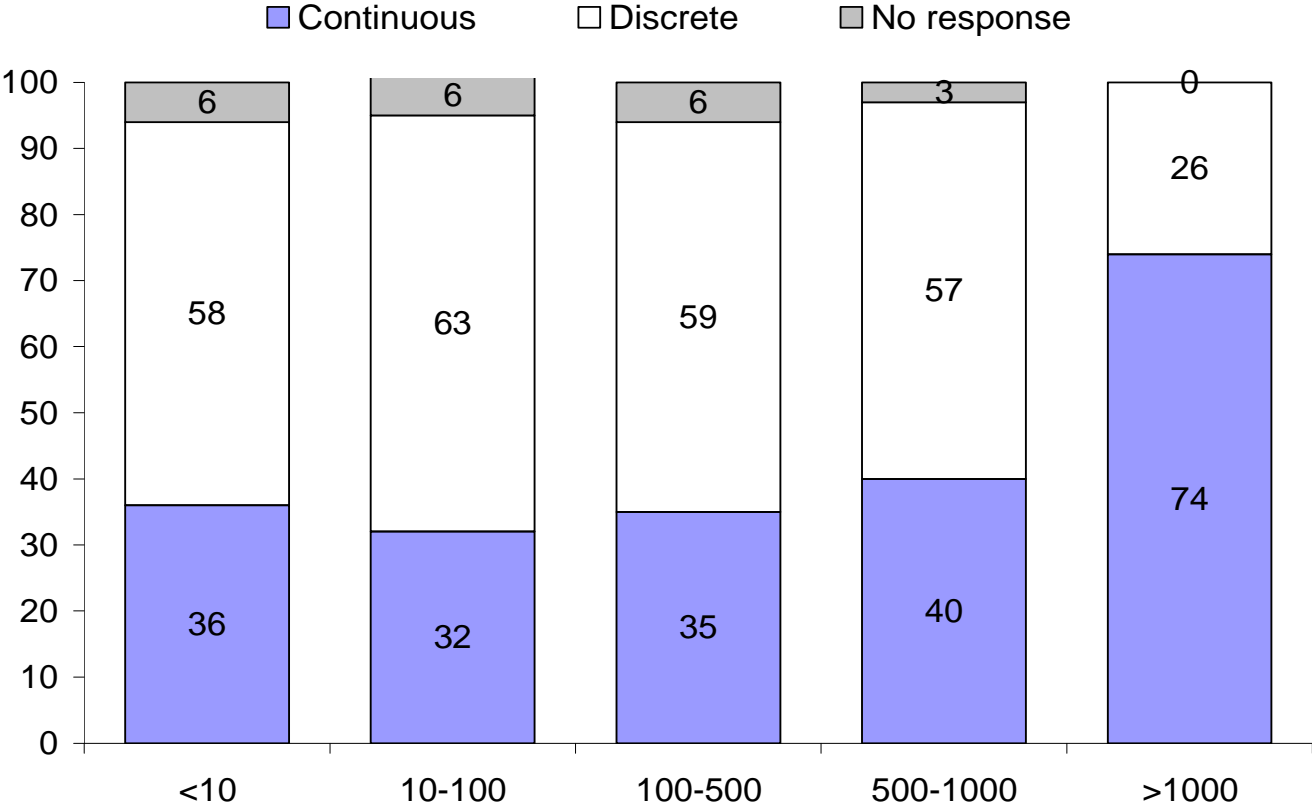
Company spending on R&D (2008/2009)



Private sector engagement

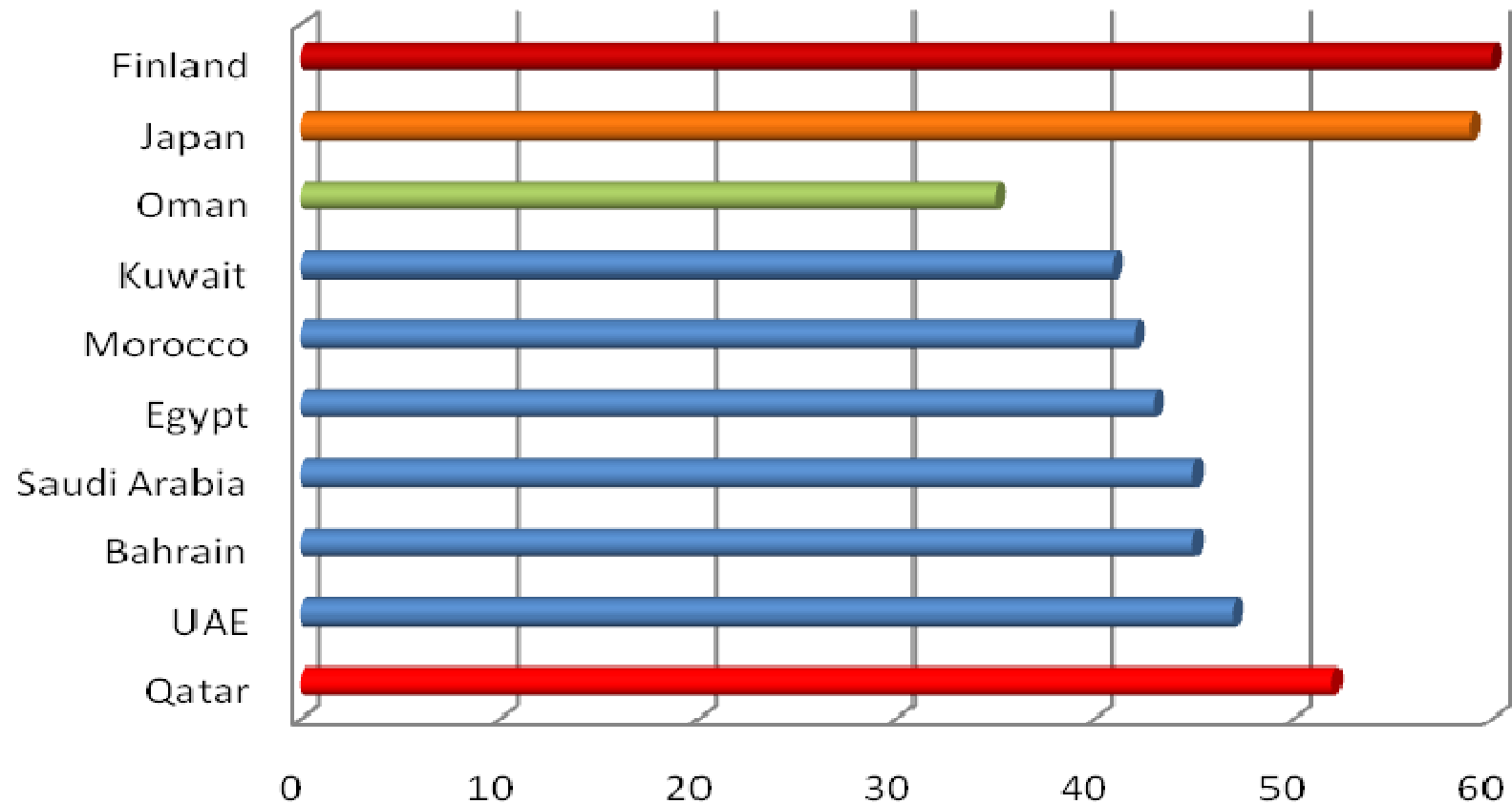


R&D activities by firm size: Morocco 2006



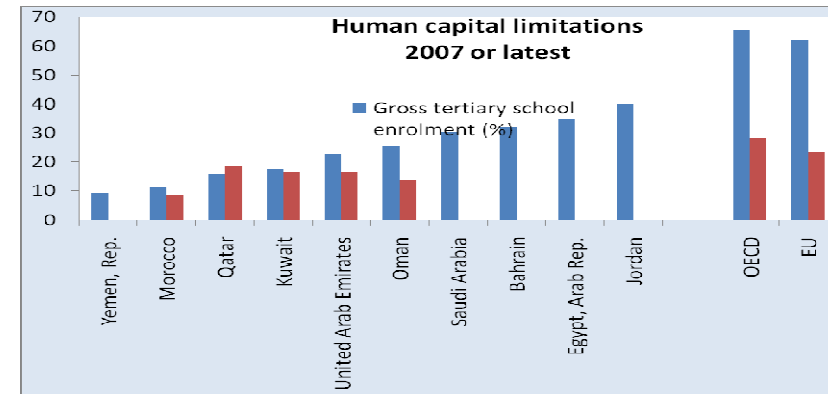
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Availability of scientists and engineers: to what extent are scientists and engineers available

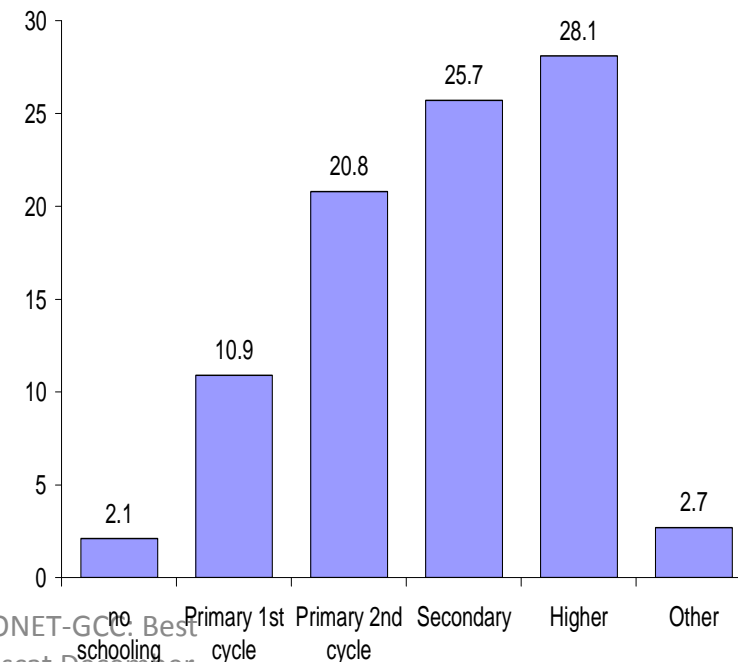


Education and labour market

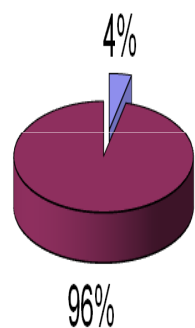
- -highest rate of education
- -policy incentives to prolong studies
- The rate of unemployment is ten times in higher educated than among illiterates
- - low absorption capacity particularly as a result of low knowledge intensive activities on top of the quality of output seen earlier



Unemployment rates by education level, Morocco, 2003

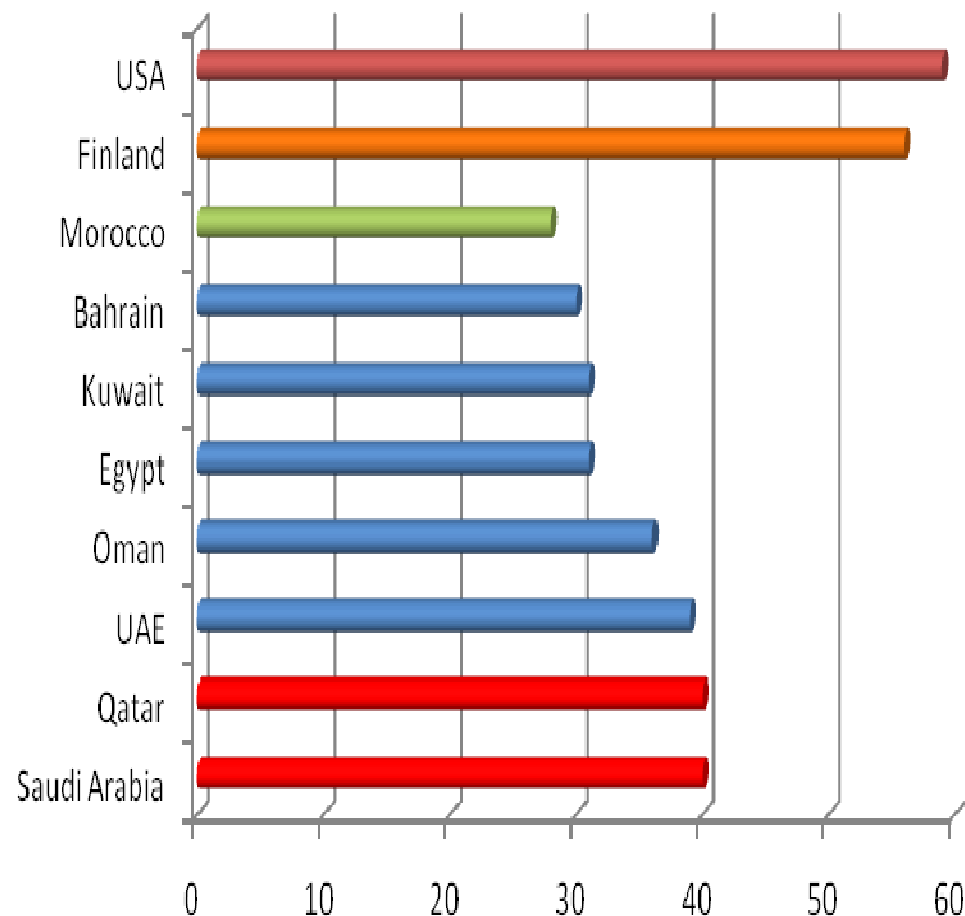


University-industry collaboration : 2008-2009



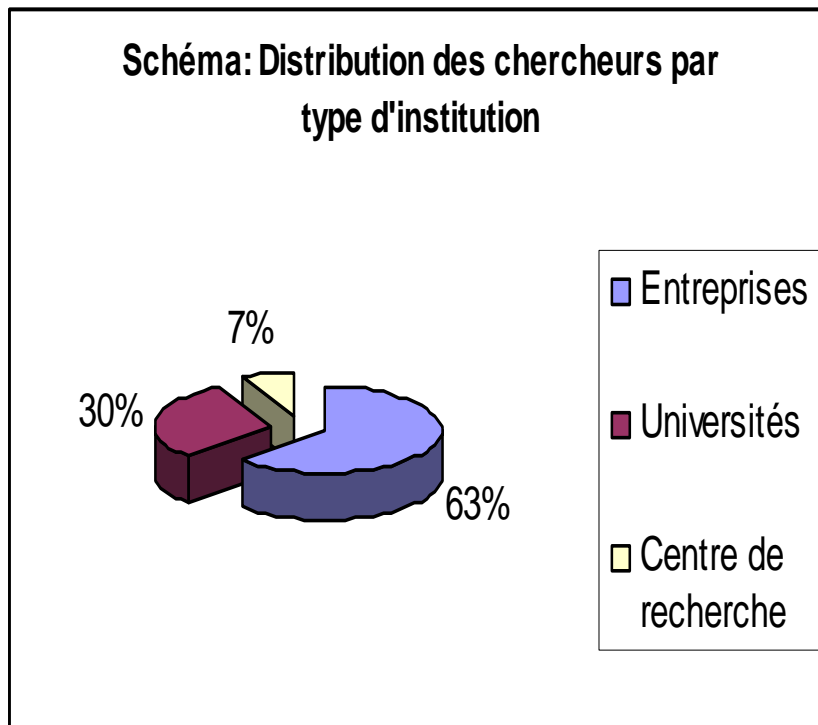
Operational relationships with local universities and training centres

No formal relationship



Human resources

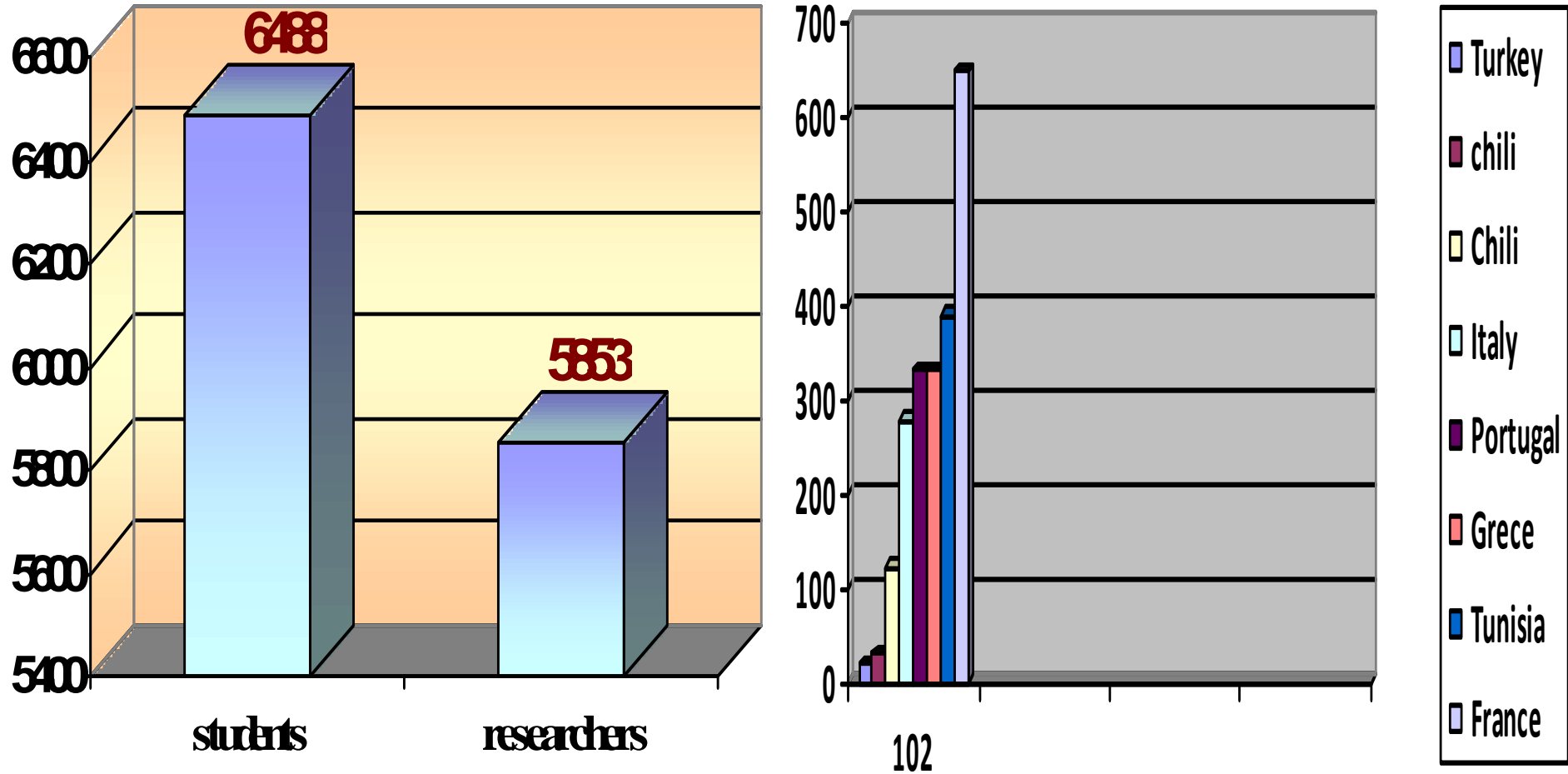
Researchers by type of institution in South Korea



Researchers in R&D per million

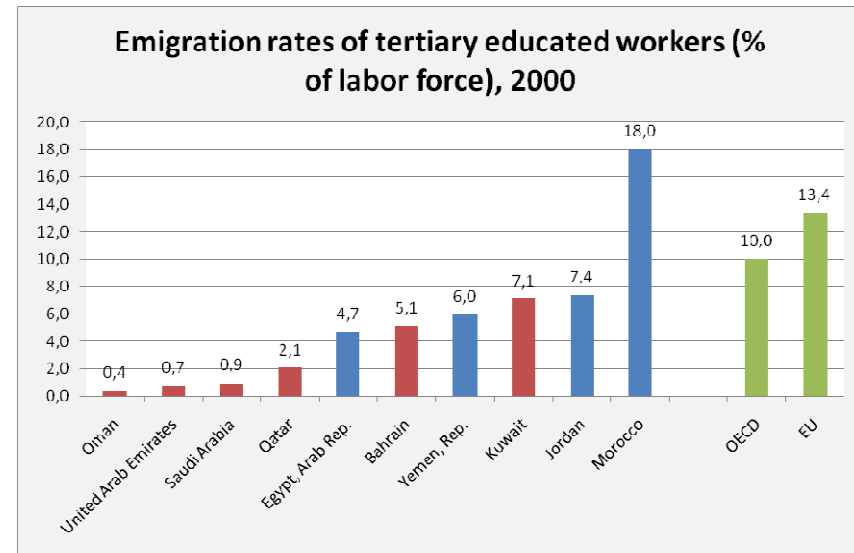
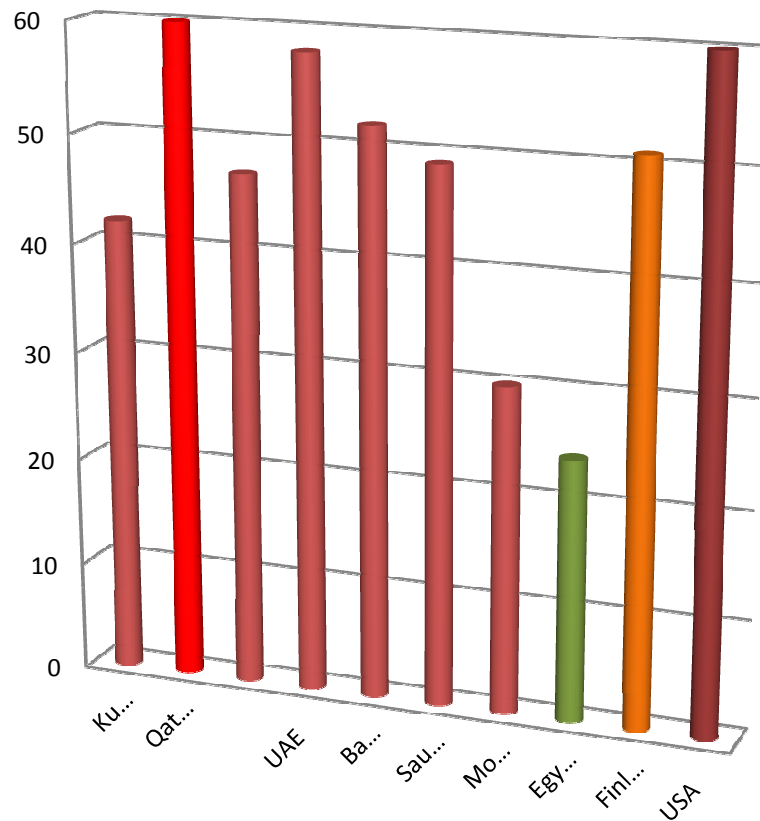


«Researchers » means different things eg: in Tunisia



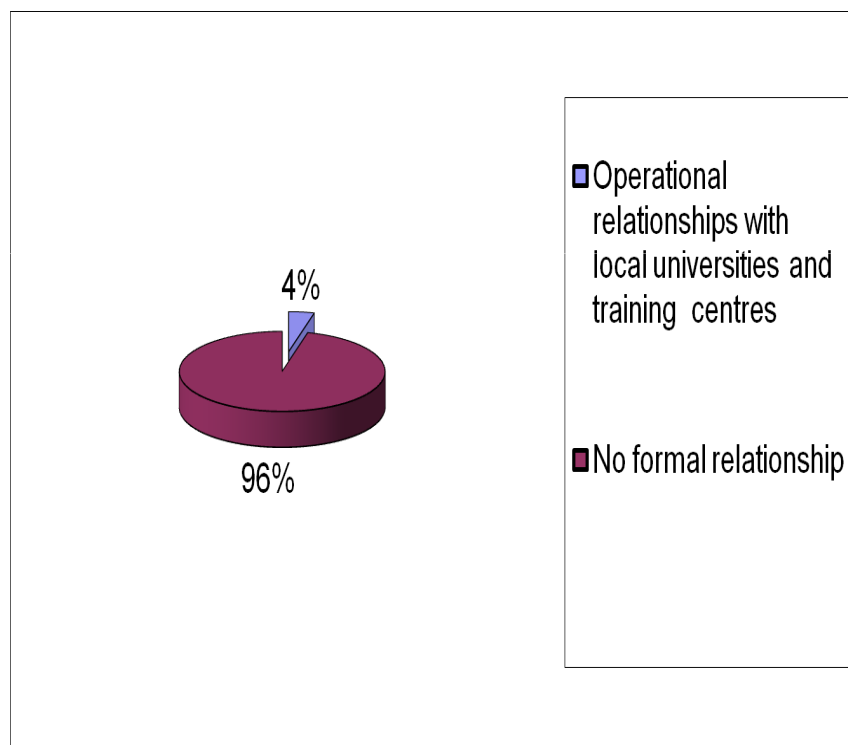
Brain drain & Brain gain: cross-checking

Capacity to retain competencies: 2008-2009



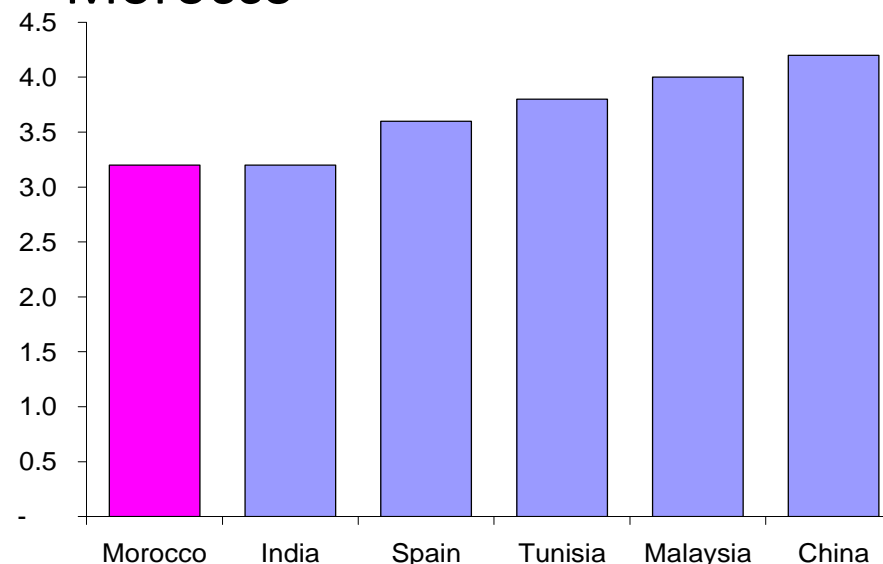
University-private sector collaboration

Collaboration University-industry Algeria 2007



Collaboration university-industry

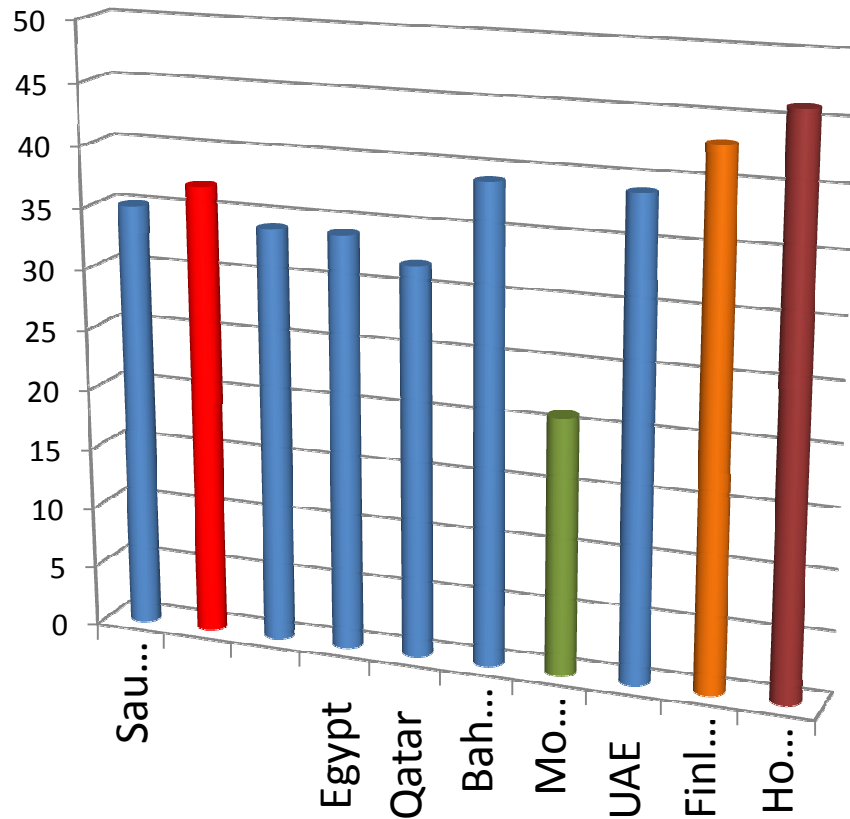
● Morocco



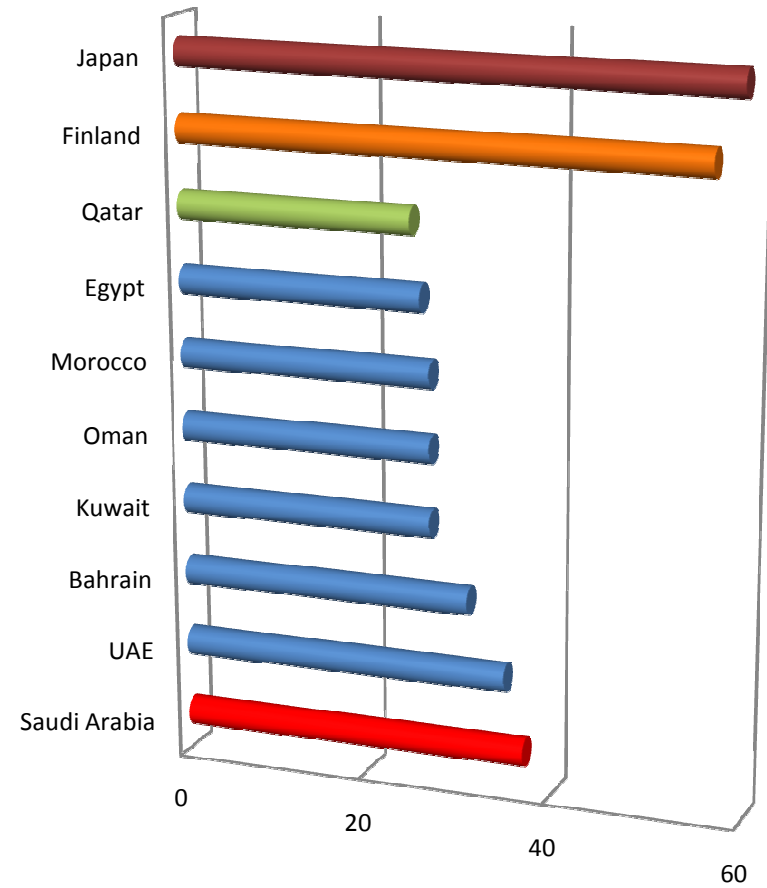
. Survey based, answers the question: Do companies collaborate closely with local universities in R&D activities?
1=non-existent, 7=intensive and on-going

Venture capital

Venture capital availability: 2008-2009



Capacity for innovation: 2008-2009



Venture capital as a percentage of GDP

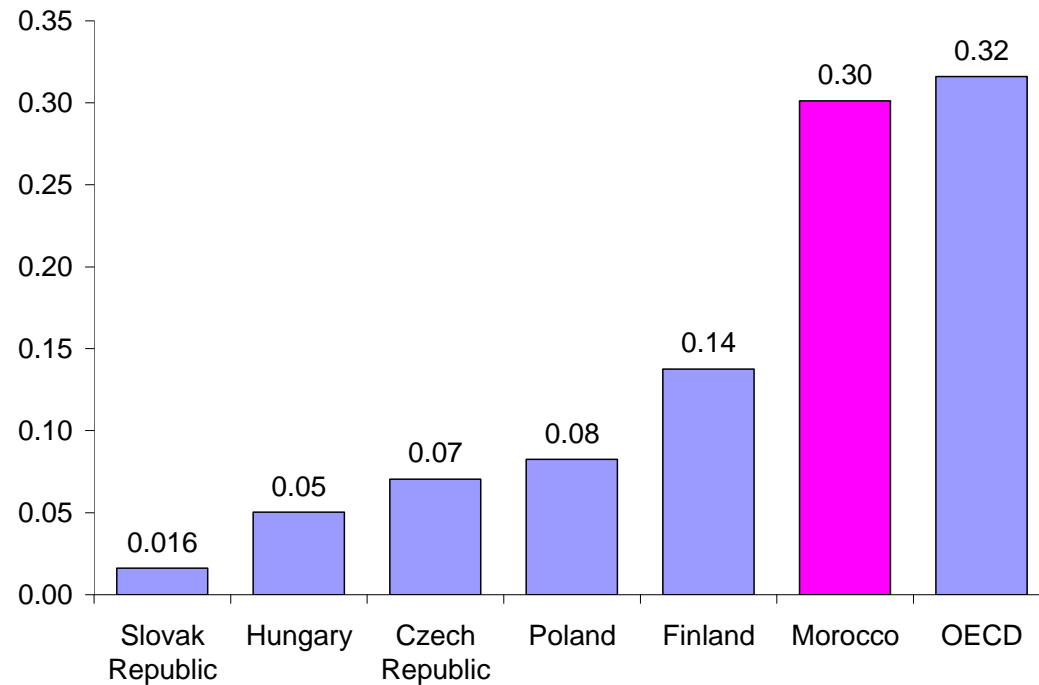
-Morocco almost as good as OECD

-Two times higher than Finland

-The figures are not comparable to those of OECD,

-funds include a broader set of financial transactions, including public finance mechanisms to attract FDI and associated technology transfers.

-in fact all funds in this category are, in fact, public in Morocco.



Limitations

- **benchmarking exercises may lead to the wrong conclusions since similar policies cannot be expected to render similar results in different environments.**
- Eg: If, for instance, the Asian successful industrializing countries are chosen as a standard, *it is vital to account for such exogenous factors* as the role of close economic relationships with Japan, China and the ASEAN countries, along with domestic factors that influence the effectiveness of policy implementation.
- **It is necessary to specify what the exercise comprises and what it does not. Far from being a mechanical tool, unfortunately, there is considerable scope for uncertainty in this approach as a result of:**
 - (i) two, or more-way causalities and interactions;
 - (ii) difficulties inherent in factoring in institutional constraints and
 - (iii) varying time-lags and response times.
- **It is by definition difficult to benchmark the quality and intensity of immaterial linkages: the way in which different actors interact and co-operate and interchange financial and human capital resources.**

Common weaknesses that hinder the GCC countries' progress and possible areas for cooperation with the EU

- Slow pace of reform in the countries' education systems
- Inadequate public awareness of science and technology and insufficient degree of preparedness for knowledge activity
- Overemphasis on physical assets and suboptimal allocation of resources and attention to the soft architecture of the knowledge economy
- Risk-averse approach to investment with regard to venture capital and technology financing
- Weak intellectual property rights (IPR) regimes
- Lack of regional coordination of investments and scientific efforts
- **(source: SRI)**

Conclusion : Proposed areas for cooperation Inconet-GCC

- Benchmarking and best practices :
 - Appropriation of different approaches and techniques
 - Linking policy benchmarking to performances
- Adapting techniques and approaches to specific needs of the GCC
- Policy instruments how to choose the best and most indicated instruments
- Governance of the whole process

References

- (1) « The innovation system and related policy issues in Morocco » Research Report, International Organisation for Knowledge Economy and Enterprise Development (IKED), Th. Andersson, A. Djeflat, S.J. De Silva April 2006, 59 pages
- (2) The national innovation system study on the Algérian innovation system and industrial strategy: (A. Djeflat, R.Devalan, F.Y. Toumi) [DZA/B7 – 4100/IB/98/0708 EuropeAid/121971/D/SV/DZ 2008](#)
- (3) The World Bank-ISESCO Report on Knowledge-based economy in the Mena region: 14 countries studies by Abdelkader Djeflat 2009 (including GCC)
- (4) Nistep « Comprehensive analysis of Science and Technology Benchmarking and foresight » Report n°99, May 2005, page 3